



DACS II Network Director (DND)
DND GUI Release 3.0.1
DND Forms Release 8.0.1
User's Manual
Volume I - Reference Information

365-353-853
Issue 1.0, GUI
R3.0.1/Forms R8.0.1
January 2000

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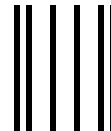
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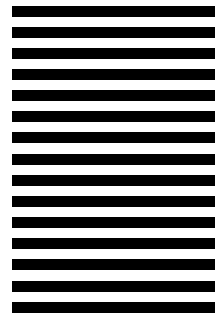
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Overview

Purpose	This manual was produced to assist users in performing tasks on the DACS II Network Director (DND).
Scope	This manual describes how to interpret and operate the DND Graphical User Interface (GUI) and DND Forms User Interface by providing reference information and step-by-step procedures.
Intended audience	This manual is intended for customers who have experience with DACS II operation and maintenance. In addition, users of the DND Graphical User Interface, should be familiar with: ■ Basic Netscape navigation ■ Mouse button operations ■ Basic UNIX navigation in a GUI environment (i.e. OpenWindows, Solaris, etc.)
Reason for issue	This issue of this document supports DND GUI Release 3.0.1 and DND Forms Release 8.0.1.

About This Release

Overview

DACS II Network Director (DND) enables you to manage a communications network from a UltraSparc 30 or UltraSparc 60 workstation. DND provides a Netscape-based Graphical User Interface (GUI) and a Forms-based User Interface (UI).

The GUI provides alarm management, operator functions, and most system administration functions. From the GUI, you can create a network of elements. Each node in the network is represented by an icon on the network map. The nodes and the interties on the network map display alarm information and provide access to provisioning forms and status information.

The UI provides an interface which was previously available with the I-2000 Controller. The UI is available from screen addressable terminals and terminal emulators. The UI provides forms for alarm management, service provisioning, and most system administration functions.

Network Elements

DND supports two classes of network elements:

- Digital Access Cross-Connect System (DACS)
- Simple Network Management Protocol (SNMP).

The DACS network elements include:

- DACS II CEF (Capacity Expansion Frame)
- DACS II Non-CEF (2 or 3 bays)
- DACS II SBF (Single-Bay Frame)
- DACS II ESBF (Enclosed Single-Bay Frame)
- DACS II ISX (Integrated Shelf Cross-Connect).

The SNMP network elements include:

- DACS II AX
 - ACCULINK Access Controller (AAC)
 - Integrated Access Communications Server (IMACS)
 - "Other" type SNMP devices.
-

About This Release (Continued)

Communication Links

A DACS communicates with DND over the following links:

- X.25
- SNIDER
- TCP/IP.

DACS Functionality

The DND GUI and the DND Forms interface both provide access to DACS functions.

SNMP Functionality

SNMP devices communicate with DND using SNMP over a LAN. All SNMP functionality is accessed through the DND GUI interface.

About This Release (Continued)

Terms Used

These terms are used throughout this manual:

DACS - refers to the DACS II CEF, Non-CEF, SBF, ESBF, and DACS II ISX. Note that the DACS II AX is not included in this group.

DACS II AX 4/11 or *DACS II AX* - refers to both the DACS II AX 4 and 11 slot versions.

Frame and *DACS* may be used interchangeably, or they may be used together when describing more than one DACS.

SNMP nodes - refers to any of the SNMP network elements: DACS II AX 4/11, IMACS, AAC, and the Other-type SNMP devices.

The Glossary provides definitions for other terms used in this manual.

New Features for Release 3.0 DND GUI and DND Forms

DND Release 3.0.1 supports these new features:

- **Message Log Recovery**

Provides a means of recovering DACS messages after the link is restored.

- **Support for DACS II AX Release 7.07**

Three new circuit packs for the DACS II AX supported:

- Quad OCU
 - Octal HS (High Speed)
 - Voice Cards.
-

About This Release (Continued)

New Features for Release 3.0 DND GUI Only

DND GUI Release 3.0 also supports these new features:

- **Alarm Intervention**
Ability to escalate or de-escalate severities for desired alarms.
- **MMFG Provisioning**
Provisioning of DS3 cross-connection facilities.
- **DACS Telnet**
Connection to DACS II CEF sites via a telnet interface.
- **SNMP Northbound Interface**
Provides the Network Management System (NMS) with NPC, circuit, DACS, and SNMP information when requested.
- **Backups**
 - Scheduling of periodic backups
 - Retrofitting a database from tape
- **Equipment Views**
 - Support for older DACS II models (SBF, ESBF, Non-CEF)
 - Support for FTU, IFTU, and IFTU2 units (previously, all were displayed as an IFTU)
 - Automatic updating for DACS equipment
 - Alarm State vs. Alarm Intervention display
- **Termination Naming**
Provisioning of a port on an SNMP site (for DND database purposes only).
- **SNMP Cross-Connections (Termination Circuit Mapping)**
Provisioning cross-connection maps on SNMP site.
- **Report Enhancements**
 - Assigning titles to reports
 - Support for DS3 Performance Monitoring on the HDS3U
 - Support for Alarm Intervention and Message Log Recovery.

(Continued on next page)

About This Release (Continued)

New Features for Release 3.0 DND GUI Only (Continued)

■ **Various Other Enhancements**

- Ability to provision a range of NPCs
- Ability to find free channels on NPCs for circuit provisioning.

■ **New GUI forms**

There are four brand new forms available at the GUI including: MMFG Provisioning, SNMP NB Provisioning, Termination Naming, and Termination Circuit Mapping.

■ **New GUI Reports**

There are four brand new reports available at the GUI including: Message Log Report, MMFG Provisioning Report, Termination Naming Report, and the Termination Mapping Report. See Chapter 16, Report Operations, for details.

Manual Contents

Overview

This manual is divided into two volumes:

- Volume I: Reference Information
- Volume II: General Tasks.

Volume I provides background information, screen images, and field descriptions. Volume II provides step-by-step procedures for many of the tasks you can complete using DND. It is advisable to read over the reference material prior to beginning any procedures.

General Tasks and Supporting Elements

The chapters in Volume II are divided into General Tasks (GT) and Supporting Elements (SE). GTs are the major tasks performed by users, and SEs are sub-tasks within a GT.

When possible, there is a correspondence between the chapter numbers in Volume I and the GTs in Volume II. For example, the general tasks related to reference Chapter 5: NE Provisioning begin at GT-5.1G for the DND GUI interface, and GT 5.1U for DND Forms user interface.

SEs are associated with a GT and are usually located immediately after the GT. Some SEs are reusable in other GTs in that particular chapter and in the GTs of other chapters. When a GT step references an SE, the Reference column of the GT Instructions table will note which SE to locate. GTs and SEs follow a similar numbering scheme. For example, *SE 5.1.1G* indicates the first SE in GT 5.1G.

Volume I: Reference Information

Volume I: DND Reference Information contains the following sections:

- **About This Manual** - provides information on manual content, related documentation, ordering documentation, and a description of the new features for this release.
 - **Chapter 1: Introduction** - provides information on the DND system and its features.
 - **Chapter 2: Getting Started** - provides information on logging in and out of the system, setting DND environment variables, configuring the network elements, setting up printers, and using the DND system.
-

(Continued on next page)

Manual Contents (Continued)

Volume I: Reference Information, Continued

- **Chapter 3: DND Screens and Form Navigation** - provides general information on using the DND GUI and Forms interfaces.
- **Chapter 4: System Administration** - provides information on login ports, link administration, printer set-up, and other system administration functions.
- **Chapter 5: Network Element Provisioning** - provides information on the network elements that can be provisioned through DND.
- **Chapter 6: End User Provisioning** - provides information on how End Users fit into the network and how to use the End User Provisioning form.
- **Chapter 7: Intertie Provisioning** - provides information on the different types of interties and its provisioning form.
- **Chapter 8: NPC Provisioning** - provides information on NPC provisioning actions, such as creating, restoring, modifying, and deleting NPCs from a DACS, and its provisioning form.
- **Chapter 9: Circuit Provisioning** - provides information on circuit provisioning actions, such as activating, modifying, deleting, and alternate routing. Also provides information on circuit trace and reconfiguration plans.
- **Chapter 10: MMFG Provisioning** - provides information on MMFG provisioning actions, such as creating, restoring, modifying, and deleting MMFGs from a DACS, and its provisioning form.
- **Chapter 11: Termination Naming and Circuit Mapping** - provides information on the provisioning of an SNMP termination and using the assigned terminations to provision SNMP termination circuit maps.
- **Chapter 12: Subrate Provisioning** - provides information on provisioning DS0 channels, and establishing subrate cross connections.
- **Chapter 13: Equipment Views** - provides information on displaying, provisioning, and interpreting the equipage and alarm severity of DACS sites and units in the network.
- **Chapter 14: Partitioning** - provides information on what partitioning is, how to assign nodes to partitions, and how to assign user access to a partition.

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Manual Contents (Continued)

Volume I: Reference Information, Continued

- **Chapter 15: User Provisioning** - provides information on how to establish logins for DND operators and system administrators.
- **Chapter 16: Report Operations** - provides information on generating and displaying reports, and the content of alarm messages.
- **Chapter 17: Database Audit/Synchronization** - provides information on database audit and synchronization actions to monitor and sync the DACS and DND databases, and its provisioning form.
- **Chapter 18: Reconfiguration Plans** - provides information and examples on circuit reconfiguration plans and automatic reconfiguration plans.
- **Chapter 19: Test Ports and Test Access** - provides information on Test access, such as setting up connections in Monitor, Split, and Hub modes to test potentially faulty circuits.
- **Chapter 20: Backup and Restore** - provides information on backing and restoring the DND database and report formats.
- **Chapter 21: 24-Hour Performance Monitoring** - provides information on setting up and browsing 24-hour performance monitoring data.
- **Chapter 22: Task Administration**- provides information on scheduling tasks. For DND Forms, this chapter also covers managing the print queue.
- **Chapter 23: DACS Message/Passthrough** - provides information on communicating directly to the DACS using DACS Message/Passthrough or Telnet.
- **Chapter 24: Outage Logs** - provides information on maintaining records on circuit and NPC outages.
- **Chapter 25: Alarm Surveillance** - provides information on getting a list of all active alarms in the system and acknowledging alarms.
- **Chapter 26: DND Interfaces** - provides information on specialized interfaces available for specific customers only.

Volume II: General Tasks

Volume II: DND General Tasks include procedures to support the actions described in the reference chapters.

Manual Contents (Continued)

Content Summary With DND you can perform four types of functions:

- DND functions - are related to setting up and keeping the DND system running properly. For example, printer administration, user administration, backup/restore, and database backup/restore are DND functions.
- DACS functions- are related to provisioning, monitoring, and reporting on the DACS II ISX and DACS II. For example, circuit, NPC, and substrate provisioning are DACS functions
- SNMP functions - are related to the DACS II AX, AAC/IMACS, and Other-type SNMP nodes. For example, DND provides telnet for SNMP provisioning, and the SNMP Alarm Log for reporting SNMP alarms.
- SNMP and DACS functions - are functions that effect both types of network elements. For example, NE provisioning and partitioning must be done for SNMP nodes and DACS nodes.

(Continued on next page)

Manual Contents (Continued)

Content Summary (Continued) The following table summarizes the contents of this user's manual. For each chapter, the table lists the functional area covered in the chapter, and the related General Tasks (GTs) in Volume II for DND GUI and DND Forms.

Ch	Reference Chapter	Function	DND GUI GTs	DND Forms GTs
2	Getting Started	DND	2.1G - 2.4G	2.1U - 2.13U
3	DND Screens and Form Navigation	DND	3.1G - 3.2G	Not Applicable
4	System Administration	DND	4.1G - 4.8G	4.1U - 4.12U
5	NE Provisioning	SNMP and DACS nodes	5.1G - 5.10G	5.1U - 5.7U
6	End User Provisioning	SNMP and DACS nodes	6.1G - 6.3G	Not Applicable
7	Intertie Provisioning	SNMP and DACS nodes	7.1G - 7.5G	Not Applicable
8	NPC Provisioning	DACS	8.1G - 8.8G	8.1U - 8.9U
9	Circuit Provisioning	DACS	9.1G - 9.12G	9.1U - 9.10U
10	MMFG Provisioning	DACS	10.1G - 10.5G	Not Applicable
11	Termination Naming and Circuit Mapping	SNMP	11.1G - 11.7G	Not Applicable
12	Subrate Provisioning	DACS	Not Applicable	10.1U - 10.3U
13	Equipment Views	SNMP and DACS nodes	Not Applicable	Not Applicable
14	Partitioning	SNMP and DACS nodes	14.1G	Not Applicable
15	User Provisioning	DND	15.1G - 15.5G	15.1U - 15.6G
16	Report Operations	All	16.1G - 16.2G	16.1U - 16.8U
17	Database Audit/Synchronization	DND	17.1G - 17.5G	17.1U - 17.6U
18	Reconfiguration Plans	DACS	Not Applicable	18.1U - 18.3U
19	Test Port and Test Access	DACS	19.1G - 19.9G	19.1U - 19.13U
20	Backup and Restore	DND	20.1G - 20.3G	20.1U - 20.13U
21	24-Hour Performance Monitoring	DACS	Not Applicable	21.1U - 21.2U
22	Task Administration	DACS	22.1G - 22.2G	22.1U - 22.4U
23	DACS Message/Passthrough	DACS	23.1G - 23.2G	23.1U - 23.7U

Ch	Reference Chapter	Function	DND GUI GTs	DND Forms GTs
24	Outage Logs	DACS	24.1G	24.1U - 24.2U
25	Alarm Surveillance	DND	25.1G - 25.4G	25.1U
26	DND Interfaces	DND	26.1G	Not Applicable

Manual Contents (Continued)

Appendices

- **Appendix A: Summary of Fields for Customized Reports** - provides information on Forms Interface and GUI report form fields that can be customized using the DND Forms Interface.
 - **Appendix B: Error Messages** - provides a full listing of the error messages that can appear on the **Command Response** field located on each form or the Status Summary window located on the DND Main screen.
 - **Abbreviations and Acronyms** - provides the definitions for the acronyms used throughout this document.
 - **Glossary** - defines the terms used throughout this document.
 - **Index** - allows you to quickly locate information on topics covered in the document. To use the index, look up a topic you want and turn to the page references listed by that topic.
-

Additional Documentation

Overview

The following documents provide additional information on DND, DACS II, and DACS II ISX. These documents may prove useful when using the DACS II Network Director with DACS II and DACS II ISX.

Documents

DACS II Network Director (DND):

Document Number	Document Title
365-353-857	<i>DACS II Network Director (DND) Release 3.0 Software Release Description</i>
365-353-856	<i>DACS II Network Director (DND) Release 3.0 Installation Manual</i>

DACS II:

Document Number	Document Title
365-353-271	<i>DACS II Operation and Maintenance, Release 9.0 MML, 1.544-Mbit/s Interface</i>
365-353-272	<i>DACS II Commands and Messages, Release 9.0 MML, 1.544-Mbit/s Interface</i>
365-353-273	<i>DACS II Quick Reference Guide, Release 9.0 MML, 1.544-Mbit/s Interface</i>
365-353-291	<i>DACS II Operation and Maintenance, Release 9.0 MML, 2.048-Mbit/s Interface</i>
365-353-292	<i>DACS II Commands and Messages, Release 9.0 MML, 2.048-Mbit/s Interface</i>
365-353-293	<i>DACS II Quick Reference Guide, Release 9.0 MML, 2.048-Mbit/s Interface</i>
IPH903	<i>DACS II Installation Procedures Handbook (DACS II CEF and Non-CEF)</i>
IPH903I	<i>DACS II Installation Procedures Handbook (DACS II ESBF and ECEF)</i>

(Continued on next page)

Additional Documentation (Continued)

Documents, Continued

DACS II ISX:

Document Number	Document Title
365-359-103	<i>DACS II ISX Operations and Maintenance, Release 3.1.2 MML</i>
365-359-104	<i>DACS II ISX Commands and Messages, Release 3.1.2 MML</i>
365-359-105	<i>DACS II ISX Quick Reference Guide, Release 3.1.2 MML</i>
365-359-080	<i>DACS II ISX Installation Manual, Release 2.0 and 3.0</i>
365-059-079	<i>DACS II ISX Installation Manual, Expansion Shelf</i>

**NOTE:**

Be sure to obtain the documents that support the DACS II or DACS II ISX release that is running with your DND system.

DACS II AX 4/11:

Document Number	Document Title
365-359-203	<i>DACS II AX 4/11 Release 7.07 User's Guide</i>

Other:

To obtain documentation for the Integrated Multiple Access Communication Server (IMACS) or ACCULINK Access Controller, contact the product vendor (Premisys Communications).

Netscape and CDE Reference Information

Netscape offers on-line context sensitive and content help. Sliding the mouse over fields and buttons on the Netscape toolbars will reveal very brief descriptions of the toolbar element. For more detailed help, click **Help...** in the Netscape Menu Bar to reveal a table of contents of Netscape topics.

The Common Desktop Environment (CDE) has content on-line help. On the lower left hand side of the control panel at the bottom of the screen, click the “?” icon to reveal a table of contents of CDE topics.

How to Order Documentation

Document Ordering

Documentation for the DND, DACS II, and DACS II ISX, can be ordered through the Customer Information Center (CIC). Many documents are available in hard copy and on compact disk. For more information, call:

1-888-LUCENT-8 (1-888-582-3688)
1-317-322-6416 (Outside North America)

OR write:

Customer Information Center
ATTN: Customer Service Representative
2833 N. Franklin Road
Indianapolis, IN 46219

OR go to:

[/http://www.lucentdocs.com/](http://www.lucentdocs.com/)

Click on **Documents** to locate, order, and/or download customer information products.



NOTE:

For automatic updates (for one year), request that the document be given "standing order" status.

Introduction

1

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Background

Introduction

This chapter provides an overview of the capabilities and features of the DACS II Network Director (DND).

Objectives

This chapter provides background information to help you perform the following:

1. State the features and functions of DND
 2. State the types of provisioning supported by DND.
-

Related information

For related information refer to these documents:

- *DACS II and DACS II ISX Operation and Maintenance Guide*
 - *DACS II Network Director Installation Manual*
 - *DACS II Network Director Software Release Description.*
-

Network Description

Network Overview

The DACS II Network Director (DND) is a network management system that allows you to provision and monitor networks with up to 316 network elements, including up to 60 DACS II and DACS II ISX elements (maximum 30,720 NPCs) and 256 SNMP nodes.

DND supports up to 16 simultaneous login sessions, including the console.

DND Advantages

DND has the following advantages:

- DND enables you to view the state of your entire network in a graphical user interface with representations for network elements and interties. DND alerts you when and where new alarms occur.
 - Equipment views help you quickly isolate problems and view the current equipage information.
 - DND provides easy access to provisioning forms, reports, and alarm information directly from the map icons and also from pull-down menus from the DND task bar.
 - DND provides access to most DACS II and DACS II ISX functions. DND automatically generates DACS commands based on the user's entries on the DND GUI and UI forms.
 - DND provides consolidated telnet access for provisioning SNMP nodes.
-

Network Description (Continued)

Network Diagram

The elements of the configuration are the DACS frames, SNMP nodes, and the DND. Figure 1-1 shows a Sun Ultra 60/360 Creator 3D which supports up to 60 DACS II and DACS II ISX frames. DND is also available on a Sun Ultra 30 Model 300 to support up to 30 DACS frames.

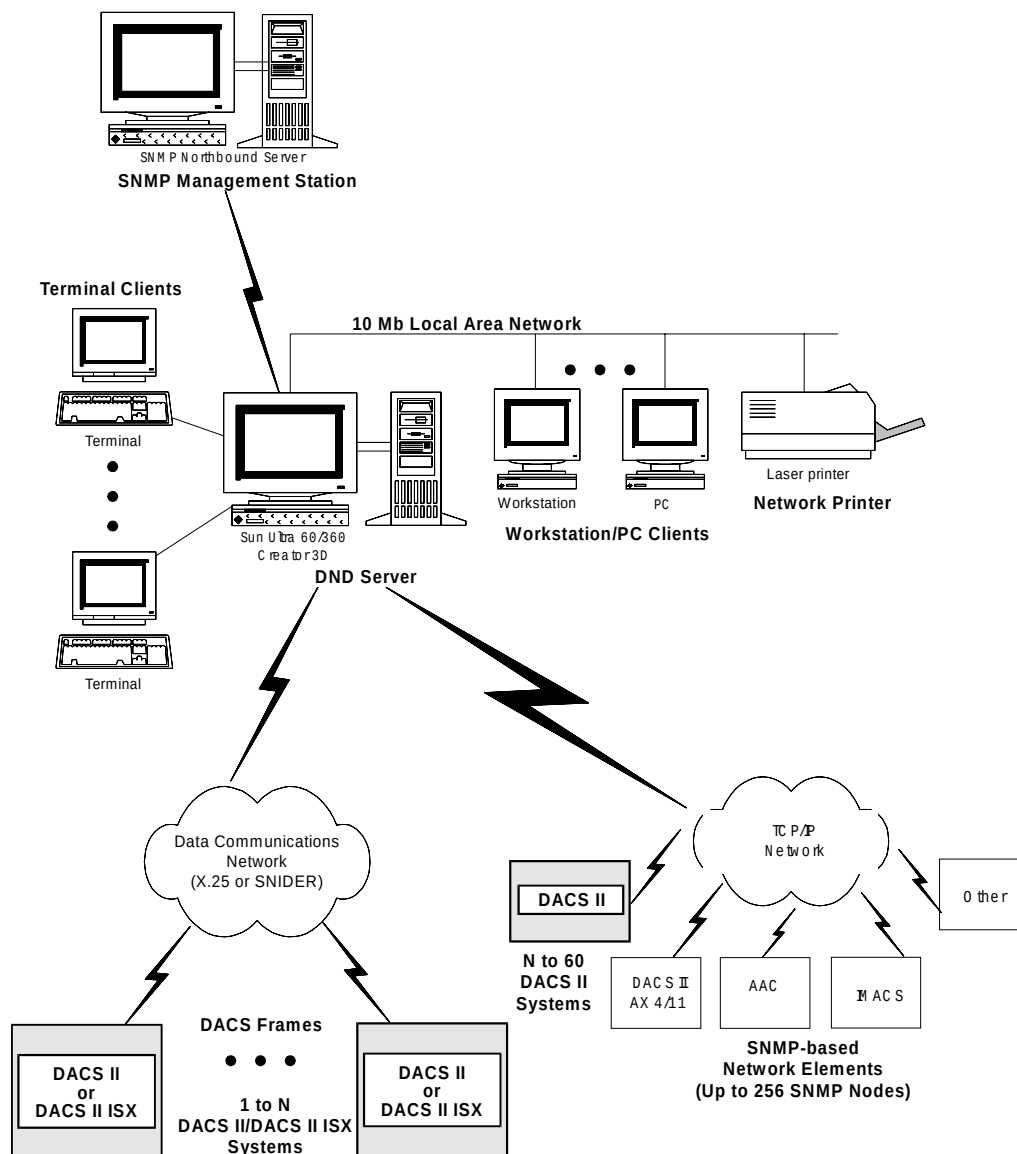


Figure 1-1. Sample DND Network Configuration

Network Elements - DACS System

DACS System

A Digital Access and Cross-connect System (DACS) is a device for cross-connecting, or switching, between transmission lines that have been time-division multiplexed. DACS is used for cross-connecting DS0 and N x 64 Kbps signals.

DND can manage up to 60 DACS network elements including:

- DACS II CEF (Capacity Expansion Frame)
- DACS II Non-CEF
- DACS II SBF/ESBF (Single-Bay Frame/Enclosed Single-Bay Frame)
- The DACS II ISX (Integrated Shelf Cross-Connect).

The DACS II and DACS II ISX communicate with DND over an X.25, SNIDER, or TCP/IP link. For additional information on the DACS system, refer to the *DACS II* or *DACS II ISX Operation and Maintenance Guides*.

The DACS II AX is an SNMP-based network element and is discussed later in this chapter.

Communications Link to DACS

The DND allows you to configure DACS frames and establish either synchronous or asynchronous communications links to the DACS.

**NOTE:**

Ensure that all network connections are in place before installing DND.

The three possible connections between the DND and the DACS it controls are:

- X.25 Packet Data Network (PDN)
 - SNIDER direct
 - TCP/IP (for DACS II CEF only).
-

Network Elements - DACS System (Continued)

PDN X.25 Diagram Figure 1-2 shows the PDN X.25 configuration.

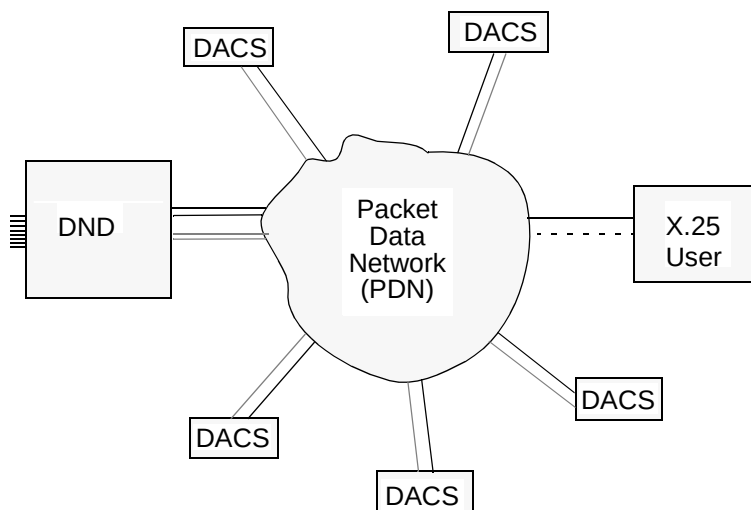


Figure 1-2. PDN X.25 Configuration

DND and the PDN X.25 Network

In the X.25 network, each DACS and the DND become nodes. The user terminals are peripheral to DND. Communication between DND and a DACS is defined by the International Telecommunication Union (ITU-T) standard X.25 Data Terminal Equipment/Data Circuit-terminating Equipment (DTE/DCE) interface.

X.25 Link Protection

The X.25 network supports link protection. You can provision the DACS to provide link protection and use one to four links on the DND to distribute traffic. You can designate any two of the four X.25 links on the DND as Primary or Secondary links to the DACS.

If the Primary link fails, the DND will automatically switch to the Backup link, but it will not automatically switch back when the Primary is fixed. The Backup link will need to fail for the DND to switch back to the fixed Primary or communications can be switched back to the Primary Link.

Network Elements - DACS System (Continued)

DND and the SNIDER Network

Figure 1-3 shows a direct configuration that uses the SNIDER protocol (asynchronous data link), instead of the X.25. The DACSs can be directly connected to DND or accessed remotely by modems.

SNIDER Diagram

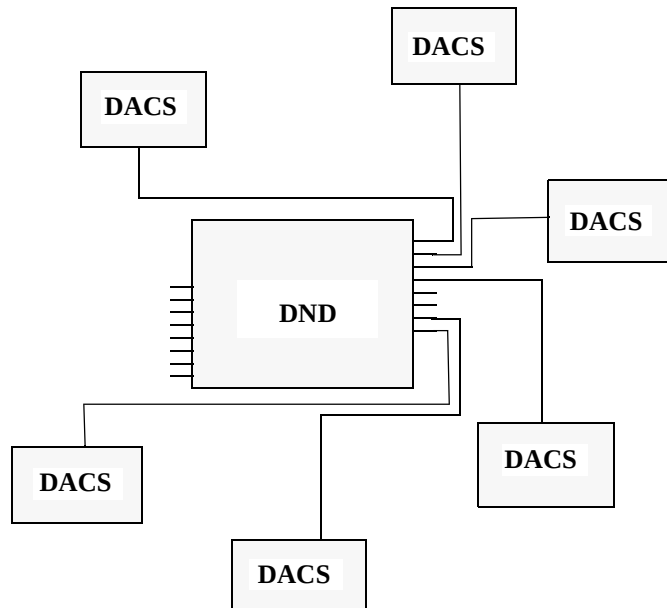


Figure 1-3. Point-to-point SNIDER Configuration

Network Elements - DACS System (Continued)

DND and the TCP/IP Network

Figure 1-4 shows the configuration that uses the TCP/IP protocol (telnet link). The DACS II systems can be accessed remotely using a LAN connection. Before the TCP/IP connection can be used, the IP address for the link must be set up.

TCP/IP Diagram

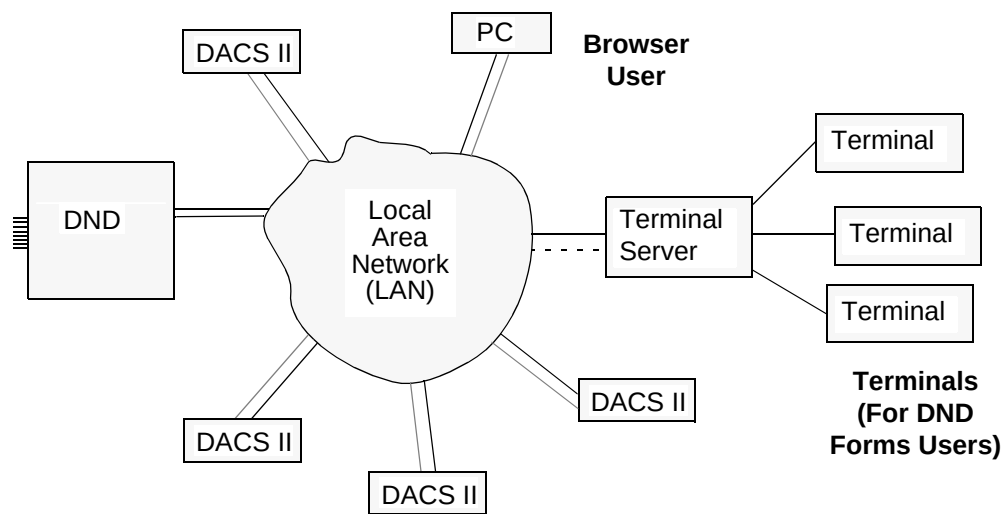


Figure 1-4. TCP/IP Configuration

Network Elements - SNMP Nodes

SNMP Nodes

SNMP is Simple Network Management Protocol. SNMP is a standard network protocol that is used primarily to manage TCP/IP networks.

DND processes alarms and provides telnet access to these SNMP devices: the DACS II AX 4/11, ACCULINK Access Controller (AAC), and Integrated Multiple Access Communications Server (IMACS). In addition, DND does alarm handling for other SNMP devices.

DND can manage up to 256 SNMP nodes.

Communications Link to SNMP Nodes

DND communicates with network elements on the TCP/IP network using SNMP. DND can send SNMP Get and Set requests to the SNMP device and DND can receive SNMP traps.

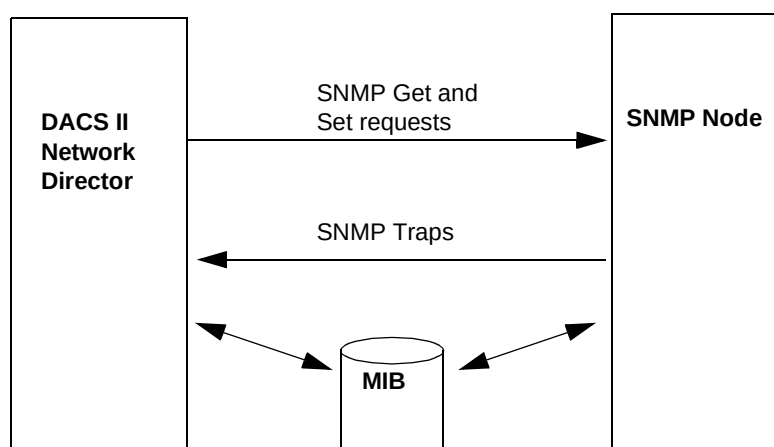


Figure 1-5. Communication between DND and SNMP Node

The management information accessed through SNMP is conceptually organized into a database called the *Management Information Base* or *MIB*. DND supports MIB II as defined in RFC1213, as well as some of the enterprise MIBs of the AAC, IMACS, and DACS II AX 4/11.

(Continued on next page)

Network Elements - SNMP Nodes (Continued)

Communications Link to SNMP Nodes, Continued

SNMP traps appear in the SNMP Alarm Log. When DND receives an alarm from an SNMP node, the new Alarm Summary arrow appears next to the element on the network map and the icon color indicates the highest alarm severity. Users can display the SNMP Alarm Report for detail on the alarm.

DACS II AX

The DACS II Access Cross-Connect (AX) is a compact 3/1/0 digital cross-connect system available in two configurations: the DACS II AX 11, which has 11 application card slots; and the DACS II AX 4, with 4 application card slots. The DACS II AX is provisionable with a range of high density cards, providing DS1, E1, DS3, test access, and analog voice ports.

Supported Versions of the DACS II AX

DND supports the following DACS II AX chassis types and release:

- Chassis Types:
 - 11 slot model
 - 4 slot model.
 - Software Versions
 - Up to Release 7.07.
-

AAC and IMACS

The ACCULINK Access Controller (AAC) and Integrated Multiple Access Communications Server (IMACS) are very similar units. They provide cross-connect and grooming capabilities on a wide variety of interfaces and formats. Consult the *IMACS and AAC Reference Guides* for details and sample applications.

The IMACS and AAC are standalone units. They are not associated with a DACS.

Network Elements - SNMP Nodes (Continued)

Supported Versions of the AAC and IMACS

DND supports the following AAC and IMACS chassis types and software versions:

- Chassis Types:
 - Two-sided chassis: the IMACS 800
 - Front-loading chassis: the IMACS 600
 - Front-loading chassis: the IMACS 900.
- Software Versions
 - Version 3.6
 - Version 3.8
 - Version 4.x
 - Version 5.x.

LAN Connectivity for AAC or IMACS

DND communicates with an AAC or IMACS over a LAN.

Some versions include a Management Channel Concentrator (MCC) card which allows the AAC or IMACS to be directly connected to the LAN.

Software versions 3.6 and 3.8 do not offer any direct LAN connectivity. To connect to the LAN from an AAC or IMACS running version 3.6 or 3.8, you must use a AAC/IMACS (with MCC Card) to provide LAN connectivity. The network management traffic from the LAN destined for the remote 3.6/3.8 unit is routed through the MCC unit over a T1 or E1 link.

(Continued on next page)

Network Elements - SNMP Nodes (Continued)

LAN Connectivity for AAC or IMACS, Continued

The following options are available for connecting the remote 3.6/3.8 unit to the MCC unit:

- Option 1: Facility Data Link (FDL)

This option can be used when the FDL is available on the ESF T1 link (Sa4 of E1 link) between the two units. The WAN card of both units are provisioned to send the network management traffic on the FDL of a WAN T1 link.

- Option 2: Timeslot 24 (31 for E1)

If the FDL of the T1 is not available, the remote unit can be provisioned to place its network management traffic on timeslot 24 of its WAN card T1 link.

The network management traffic is put in B7R (B4R for E1) format of timeslot 24. Correspondingly, the MCC unit is provisioned to place the network management traffic for the remote unit on timeslot 24 of the same T1 in B7R format.

With this option, timeslot 24 is unavailable for customer traffic.

- Option 3: FDL and B7R combination

If a DACS II is between the MCC unit and remote unit, the network management traffic between the DACS and the remote unit can be placed in the FDL of the T1 (Sa4 of E1). Network management traffic between the MCC unit and the DACS II can be placed in any DS0 using B7R format (B4R for E1 links). The DACS II can cross-connect the B7R (B4R for E1) network management traffic in the DS0 coming from the MCC unit to the FDL on the T1 link (Sa4 of E1 link) going to the remote unit. See Figure 1-6.

The above options can be applied for routing network management traffic through a network of IMACS/AAC units. Refer to the IMACS/AAC documentation and the *DND Installation Manual* for details.

Network Elements - SNMP Nodes (Continued)

Sample AAC/ IMACS Network

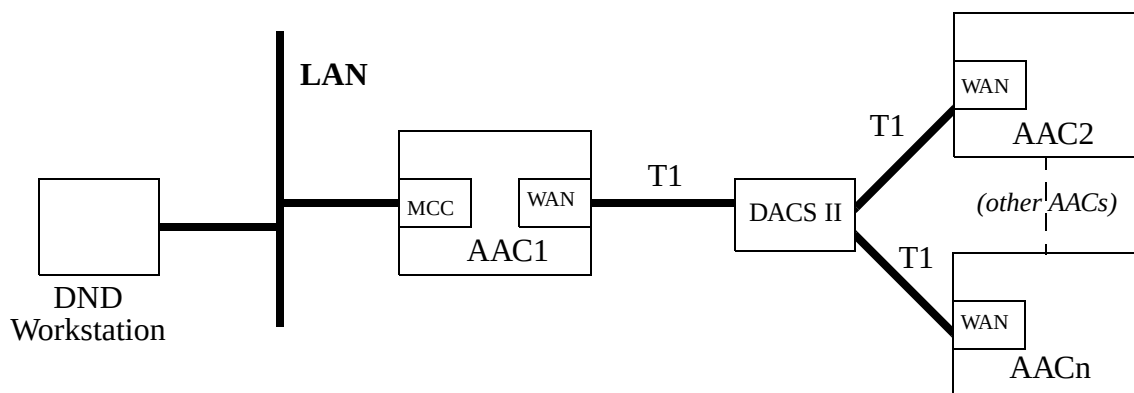


Figure 1-6. Sample AAC Network

The remote AACs (AAC2 through AACn) can be configured to send their IP management traffic either on the 4K T1 FDL or on timeslot 24 in B7R format. B7R is a 4K protocol. (For E1 links, management traffic can be sent either in Sa4 of the E1 or on timeslot 31 in B4R format, when Sa4 is not available. B4R is a 4K protocol.)

Timeslot 24 is unusable for any other customer traffic when it carries the IP management traffic.

The DACS II can cross-connect the IP management traffic from the remote AACs into B7R format in any DS0s on the T1 link to AAC1. The DS0s carrying IP management traffic cannot be used for customer traffic.

The MCC (on AAC1) can take up to 128 B7R format DS0s for concentration onto a single 10 base T ethernet port.

(Continued on next page)

Network Elements - SNMP Nodes (Continued)

Sample AAC/ IMACS Network, Continued

A similar configuration can be set up using E1 links. In this case, the remote AACs use either National Bit 4 (Sa4) or timeslot 31 (B4R format) when National Bit 4 is not available. The DACS II can cross-connect the Sa4 traffic into B4R format timeslots on the E1 link to the AAC1.

Other SNMP Nodes

You can identify other SNMP nodes through DND. Since these elements are basically unknown to DND, alarm processing is limited to the MIB-II parameters as defined in RFC1213. Enterprise vendor-specific MIBs are not supported.

Minimum Setup Requirements

Overview

The DND will only be supported with the specified hardware platform. All customers, therefore, currently on any I-2000 platform will be required to upgrade their hardware.

Server Requirements

The DND server has the following minimum hardware and software requirements:

- One of the following:
 - Sun Ultra 30 Model 300 to support up to 30 DACS frames
 - Sun Ultra 60/360 Creator 3D to support up to 60 DACS frames and 256 SNMP elements.

The choice of single CPU vs. dual CPU is highly customer-driven and dependent on network side and activity. The following table offers some guidelines, each assumes that the Graphical User Interface is enabled.

UltraSparc Model	No. of CPUs	No. of DACS interfaces (max)	No. of SNMP interfaces (max)
Sun Ultra 30 Model 300	single	30	0
Sun Ultra 60/360 Creator 3D	single	30	10
Sun Ultra 60/360 Creator 3D	single	0	60
Sun Ultra 60/360 Creator 3D	dual	60	256

- The Sun Ultra 60/360 Creator 3D must include:
 - Single: 256 Mb RAM Dual: 512 Mb RAM
 - 9 Gb UltraSCSI Internal Hard Disk Drive
 - Creator Graphics Video Card
 - 20-inch Color Workstation Monitor.
- Sun Solaris 2.6 (5/98) Operating System
- Netscape Communicator 4.5 and Java Toolkit (per license)
- FastTrack 3.01 Web Server
- Informix Standard Engine 5.10
- HP LaserJet 4000N Printer.

Minimum Setup Requirements (Continued)

Server Requirements (Continued)

- For SNMP element control:
 - SNMP Research BRASS agent.
 - For SNMP Northbound Management Interface:
 - SNMP Research MASTER agent.
 - For X.25 option:
 - HSIP driver Version 2, High Speed Interface card and drivers
 - SunLink 9.1, X.25 software.
 - 16-port central data serial expansion unit.
 - For SNIDER option:
 - 32-port central data serial expansion unit
 - 16-port central data serial expansion unit.
-

DND Features

Overview

DND features are packaged into basic configurations called releases. Future releases are anticipated to be available on a periodic basis for support of DND enhancements and new DACS features.

Operational Features

The operational features in DND are:

- Element management and graphical display
 - DND Workspace used to create, modify, and save network maps
 - Point and click to select menu choices and field values in the DND GUI
 - Login and password protection. Support of up to 16 simultaneous sessions and 128 different logins
 - Selection of communication with individual DACS through the X.25, SNIDER, or TCP/IP interfaces
 - Control of 1 through 60 DACS in DACS II Releases 6 and higher, and DACS II ISX Releases 1.1 and higher
 - DACS Command Line Access - send an MML message directly to the DACS and display the DACS output (expert DACS user mode)
 - Alarm monitoring for 1 to 256 SNMP nodes
 - Telnet access to DACS II, DACS II AX 4/11, AAC, and IMAC
 - DACS and SNMP alarm logging and notification
 - Network-based printing of reports
 - Querying of database from report forms
 - Interfaces available for various Northbound Network Managers
 - Context-sensitive and Content help.
-

DND Features (Continued)

Element Monitoring Features

DND provides:

- New Alarms Summary indication
- Intertie alarm indication
- Fault management and network-wide alarm surveillance display.

The DACS monitoring features in DND are:

- Alarm log and alarm reports
- Audit and synchronization of the local database, including:
 - Upload DND database with DACS provisioning data
 - NPC and channel audit
 - Scheduled NPC, channel or alarm synchronization between the DND and a DACS.
- User-defined names (IDs) for DACS circuits and NPCs
- Message log recovery
- Alarm intervention display
- 24-hour performance monitoring statistics (CEPT only)
- Automatic database update for echoed responses of commands made directly at the DACS.

The SNMP monitoring features in DND are:

- Monitoring (polling) for communication failures
 - Validation of IP address and software release information
 - Alarm log and SNMP Alarm Report
 - Monitoring for lost alarm traps (sequence number gap)
 - Termination Naming
 - Termination Circuit Mapping (cross-connect record)
 - End-to-end circuit trace.
-

DND Features (Continued)

Provisioning Features

The DACS provisioning features in the DND are:

- Facility (NPC) provisioning
- MMFG (DS3 termination) provisioning
- Cross-connections for a combined total of up to 30,720 DACS II NPCs. For example, 20 DACS II frames of 512 NAS NPCs per DACS would make available approximately 10,240 digroups and 345,760 channel ends, supporting 123,880 full-duplex circuits. DND supports:
 - Two-point circuits
 - Contiguous, Alternating, and Random N x 64 Kbps circuits
 - One-way cross-connections
 - Virtual broadcast (one-way) circuits
 - Symmetric voice circuits
 - Polling data circuits
 - TS0 to Non-TS0 CEPT circuits.
- Altrouting, preempting, and normalizing
- Circuit trace capability
- Test port provisioning
- Test access connection capability
- Audit/synchronization of local database.

The SNMP provisioning features in the DND are:

- Centralized telnet access to these SNMP-based network elements: DACS II AX 4/11, AAC, and IMACS
 - Termination naming and circuit mapping.
-

DND Features (Continued)

DACS Provisioning Feature: Database Audit and Synchronization

The DND maintains its own databases in order to track its operations and record the state of the circuits on the DACS frames. You can back up or restore databases to or from tape.

The information in the databases is accessible by the operator as printed or displayed reports. The report generation functions of the DND are very flexible and let you create report templates (using the Forms Interface) and individual reports as required.

There are occasions when the DND and DACS databases may not correspond; that is, they can have become inadvertently out of synchronization. As part of its repertoire of administrative functions, DND supports automatic or scheduled synchronization of:

- NPC provisioning data
- Circuit provisioning data
- Alarm data.

Network Security

The security of the network is an important concern, especially because a network can contain many elements and, therefore, has a greater risk of intrusion. Within DND, the system administrator assigns logins and passwords. In addition, access to the network is also limited.

A customer also has the ability to restrict intranet/internet access into their DACS. How this is performed depends on who is providing the LAN connection and is beyond the scope of this document. Many third party sources can be contracted to configure and setup LAN configurations and internet services.

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Background

Purpose

The purpose of this chapter is to familiarize users with DND start-up tasks, DACS configuration information, the Common Desktop Environment (CDE), and the DND GUI and DND Forms interfaces.

Objectives

This chapter provides background information to help you perform the following:

1. Select which configuration procedures need to be completed for your DND
 2. Log in and out of the CDE and DND
 3. Select the proper login ports
 4. Describe the printer setup.
-

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Logging in to the DND GUI System	GT 2.1G
■ Logging out of the DND GUI System	GT 2.2G
■ Configuring the DACS II AX for Communicating with DND	GT 2.3G
■ Configuring the AAC/IMACS for Communicating with DND	GT 2.4G

Configuration Tasks:

■ Configuring the DACS II for MML Input Language for User DAX	GT 2.1U
■ Configuring the DACS II for SNIDER Protocol	GT 2.2U
■ Configuring DACS II for X.25 Protocol	GT 2.3U
■ Configuring DACS II for TCP/IP Protocol	GT 2.4U
■ Configuring DACS II for 24-Hour Performance Monitoring	GT 2.5U
■ Turning on Message Logging	GT 2.6U
■ Turning on Alarm Intervention	GT 2.7U
■ Changing Environment Variables	GT 2.8U
■ Setting/Changing Default Values for NPC and Circuit Provisioning Forms	GT 2.9U
■ Setting the Time Zone	GT 2.10U
-

(Continued on next page)

Background (Continued)

Related tasks (Continued)

DND Forms Logging In/Out Tasks:

■ DND Forms: Logging In From a Terminal	GT 2.11U
■ DND Forms: Logging In From a Workstation	GT 2.12U
■ DND Forms: Logging Out of the DND System	GT 2.13U
-

Related information

For related information refer to the following:

- *DACS II and DACS II ISX Operation and Maintenance Manuals*
 - *DACS II Network Director Installation Manual*
 - *DACS II AX 4/11 User's Guide*
 - *IMACS and AAC Reference Guides.*
-

Configuration Information

Overview

There are three components which must be configured before you can use DND to provision a DACS or SNMP node:

- The DACS
 - The DND
 - The SNMP node.
-

Configuring the DACS

Configure the DACS port(s) that will be connected to the DND. Configuration is performed directly at the DACS using the DACS commands.

Configure the DACS for the following:

- MML language
- SNIDER, X.25, or TCP/IP protocol
- 24-hour performance monitoring schedule (optional)
- Turn on the Message Logging feature (optional)
- Turn on Alarm Intervention.

For additional information on configuring the DACS system, refer to GT 2.1U through GT 2.7U in Volume II.

Configuring the DND

Before using DND, check the following on the DND host machine:

- Accuracy of time zone setting
- Settings for environment variables
- Default values for NPC and Circuit Provisioning forms.

For additional information, refer to this chapter and procedures GT 2.8U through GT 2.10U in Volume II.

Configuration Information (Continued)

Configuring the SNMP Node

In order for DND to communicate with the SNMP node, set-up is required on both ends: DND and at the SNMP node.

There are three critical pieces of information:

- **IP Address for SNMP node:** You must supply DND with the actual IP address which identifies the SNMP node to DND.
- **IP Address for DND:** You must supply the actual IP address of DND to the SNMP node so that SNMP traps can be sent to DND.
- **Community:** The community string is the password used to access the SNMP node. DND must use the community string that is set in the SNMP node.

For the setup procedure for the AAC/IMACS, refer to GT 2.4G. For the setup procedure for the DACS II AX, refer to GT 2.3G.

After completing the setup procedures, use the NE Provisioning form to identify the NE in DND. Refer to GT 5.1G.

The Common Desktop Environment (CDE)

Overview

The CDE used by the DND is part of Sun's Solaris 2.6. The CDE is the window management system for DND on Sun workstations. It manages the login and displays for the user.

Logging on the CDE

You can log in to the DND GUI from the DND host workstation, a client workstation (UltraSparc 5), or a PC running Netscape.

When operators or administrators log in at a client workstation (connected via a LAN), there are two levels of user logins required for operation of the DND GUI:

- CDE Login
- DND Login (refer to section "Logging in to the DND GUI" on Page 2-12).

To set up a CDE Login, an administrator will need to perform the following:

1. Login to the CDE and DND system using the default login (dacsadm), as discussed in the *DND Installation Manual*.
2. Refer to *Chapter 15, User Administration*, to create additional user logins.

When the DND server workstation or the client workstation is turned on, the screen immediately prompts the user for a login and then a password. Once these are entered, the user enters the CDE.

See GT 2.1G for the procedure for logging in to the DND GUI.

CDE Toolbar

The CDE toolbar appears by default at the bottom of the monitor screen. The CDE toolbar is shown in Figure 2-1.



Figure 2-1. CDE Toolbar

The Common Desktop Environment (CDE) (Continued)

Items on the CDE Toolbar

The CDE Toolbar includes:

- Clock - This time is local to the workstation.
- Date - Double-click on the date to bring up the CDE calendar manager, which may be useful, but is not needed for the DND.
- Virtual Workspaces - Four default virtual workspaces are defined by the CDE and are named One, Two, Three and Four, respectively.

To enter a virtual work environment, click on the associated button.

To change the name of a virtual workspace, double-click on the name in the box and edit the name on the button.

- Visual Preferences - Click on this icon to change the Window colors, backdrop wallpaper, or window select methods.
- Help - Click on the ? icon for help information on the CDE.

Console Window

When using the DND, it is recommended that a console window remain open at all times. System status messages are often displayed in the console window. To open the Console Window, right-click anywhere on the CDE wallpaper, select *Programs* from the Workspace Menu, then select *Console*.

The Netscape Browser

Overview

The Netscape browser is used to access the DND GUI. A link to the URL address of your DND server (link button in the Netscape Personal Toolbar) has already been established at installation time.

When logged into the DND, it is recommended that the DND Main window be displayed in all virtual workspaces. This is done by clicking the Window Menu icon in the upper left hand corner of the DND Main Window (which is displaying the network map), and selecting the choice *Occupy All Workspaces*.

Loading Netscape

To access Netscape from a workstation, right-click anywhere on the CDE workspace to reveal a pull-down menu. Select the **Programs** option, which will reveal another pull-down menu. Select the **DND GUI** option. The Netscape browser will automatically start up on the workstation. Click [dnd user interface](#) to start the DND GUI on the Netscape browser.

**NOTE:**

If an error message appears on the bottom of the DND Main Window and the error is not related to improper login, then the DND has not been installed correctly on your workstation. Consult your next level of support.

Netscape Toolbars

The default Netscape environment will display only the Personal Toolbar. On the Personal Toolbar, two buttons are provided - one to connect to the Netscape Server Selector (for turning the server on/off), and the other to connect to the DND server and start the DND GUI.

The other toolbars, the Location Toolbar and Navigation Toolbar, are minimized by default. These are not required for DND operation and should not be used ordinarily. These would be used for visiting other web sites.

Moving to another web site will log the user off of the DND after a timeout interval. Other operations, normal to "browsing" such as "Back", "Forward" are not to be used while connected to the DND.

The **File** pull-down menu on the top of the Netscape browser may be used for printing and/or saving reports files. Preferences can also be set for font size preferences and other browser preferences. These are not necessary for DND operation.

The Netscape Browser (Continued)

Loading the DND GUI

To access the DND GUI from a workstation, click [dnd user interface](#) located on Netscape's Personal Toolbar. The URL address to the DND server is linked to this button, and the DND Main Window with Login screen will appear.

To access the DND GUI from a PC, you need to set up a bookmark for the DND URL using the Netscape Bookmarks tool. Refer to GT 2.1G for details.

Logging in to the DND GUI

The DND GUI can not be utilized until the user has entered a DND login name and password. Default logins and passwords are set for *dacsadm* (administrator) and *ems* (generic operator) at installation. Other logins/passwords are set up by the system administrator.

**NOTE:**

Users logging in to the console as *dacsadm* have unrestricted use of the UNIX system. Other users will have restricted use of the UNIX system.

(Continued on next page)

The Netscape Browser (Continued)

Logging in to the DND GUI, Continued

Before logging in, the DND Workspace (refer to *Chapter 3, DND Screens and Form Navigation*) will not display the DACS network map or alarm indications. Figure 2-2 displays what the screen looks like before logging in the DND GUI.

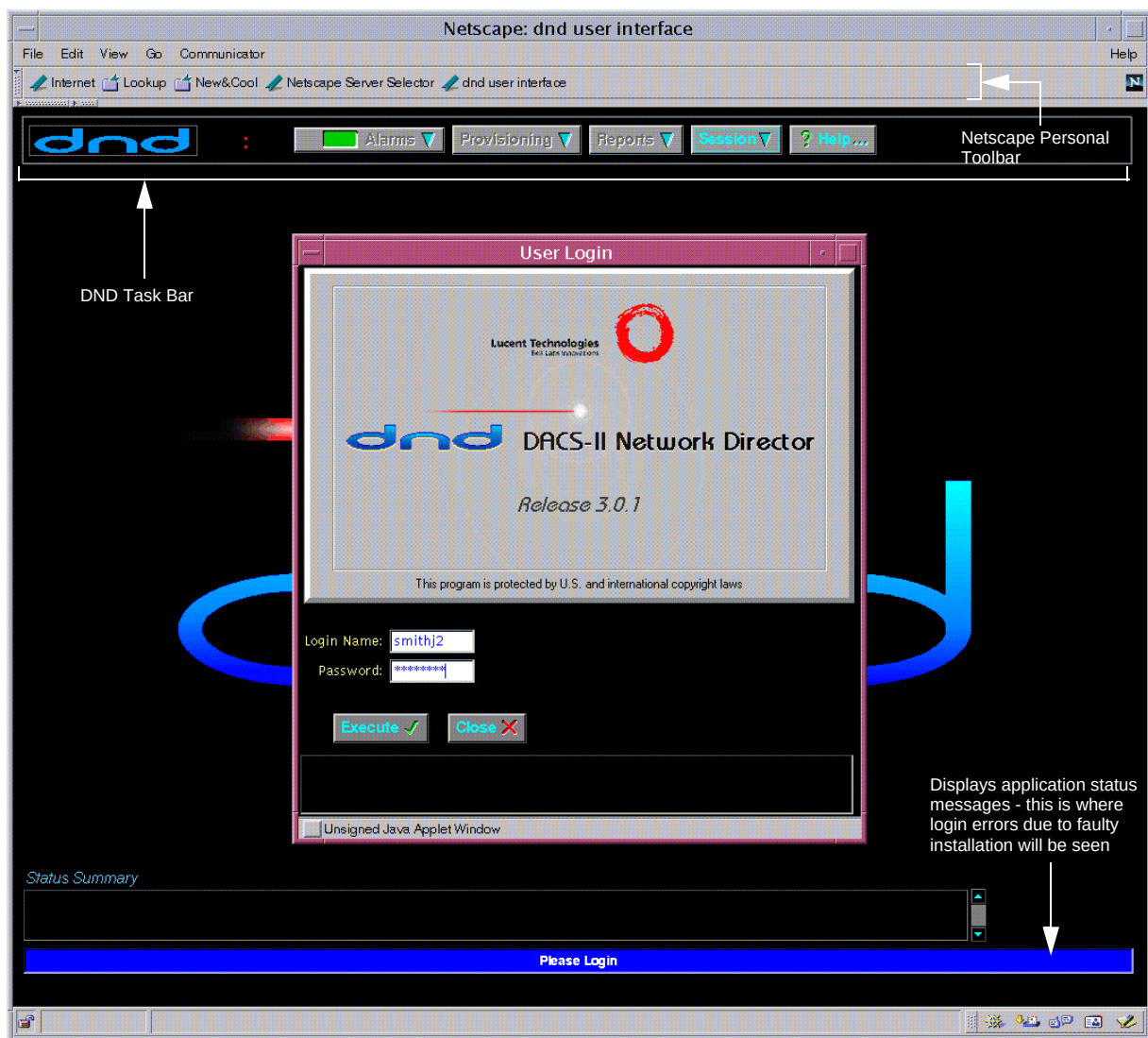


Figure 2-2. DND GUI: Login/Logout Window

The Netscape Browser

Logging out of the DND GUI

When you log out of the DND GUI, you will receive the same screen as is pictured in Figure 2-2. The DND pictured is waiting for a user to log in. Click **File** from the top of Netscape window to reveal a pull-down menu. Selecting the **Exit** option will exit you from the Netscape browser.

If there are unsaved changes in the DND Workspace, such as changes to grouping information or map icons, you will receive a warning when you try to log out. To save changes, click **Workspace** in the DND Task Bar, then select **Save to Server**. Only a user with administration privileges can **Save to Server**.

In addition to logging out from the DND GUI, the DND GUI will automatically log off a user if the following conditions exist:

- The browser loses communication with the DND server for a couple of minutes
 - A different URL address is entered in the **Netsite:** field in Netscape's Location Toolbar
-

Logging in to the DND UI

Methods

You can log in to the DND User Interface (UI) using any of these methods:

- From a terminal/PAD through an X.25 port
- From a directly connected terminal
- From a terminal by modem
- Using a TCP/IP login
- Using telnet from a LAN-based PC
- Using a PC terminal emulator.

Log in procedures are described in GT 2.11U and GT 2.12U.

Login Ports

Ports used for Terminals

The default DND hardware configuration comes equipped with a 16-port Serial Expansion Unit (SEU). All of these ports can be configured for terminal login.

The ports are numbered 1 through 16 on the unit. The ports are made available for login via the LOGIN PORTS form on the DND Forms User Interface. Ports that are restored via this form can be connected to a “dumb” terminal and the DND Forms User Interface can be accessed from this terminal.

The 16-port SEU can be used for DACS SNIDER communications, but at a reduction in the number of ports available for logging in to DND.

Ports used for SNIDER communications

An optional 32-port SEU is available. It is used for SNIDER communications to a DACS and its ports are not available for terminals. A DACS can be configured for SNIDER communications via the FRAME ADMINISTRATION form using the DND Forms User Interface, and from the DACS ADMINISTRATION form using the DND GUI.

Port Numbers

If you have both the 16-port SEU and the optional 32-port SEU, DND will number the ports sequentially from 1 to 48 as shown in Table 2-1. The ports on the 32-port SEU are only available for SNIDER communications, not for terminal login.

Table 2-1. DND Line Port Numbers

Unit	SEU Port Number	DND Line Port Number
First unit: 16-port SEU (default)	1 to 16	1 to 16
Second unit: 32-port SEU (optional)	1 to 32	17 to 48

Environment Variables

Overview

To insure proper operation of DND, you may need to check for the proper values of some of the environmental variables used by DND. Also, you can vary the values to achieve different operational effects.

Specifications for Environment Variables

The following tables provide detail on the definitions and valid entries for environment variables.

Table 2-2 describes the environment variables, their purposes and their values. Refer to GT 2.8U for the procedure for setting environment variables.



CAUTION:

*If a variable appears in the variable file, but does not appear in the table, it is recommended that you **do not** alter it.*

Table 2-2. Environment Variables

Variable	Description
AGE_RTRV_ALM_SUMMARY	The amount of time (in seconds) to age a request to retrieve the alarm summary info (priority of action) at the DACS. Subsequent requests are dropped during the time one is being aged. Setting this variable to a high value will prevent clogging the DACS with requests for the alarm summary during times of high alarm activity. The default is 15 seconds. The allowed range is 15 seconds to 86400 seconds (once a day). For example, setting this variable to 900 will result in retrieving the alarm summary information from the DACS once every 15 minutes during times of high alarm activity. This retrieve is triggered when an alarm is idled and when an NPC is restored.

Table 2-2. Environment Variables (Continued)

Variable	Description
ALARM_DEV	The device name of the alarm monitor port. The default is /dev/term/b for Solaris. By default, the alarm device is disabled.  NOTE: The alarms port environment variable, ALARM_DEV and the G2 interface environment variable, G2_INTERFACE, should not be set to the same serial device.
ALARM_DEV_SPEED	The baud rate of the alarm monitor port. The default is 19200. Other possible values are 1200, 2400, 4800 and 9600.
ALARM_RECALC_FREQ	The frequency that the DND should recalculate alarms on 1 DACS or SNMP node. The DND maintains a network wide list of all active alarms on all managed nodes. When an alarm becomes active, the alarm is added to the list. When an active alarm is cleared, the alarm is removed from the list. Through this environment variable, the DND can periodically recalculate (refresh) the list of active alarms in the network to be consistent with the alarm information in the frame databases. One network node is recalculated per the specified interval. The range is 2 to 30 minutes. The default is 5 minutes.
BROWSE_TIMEOUT	The time, in seconds, for which the DND will wait for a response from a circuit BROWSE Action. At the end of that time, the DND will return control of the terminal to the user. The default is 1800 seconds (30 minutes). The range is 60 through 3600 seconds (1 through 60 minutes).

Table 2-2. Environment Variables (Continued)

Variable	Description
BROWSER_POLL_TIMEOUT	The timeout value for browser network map polling. If polling does not occur for BROWSER_POLL_TIMEOUT seconds then the DND will automatically log off the user on that browser. The default is 75 seconds. Timeout may occur if the user uses the browser to connect to another web site, or if the network connection fails. The timeout will release this "slot" for use by another browser.
BTCHLOOP	Whether or not the enhanced test access feature is enabled. If it is enabled, the DND will execute channel loop and release actions. Otherwise, the DND will ignore them. A value of 1 enables. Any other value disables. The default is 0 .
BTEMI	Replaced by G2_INTERFACE.
BTHOTSTANDBY	Whether or not the hot standby feature is enabled. If it is disabled, the DND will process echoed responses normally. A value of 1 enables. Any other value disables. The default is 0 .
BTLP	Whether or not messages will be sent to the Event Management System Alarm Logging Printer. The default of no value presumes that this interface is not present. Otherwise, enter the name of a printer for BTLP. (Refer to section "DECServer Printer" on Page 2-36.) The recommended name is btlp .
BTLP_ALARM_STATE	Ignored if BTLP is not set. Which DACS alarm messages, by alarm state, are sent to the Event Management System Alarm Logging Printer Interface. The default is all alarm messages , regardless of alarm state.

Table 2-2. Environment Variables (Continued)

Variable	Description
BTLP_DATE_FORMAT	Ignored if neither G2_INTERFACE or BTLP are set. The format of the date string in messages to the Event Management System Alarm Logging Printer Interface. The default is the UNIX long time value. For example, to have the date appear as: 2_digit_month/2_digit_day/2_digit_year hour:min:sec use the following line: %m/ %d/ %y %H:%M:%S You can find descriptions of the specifiers in the Tables 2-3 through 2-5.
BTLP_EXCLUDE	Ignored if BTLP is not set. Which frame alarm messages are sent to the Event Management System Alarm Logging Printer Interface. The default is only to send non-NPC alarms: 65011 65021 65031 65035 65036 65041 65045 65046 65061 33351
BTLP_FMT_STRING	Ignored if BTLP is not set. The format of output messages to the Event Management System Alarm Logging Printer Interface. The default is: ae\n\ttid\t%d\n\teqtype\t%1\n\teqid\t%E\n\tcondty pe\t%C\n\ \talarmtype\t%F\n\talarm_state\t%V\n\tdacsmsgno o\t%m\n\tsummary\t%n\n\ \ttime\t%T\n\tnpc_id\t%N\n\tckts\t%K\n\n Descriptions of the specifiers are listed in Table 2-3.
BTLP_MAXG2BUNDLE	The maximum number of alarms in a single btlp G2 message. The default is 1 alarm. The allowed range is 1 to 1000.

Table 2-2. Environment Variables (Continued)

Variable	Description
COMMAND_TIMEOUT	The time for which the DND will wait for a response from the DACS to a command issued by the user during a multiplexed passthrough session. At the end of that time, DND will return control of the terminal to the user. The default is 60 seconds. The range is 15 through 180 seconds.
CSCAN_CUD	The interface to ITM-NM/XMC can be restricted to accept calls only when the Call User Data is provided in the XMC to DND X.25 call. When this variable is enabled, the XMC is required to include the CSCAN_CUD string in the Call User Data field of the X.25 call.
CSCANLOGPATH	The interface to ITM-NM/XMC maintains a recovery log for event messages. If the link between ITM and DND goes down, then the log is used to send all unsent messages. This variable determines the location/name of the (binary) data file which holds the log.
D2_MIN_TG	For DACS II. This variable specifies the minimum number to be used as a test group ID when using Test Access.
D2_MAX_TG	For DACS II. This variable specifies the maximum number to be used as a test group ID when using Test Access.
D2_MIN_NPCTG	For DACS II. This variable specifies the minimum number to be used as an NPC test group ID when using Test Access.
D2_MAX_NPCTG	For DACS II. This variable specifies the maximum number to be used as an NPC test group ID when using Test Access.
DACS_HIST_SIZE	The maximum number of characters in a single history log. The default is 60000 . The range is 60000-600000 .
DACS_TIMEOUT	The timeout for frame commands. The default is 180 seconds (three minutes). The range is 180-600 (ten minutes).

Table 2-2. Environment Variables (Continued)

Variable	Description
DATE_FORMAT	The format of the date in the alarm report, the history log report header, the non-NPC alarm events sent to the DACScan, and all other DND reports. The default of no value obtains a format of ddmmyy. A value of AMERICAN changes it to mm/dd/yy and a value of EUROPEAN changes it to dd/mm/yy.
FDX_LOOP_CKT	Controls the two-way loopback circuit for DND. The default value is 0 , which denies provisioning of two-way loop circuits. A value of 1 allows to you to provision two-way loop back circuits, echo response processing, and audit/synchronization.
G2_ALARM_STATE	Defines which DACS alarm messages, by alarm state, are sent over the DND G2 interface. The default is to send all alarm messages regardless of alarm state. The values can be OOS, CRIT, MAJ, MIN, INFO, IDLD . For example: G2_ALARM_STATE="CRIT MAJ IDLD" sends only critical, major, and idled message alarms.
G2_DATE_FORMAT	Ignored if BTEMI is not set. The format of the date string in messages sent over the DND G2 interface. The default is the UNIX long time value . For example, to have the date appear as: hour:min:sec 2_digit_month/2_digit_day/ 2_digit_year use the following line: %H:%M:%S %m/ %d /%y You can find descriptions of the specifiers in Tables 2-3 through 2-5.

Table 2-2. Environment Variables (Continued)

Variable	Description
G2_EXCLUDE	Defines which DACS alarm messages (by iitl) are sent over the DND G2 interface. The default is to send all alarms. For example: G2_EXCLUDE="01201 01301 01331" will exclude messages 01201, 01301, and 01331
G2_FMT_STRING	Defines the format of G2 output messages to the DND G2 interface. The default format is: <pre>ae\n\ttid\t%d\n\teqtype\t%1\n\teqid\t%E\n\tcondty pe\t%C\n\ \talarmtype\t%F\n\talarm_state\t%V\n\tdacsmsgn o\t%m\n\tsummary\t%n\n\ \ttime\t%T\n\tnpc_id\t%N\n\tckts\t%K\n\n</pre> You can find descriptions of the specifiers in Tables 2-3 through 2-5.
G2_INTERFACE	Defines whether or not alarm messages are forwarded over the DND G2 interface. The default of no value presumes this interface is not present. If a value is entered, it should be the name of the serial device that the Northbound Manager is hardwired to. For example: G2_INTERFACE="" disables the DND G2 interface and: G2_INTERFACE="/dev/term/a" will enable the DND G2 interface and cause alarm messages to be sent over the /dev/term/a serial sevice in a G2 format.  NOTE: The alarms port environment variable, ALARM_DEV, and the G2 interface environment variable, G2_INTERFACE, should not be set to the same serial device.
G2_MAX_PRINT_QUEUED	The maximum number of G2 jobs that can be queued in printer. The default value of no value indicates there is no limit. The allowed range is 500 to 2000 jobs.

Table 2-2. Environment Variables (Continued)

Variable	Description
G2_MAXG2BUNDLE	The maximum number of alarms in a single G2 message. The default is 1 . The allowed range is 1 to 1000 .
G2_SPEED	Defines the baud rate of the DND G2 interface. The default is 9600 . Other possible values are 1200 , 2400 , 4800 , and 19200 . It is recommended that this variable be set to the highest possible speed.
IDLE_THRESHOLD	This variable is used to define the idle threshold which will logoff an idle user interface session. This variable is set per DND. It is recommended that this variable be set when starting a DND, and then it will apply to all user interface sessions brought up after that.
INFO_ALARMS	Authorization to alter the DND algorithm for processing DACS II 0.65011 CGA/PBA messages. Two alterations are available, specified by PA and MINOR. The default is no value. In that case, the algorithm is not altered. For both PA and MINOR record the alarm in the DND alarm log and NPC databases, and transmit the DACS II output message from the alarm monitoring port exactly as it was received from the DACS. The difference is in the severity recorded for the alarm and therefore appearing in reports. For a value of PA, the severity will be made the same as the priority of action (pa) field, except that, if the "pa" field has a value of A (autonomous), the severity is made minor. For a value of MINOR, the severity will depend on the value of the alarm state field. For an MI or a DMA, the severity will be made minor; for a PMA, the severity will be made the same as the pa field.
ISX_MIN_TG	For DACS II ISX. This variable specifies the minimum number to be used as a test group ID when using Test Access.

Table 2-2. Environment Variables (Continued)

Variable	Description
ISX_MAX_TG	For DACS II ISX. This variable specifies the maximum number to be used as a test group ID when using Test Access.
ISX_MIN_NPCTG	For DACS II. This variable specifies the minimum number to be used as an NPC test group ID when using Test Access.
ISX_MAX_NPCTG	For DACS II. This variable specifies the maximum number to be used as an NPC test group ID when using Test Access.
LINES_PER_PAGE	The number of lines per page in DND reports sent to the printer. The default for HP Laser Jet 4000 8.5 by 11.0 inch paper is 60 lines per page. Consult the printer user's manual for default lines per page for other paper types (e.g. A4 paper). This variable is not applicable to printing via the browser interface.
LOG_TIMEOUT	The message timeout interval for messages being received during a DACS message long recovery (i.e., it is used to time messages between the START and END indicators). The default is 180 seconds (3 minutes). If the interval between any two messages exceeds this time, the recovery log action will fail.
MAX_ALM_LOGS	The maximum number of alarms in the alarm log. The default is 10000 . The allowed range is 100-10000 . Once this number of records is inserted in a frame's alarm log, the next alarm will cause the number of alarms in the log to be reduced to the value contained in the SAVE_ALMS variable.
MAX_CBIT_ALMS	The maximum size of the C-bit alarm log. The default is 1500 alarms.
MAX_ERP_LOGS	The maximum number of echoed response messages in the ERP log. The default is 1000 . The allowed range is 100-10000 . Once this number of records is inserted in the ERP log, the next echoed response will cause the number of messages in the log to be reduced to the value contained in the SAVE_ERPS variable.

Table 2-2. Environment Variables (Continued)

Variable	Description
MAX_PM_LOGS	The maximum number of messages in the 24-Hour PM log. The default is 1000 . The allowed range is 100-1000 . Once this number of records is inserted in a DACS' PM log, the next record entry will cause the number of records in the log to be reduced to the value contained in the SAVE_PM_LOGS variable.
MAXALMAGED	The maximum number of alarms to be stored for aging for a single DACS frame. This is to prevent potential exhaustion of dynamically allocated memory (the place where aging alarms are stored). The larger the number of frames controlled by a DND, the smaller amount of memory per frames. The default maximum number is 300.
MAXCMDLOG	The maximum size of the command log. The default is 200 records.
MAXEXPIREAGED	The maximum number of alarms to be stored for aging for a single second in time. This is to prevent potential CPU realtime problems where the total number of alarms to be processed in one second, or sequential seconds may cause the alarms to starve other processes for real time. The default value is 5. If more than this number of alarms are to be stored in one second, then the aging time for that alarm is increased by onesecond, to effectively "spread" out the alarm processing over time.
MINCMDLOG	The remaining number of command log entries after the maximum has been reached. The default is 100 records.

Table 2-2. Environment Variables (Continued)

Variable	Description
OAM_LONG_AUDIT_CYCLE	The time between system audits when the previous audit has detected/run a recovery. Typically, this interval is longer than OAM_SHORT_AUDIT_CYCLE to put increasing delay between the more time consuming actions. The default setting disables the feature. The recommended setting is 300 seconds (5 minutes). Set this variable and OAM_SHORT_AUDIT_CYCLE to NULL to turn off the OAM auditing entirely.
OAM_SHORT_AUDIT_CYCLE	The time between system audits which have not detected errors (i.e., the period between normal checks). The default setting disables the feature. The recommended setting is 15 seconds. Set this variable and OAM_LONG_AUDIT_CYCLE to NULL to turn off the OAM auditing entirely.
PM24HR_NONFT	Enables the 24-Hour Performance Monitoring feature. YES makes the Performance Monitoring feature available. The Performance Monitoring feature is available for CEPT type NPCs only. No Performance Monitoring data is stored or processed for non-CEPT NPCs.
RP_DACS_TIMEOUT	The number of seconds the DND will wait before timing out commands associated with a restoration plan. The default is 1800 (30 minutes). The range is 180 (3 minutes) - 86400 (24 hours).
SAVE_ALMS	The number of alarms to leave in the alarm log when the maximum has been reached. The default is 600. Allowed values are 1 through 1 less than the value of MAX_ALM_LOGS.
SAVE_CBIT_ALMS	The remaining number of alarms in the C-bit alarm log after the maximum size has been reached and some alarms have been removed from the C-bit alarm log. The default number is 1498 alarms.

Table 2-2. Environment Variables (Continued)

Variable	Description
SAVE_ERPS	The number of echoed response messages to leave in the ERP Log when the maximum number of messages has been reached. The default is 60 . The allowed range is 1 to 1 less than the value of MAX_ERP_LOGS .
SAVE_PM_LOGS	The number of entries to leave in the 24-Hour PM log when the maximum has been reached. The default is 60. Allowed values are 1 through 1 less than the value of MAX_PM_LOGS .
SEND_ALARM_EVENTS	Authorization to send alarm event messages to a network controller connected to the DND in accordance with the appropriate interface agreement. The default is no value . A YES value sends the messages.
SEND_NON_NPC_ALARMS	Authorization to send non-NPC alarm messages to a network controller connected to the DND in accordance with the appropriate interface agreement. The default is no value. A YES value sends the messages.
SESSION_TIMEOUT	The time in minutes over which the DND will wait for some activity during a multiplexed passthrough session. After that time, the DND will end the idle session autonomously and will return the user to the previous menu. The default is 480 minutes (8 hours). The range is 0 through 10080 (1 week).

Table 2-2. Environment Variables (Continued)

Variable	Description
SH_TMOUT	The DND shell inactivity timer. This variable sets the shell TMOUT variable when a user logs in to the system as an DND user. When TMOUT seconds have elapsed with no terminal activity, a 60-second warning displays. If there is no further activity, the shell times out and the user is logged off. The SH_TMOUT variable is set by the user login .profile. It is disabled when an DND user interface session is started and is imposed again when the user quits the DND interface. Examples: SH_TMOUT=0 no timer (unlimited login time) SH_TMOUT=1800 30-minute timeout (default) If the value for SH_TMOUT is changed, users who are currently logged in, must log out and log in again for the new timeout value to take effect. The IDLE_THRESHOLD variable performs a similar function for the DND user interface.
SITENAME_SIZE	Controls the number of characters allowed in the Site Name field on the FRAME ADMINISTRATION form. If not set, the field is a maximum of 17 characters. The value range of this variable is 18-24.
SLNKX25DBIT	Toggle for the D-Bit option for the SunLink X.25 communication package. If this is set, delivery confirmation is requested for X.25 data packets. (This is end to end.) The default value for this variable is NULL. A value of 1 enables the D-Bit option.

Table 2-2. Environment Variables (Continued)

Variable	Description
SNMP_ACT_ALM_POLL_INTERVAL	Sets how frequently (in seconds) all of the in-service SNMP network elements (NEs) should be polled in order to update the active alarm table. The default is 900 (every 15 minutes). The allowed range is 60 (once a minute) to 86400 (once a day). Alarm Polling is used as a mechanism for recovering from missed traps. Specifically a trap clear can be missed and DND will have no indication this has occurred. This value should be tuned proportionately to the number of SNMP NEs being managed by the DND.
SNMP_MAX_ALM_LOGS	The maximum number of alarm records in the SNMP alarm log. The default is 5000. The allowed range is 100-5000. Once this number of records is inserted in an SNMP alarm log, the next alarm will cause the number of alarms in the log to be reduced to the value contained in the SNMP_SAVE_ALMS variable.
SNMP_POLL_INTERVAL	Sets how frequently (in seconds) all of the SNMP NEs should be polled by the SNMP TRAP process. Polling is used to check if the DND can communicate with the SNMP NE. The default is 30. The allowed range is 30 to 240 (every 4 minutes). Note: If the NE dies or the TCP/IP link to an NE goes down, polling is the only way to know something has occurred. Polling is also used to determine if a trap (alarm) from the NE was lost. This value should be tuned proportionately to the number of SNMP NEs being managed by the DND.
SNMP_SAVE_ALMS	The number of SNMP alarm records that remain in the SNMP alarm log when the maximum has been reached. The default is 500. Allowed values are 1 through 1 less than the value of SNMP_MAX_ALM_LOGS.

Table 2-2. Environment Variables (Continued)

Variable	Description
SYNC_DEACTIVATE_CKTS	Controls whether or not channel synchronization, when the DACS is master, or circuit echoed response processing, will delete all non-matching DND circuits (any other value than 1) or only non-matching circuits created by channel synchronization or circuit echoed response processing (a value of 1). Non-matching circuits not deleted are deactivated.
UNCB_INTERFACE	This variable is used in conjunction with the feature disk to support the UNCB (France Telecom NM) Interface.
X25BRXDBIT	For delivery confirmation for X.25 data packets. The default value is NULL . Otherwise, a value of 1 will enable delivery confirmation.

Environment Variables (Continued)

G2_FMT_STRING and BTLP_FMT_ STRING Characters

Table 2-3 shows the G2_FMT_STRING and BTLP_FMT_STRING characters.

Table 2-3. G2_FMT_STRING and BTLP_FMT_STRING Characters

Character	Definition
\n	Newline.
\t	Tab.
\r	Carriage return.
%[d12EcCfFtsvVTnmNK]	Conversion specification (see the succeeding table)
%%	Same as %
Any other character	Copy as is

Environment Variables (Continued)

G2_FMT_STRING and BTLP_FMT_ STRING Characters, Continued

Table 2-4 shows the conversion specifications for the G2_FMT_STRING and BTLP_FMT_STRING.

Table 2-4. Conversion Specifications for G2_FMT_STRING and BTLP_FMT_STRING

Conversion Specification	Field name for Ev. Sys.	Description
%d	tid	Name of DACS II in DND.
%1	eqtype	Kind of equipment.
%2		Number(s) of failed equipment.
%E	eqid	Number(s) of failed equipment.
%c		Performance parameter or condition type.
%C	condtype	PBA, CGA, LOS, THR or null.
%f		Type of alarm.
%F	alarmtype	Kind of CGA, PBA or THR alarm.
%t		Message counter tag.
%s		Alarm status.
%v		Alarm severity.
%V	alarm_state	OOS, CRIT, MAJ, MIN, INFO or IDL .
%T	time	DND time of alarm.
%n	summary	DACS message summary.
%m	dacsmsgno	DACS output message number.
%N	npc_id	Name of NPC for NPC alarm.
%K	ckts	Name of ckts on NPC for NPC alarm.

Environment Variables (Continued)

G2_DATE and BLTP_FORMAT Conversion Specifications

Table 2-5 shows the conversion specifications for G2_DATE_FORMAT and BLTP_DATE_FORMAT.

Table 2-5. Conversion Specifications for G2_DATE_FORMAT and BLTP_DATE_FORMAT

Character	Description
%a	Abbreviated weekday name.
%A	Full weekday name.
%b	Abbreviated month name.
%B	Full month name.
%d	Day of month {01-31}.
%e	Day of month {1-31}.
%H	Hour {00-23}.
%I	Hour {00-12}.
%j	Day number of year {001-366}.
%m	Month {01-12}.
%M	Minute {00-59}.
%S	Seconds {00-59}.
%y	Year within century {00-99}.
%Y	Year as cyy {1999}.
%D	Date as %m/%d/%y.
%R	Time as %H:%M.
%T	Time as %H:%M:%S.
%%	Same as %.
Any other character	Copy as is.

Time Zone

Overview

The UNIX operating system automatically keeps track of time. The system administrator can obtain the current time and time zone information by using the **date** command. Internally, all time is maintained at Greenwich Mean Time (GMT), and adjusted to local time according to the time zone setting.

Time Zone Changes

Generally, the time zone information is set on the workstation at installation time and regional Alternate Time Zone (ATZ) adjustments take place accordingly. For example, Daylight Savings Time (DST) is an ATZ. The start and end dates and times at which an ATZ begins and ends may vary from country to country and from region to region. The UNIX operating system generally maintains this information accurately and adjusts the time properly for the ATZ transitions.

Timezone Command

If, however, time is not correctly adjusted to the ATZ automatically for your region, or you wish to change the time zone according to a different country/region, then a DND tool will allow for direct correction of that. The **timezone** command is provided to do this. Once the time zone information is adjusted this way, then the time zone will need to be adjusted for each year, in January, or as soon thereafter as is practical.

The procedure for setting the time zone is in GT 2.10U.

Printer Setup

Default Printer Type

The printer configuration was set at hardware installation time. A single default printer is defined for the system. The default printer type is HP Laser Jet.

Available Default Printer Configurations

The available “default” configurations for the printer are:

- A LAN-based printer
 - A locally-connected parallel port printer
 - A serial printer on a DECServer.
-

LAN-based Printer

In this configuration, the printer is connected to a 10 Megabit Local Area Network (LAN). This network printer can be shared by other computers on the LAN. This printer is set up using the **jetadmin** tool supplied by HP, before the DND Install script is run. The instructions for setup of this printer are included in the *DND Installation Manual*.

Locally-connected Printer

In this configuration, the printer is connected directly to the parallel port on the back of the workstation. When the DND Install script is run at DND installation time, if a printer has not been previously defined, then the locally-connected parallel port configuration is automatically set up by the DND Install script.

DECServer Printer

Tools and scripts are provided by the DND software so that printers can be connected to the serial ports of the DECServer 700. The setup of this printer type requires modification of some UNIX system files and the setup of printer filters. The instructions for setup of this printer are included in the *DND Installation Manual*.

Printer Setup (Continued)

Printer Naming

The CONSOLE PRINTER, as described in the DND Forms, is the “default” printer for the workstation. The default printer is typically named *lp* or *Printer*. Additional printers that are defined (such as DECServer 700 serial printers) will be listed by their UNIX names in the DND Forms. The following UNIX commands may be useful:

lpstat -d identifies the system default printer

lpstat -v identifies all printers.

Printer Usage

DND provides the following printer operations:

- Report printouts — After a report is generated, it can be printed from the REPORT OPERATIONS menu.
 - Screen printouts — You can print any of the screens available from the DND Forms interface by using the **PRINT** function key.
 - Logging of DACS messages to the printer — A DND administrator can direct DACS messages to a printer from the PRINTER MANAGEMENT form. Alarm messages or all messages from a DACS can be directed to a printer.
 - Printer controls — A DND administrator can use the PRINTER MANAGEMENT form to enable or disable printers, and to list or cancel print jobs. Users can list or cancel their own print jobs using selections from the TASK ADMINISTRATION menu.
 - Printer assignment — A printer can be assigned to a user, when a user login is added using the USER MANAGEMENT form. All print requests from the user will be sent to the assigned printer.
-

Netscape Printing

Printing from a Netscape Window

To print the contents of a Netscape window, click **File** from the top of Netscape window to reveal a pull-down menu. Select the **Print** option. The following items below are the ONLY items that can be printed from a Netscape window:

- Response to a DACS Message
- Response to a Report
- A Circuit Trace Table or an Altroute Table.

**WARNING:**

*Do not attempt to print the DND GUI forms or the DACS network map.
The DND system will freeze.*

DND GUI: Summary of Menus and Forms

Overview

The table below includes a comprehensive listing of menu selections, from the highest level on the left (the buttons on the DND Task Bar) and moving to the lowest level to the right. At the lowest level is typically a form. Nearly all forms include a **Action:** field. The Action identifies the task you want to perform. The table summarizes the **Actions** available.

DND GUI Task Table

Table 2-6. DND GUI Task Table

Main Task Button	Second Level	Action/Third Level
Alarms	Network Element Summary	■ Click on a site with a red arrow next to it to display its Alarm Summary Report. ■ Right-click on a site to display a menu with applicable provisioning options.
	Alarm Surveillance	
Provisioning (NETWORK:)	NE Provisioning*	CREATE RESTORE BRESTORE MODIFY REMOVE DELETE MODIFY CHGSITE
	End User*, ***	CREATE DELETE MODIFY
	NE Partitioning	MODIFY

Table 2-6. DND GUI Task Table (Continued)

Main Task Button	Second Level	Action/Third Level
Provisioning (NETWORK:), Continued	Intertie***	CREATE DELETE MODIFY ADDNPCS DELNPCS
Provisioning (DACS II, DACS II ISX)	Circuit	ACTIVATE DELETE MODIFY PEND DEACTIVATE COMBINE ALTRROUTE NORMALIZE ADDLEG DELLEG CHGRPATH TRACE
	NPC	CREATE RESTORE MODIFY REMOVE DELETE LOOPBACK
	MMFG	CREATE RESTORE MODIFY REMOVE DELETE
	Database Audit/Synchronization	ALARM SYNC CHANNEL AUDIT CHANNEL SYNC NPC AUDIT NPC SYNC SUBRATE AUDIT** SUBRATE SYNC** UPLOAD ABORT

Table 2-6. DND GUI Task Table (Continued)

Main Task Button	Second Level	Action/Third Level
Provisioning (DACS II, DACS II ISX), Continued	Test Access	MONITOR SPLIT HUB TERMINATE UNTERMINATE RELEASE LOOP
	DACS Message	
	Outage Log	INSERT MODIFY DELETE DESTROY
Provisioning (DACS II AX, AAC, IMACS, OTHER)	Termination Name	CREATE DELETE MODIFY
	Termination Circuit Mapping	CREATE DELETE MODIFY TRACE
	Telnet	
Provisioning (ADMINISTRA- TION)	System Name Change	
	System Shutdown	SHUTDOWN REBOOT DND REBOOT DND UPDATE
	System Date/Time	
	Frame Date/Time Synchronization	
	Task Administration	LIST TASKS DELETE TASKS DELETE ALL TASKS
	Printer Administration	LIST CANCEL ENABLE DISABLE LOG ALL LOG ALARMS STOP LOGGING

Table 2-6. DND GUI Task Table (Continued)

Main Task Button	Second Level	Action/Third Level
Provisioning (ADMINISTRATION:), Continued	User Administration	CHANGE PASSWORD USER MODIFY USER ADD USER DELETE
	Database Backup/Restore	BACKUP RESTORE
	SNMP NB Provisioning	
Reports (ALARMS (DACS II, DACS II ISX))	DACS Alarm Log Report	
	Circuit Alarm Report	
	NPC Alarm Report	
	Common Equipment Alarm Report	
	Alarm Query Report	
	Outage Report	OUTAGE INFORMATION
Reports (ALARMS (DACS II AX, AAC, IMACS, OTHER))	Alarm Log Report	
	Port Alarm Report	
Reports (PROVISIONING (DACS II, DACS II ISX))	Circuit Report	CIRCUIT CONNECTIONS CIRCUIT OPTIONS CIRCUIT INFORMATION CIRCUIT AVAILABILITY
	Channel Report	
	Test Access Report	
	NPC Report	NPC IDS NPC NUMBERS
	Audit/Synchronization Report	ALARM SYNC CHANNEL AUDIT CHANNEL SYNC NPC AUDIT NPC SYNC SUBRATE AUDIT** SUBRATE SYNC** UPLOAD

Table 2-6. DND GUI Task Table (Continued)

Main Task Button	Second Level	Action/Third Level
Reports (PROVISIONING (DACS II, DACS II ISX)), Continued	Echoed Response Processing Report	CIRCUIT NPC TEST ACCESS
	MMFG Provisioning Report	
	History Log Report	
	Message Log Report	
	Frames/Links Report	PORTS FRAME CONTROL LINK CONNECTIVITY PROVISIONING
Reports (PROVISIONING (DACS II AX, AAC, IMACS, OTHER))	Termination Name Report	CHANNELS INTERTIE INFO REMARKS ALARMS
	Termination Mapping Report	MAPPINGS REMARKS ALARMS
	Communications Report	
Reports (ADMINISTRA- TION)	User Administration Report	USER PARTITION USER CONNECTIVITY USER LOGINS
	Task Schedule List Report	LIST
	Task Schedule Results Report	RESULTS

Table 2-6. DND GUI Task Table (Continued)

Main Task Button	Second Level	Action/Third Level
Workspace	Save To Server*	
	Revert To Saved	
	Select All	
	Select All Non-grouped Nodes	
	Unselect All	
	Create Group From Selections	
	Expand All Groups	
	Condense All Groups	
	Show User Name And Partition	
	Remove Locator	
	Unzoom	
Session	User Login	
	Logoff	
Help	Help Table Of Contents	Help Topic

* System Administrative functions only.

** This option appears if the X.50 subrate feature is enabled.

*** This option does not appear when the EMS-only options are turned on.

DND Forms: Summary of Menus And Forms

DND Forms Task Table

Table 2-7 lists menu selections starting at the highest level to the left and moving to the lowest level to the right. At the lowest level is typically a form. Nearly all forms include an **Action** field. The **Action** identifies the task you want to perform. This table summarizes the **Actions** available.

Table 2-7. DND Forms Task Table

Main Menu Option	Second Level	Action/Third Level
PROVISIONING	CIRCUIT	ACTIVATE MODIFY PEND DELETE DEACTIVATE ALTROUTE NORMALIZE COMBINE BROWSE ADDLEG DELLEG CHGRPATH
	TEST PORT	CREATE TP DIGROUP DELETE TP DIGROUP CREATE TEST PORT DELETE TEST PORT

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
PROVISIONING (Continued)	NPC	BROWSE CREATE DELETE REMOVE RESTORE MODIFY QUERY LOOPBACK
	RECONFIGURATION PLAN	CREATE DESTROY BOOT INSERT REMOVE CHANGE EXECUTE IDLE CHECK ABORT CLEAN
	AUTOMATIC RECONFIGURATION PLAN	CREATE DESTROY INSERT REMOVE CHANGE EXECUTE IDLE CHECK CLEAN ABORT

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
PROVISIONING (Continued)	ESTABLISHED DS0 CHANNELS ¹	ACTIVATE MODIFY DELETE DEACTIVATE BROWSE
	SUBRATE CROSS CONNECT ¹	ACTIVATE MODIFY DELETE DEACTIVATE BROWSE
	NPC ROLL	
	24-HOUR PERFORMANCE ²	BROWSE RESET
SYSTEM ADMINISTRATION	LOGIN PORTS	RESTORE REMOVE
	X.25 LINK ADMINISTRATION	RESTORE REMOVE
	FRAME ADMINISTRATION	CREATE RESTORE BRESTORE REMOVE DELETE MODIFY CHGSITE
	NAME CHANGE	
	PRINTER ADMINISTRATION	ENABLE DISABLE LIST CANCEL LOGALL LOGALARMS STOPLOGGING
	SHUTDOWN	QUIT IMMEDIATE 1 MINUTE 5 MINUTE 10 MINUTE NO
	DATE AND TIME	

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
SYSTEM ADMINISTRATION (Continued)	SYNCHRONIZE FRAME DATE & TIME	
DATABASE ADMINISTRATION	DATABASE AUDIT/SYNCHRONIZATION	ALARM SYNC CHANNEL AUDIT CHANNEL SYNC NPC AUDIT NPC SYNC UPLOAD ABORT
	BACKUP/RESTORE	DATABASE BACKUP/RESTORE (TAPE) LOG BACKUP/ RESTORE (TAPE) LOG BACKUP/ RESTORE (DISKETTE) REPORT FORMAT BACKUP/RESTORE (DISKETTE) FORMAT DISKETTE
	ENTER OUTAGE DATA	INSERT CHANGE DELETE DESTROY
TASK ADMINISTRATION	TASK MANAGEMENT	LIST DELETE
	PRINTER QUEUE STATUS	LIST CANCEL
USER ADMINISTRATION	USER MANAGEMENT	ADD CHANGE DELETE
	CHANGE PASSWORD	

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
PASSTHROUGH	MULTIPLEXED PASSTHROUGH	
	PASSTHROUGH	
	FRAME COMMAND SCRIPT	EDIT DELETE EXECUTE ABORT DOSREAD DOSWRITE
PASSTHROUGH ABORT		
REPORT OPERATIONS	CIRCUITS	CIRCUIT CONNECTIONS CIRCUIT OPTIONS CIRCUIT INFORMATION CIRCUIT AVAILABILITY
	NPCS	NPC IDS NPC NUMBERS
	CHANNELS	CHANNEL USAGE
	ALTROUTES/PREEMPTIONS	ALTROUTED CIRCUITS PREEMPTED CIRCUITS
	OUTAGES	
	TEST PORT	TEST PORT STATUS TEST PORT PROVISIONING
	TEST ACCESS	
	FRAMES/LINKS	PROVISIONING LINK STATUS LINK CONNECTIVITY FRAME CONTROL

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
REPORT OPERATIONS (Continued)	USER ADMINISTRATION	USER LOGINS
	NPC ALARMS	
	CIRCUIT ALARMS	
	ALARM LOG	
	AUDIT/SYNCHRONIZATION RESULTS	ALARM SYNC CHANNEL AUDIT CHANNEL SYNC NPC AUDIT NPC SYNC UPLOAD
	NPC ROLL RESULTS	
	ECHOED RESPONSE PROCESSING	CKT NPC TA
	TASK SCHEDULE LIST	
	TASK SCHEDULE RESULTS	
	LOST RESPONSE LOG	CIRCUIT NPC FRAME
	HISTORY LOG	SCREEN PRINTER DOS DISKETTE
	SCRIPT LOG	SCREEN PRINTER DOS DISKETTE
	DISPLAY LAST GENERATED REPORT	SCREEN PRINTER DOS DISKETTE
	EDIT CUSTOM REPORT FORMAT	CREATE DELETE MODIFY RENAME
	ALARM QUERY	

Table 2-7. DND Forms Task Table (Continued)

Main Menu Option	Second Level	Action/Third Level
REPORT OPERATIONS (Continued)	DISPLAY ALARM QUERY	SCREEN PRINTER DOS DISKETTE
	RECONFIGURATION SUB-MENU	RECONFIGURATION PLANS RECONFIGURATION PLANS ALTRROUTE RECONFIGURATION PLAN RESULTS AUTO RECONFIGURATION PLAN RESULTS
	ESTABLISHED DS0 CHANNELS ¹	
	SUBRATE CIRCUITS ¹	
	COMMON EQUIPMENT ALARMS	
	24-HOUR PERFORMANCE ²	
TEST ACCESS		MONITOR SPLIT HUB TERMINATE UNTERMINATE RELEASE LOOP CHLOOP CHUNLOOP
LOGOFF		

¹ This option appears if the X.50 subrate feature is enabled.² This option appears if the 24-hour Performance Monitoring feature is enabled.

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Background

Purpose The purpose of this chapter is to familiarize users with the DND GUI and the DND Forms interface. Users will be able to recognize text, buttons, field names, and other relevant information relating to the DND GUI and the DND Forms interface.

Objectives This chapter provides background information to help you perform the following:

DND GUI:

- Identify a network map
- Identify the alarm severity indicated by the color of icons and interties
- Use the mouse to click and drag network elements and End User icons across the DND Workspace
- Organize network elements into groups
- Navigate through GUI form fields using the mouse or tab key.

DND Forms:

- Navigate through the menus and forms
 - Use the DND Forms function keys.
-

Related tasks For related tasks for DND GUI, see the following General Tasks in Volume II:

- Replacing the DND GUI Workspace Background Image GT 3.1G
 - Replacing the DND GUI Mini-Map Background Image GT 3.2G
-

Related information For related information refer to the:

- *DACS II and DACS II ISX Operation and Maintenance Guide*
 - *DACS II Network Director Installation Manual.*
-

DND GUI: The DND Main Window

Overview

The DND Main window is a Netscape browser window displaying the DND Workspace. The DND Workspace displays the network map, a collection of group icons, network element icons, End User icons, and interties illustrating the connections and elements that exist in the DACS network. The DND GUI's straight-forward interface allows users to manipulate these network elements to the configuration of their DACS networks.

All DND tasks start from this window by:

1. Clicking the specified task button located in the DND Task Bar or clicking a network element icon
2. Selecting the appropriate, specific task which appears on the pull-down menu.

Background Picture

The DND Workspace displays the DACS network map on a background picture in .gif format. The image on the DND Workspace is a .gif file. This image can be changed to any .gif figure you choose.

Ideally, you should have two replacement images: one for the full-size Network Map and another for the mini-map. The replacement for the full-size Network Map should have the same dimensions as the original images. Otherwise, the size of the replacement image may affect or warp the size of the DND Workspace.

DND GUI: The DND Main Window (Continued)

Navigation Using the Mouse

While navigating through the DND Workspace or forms, the following terms are used throughout this manual to distinguish mouse functions from one another:

- **Select** or **Click** - quick press and release of the left mouse button.
- **Right-click** - press right mouse button. You may be required to hold down the right mouse button or quickly release it. For example, to access a pull-down menu from a map icon, on the PC, right-click and release; from a workstation, right-click and hold.
- **Left-click** - quick press and release of left mouse button.
- **Double-click** - two quick mouse clicks.
- **Control-click** - press and hold down the Control key and quickly press and release left mouse button.
- **Shift-click** - press and hold down the Shift key and quickly press and release left mouse button.
- **Drag** - **Click** on a icon and hold of the left mouse button, while sliding the mouse pointer across the screen. This will move the icon across the screen with the mouse.
- **Drop** - let go of the left mouse button after performing a **Drag**.
- **Enter** (information in a field) - place the mouse cursor in a field to type information.

Navigation Using the Tab Key

The General Tasks in this manual are written assuming you will use your mouse to navigate through the fields and buttons on the form. Alternatively, you can use the **Tab** key on your keyboard to move between fields and buttons.

The field or button that is active will be highlighted by a dotted rectangle around it (in the case of combo boxes and text fields, a slightly heavy rectangle will be shown on around the inner border of the field). If a text field is highlighted, you can type into the field. When a button is highlighted, you can press the **RETURN** key or the spacebar on your keyboard to activate it. For other fields, you will still need the mouse to perform selections.

DND GUI: The DND Main Window (Continued)

On-line Help

There are two types of on-line help:

1. The **Context-Sensitive** Help - On each form, when the cursor is clicked within a field, or the Tab key is used to move from field to field, a brief field description, or helpful tip, appears just above the form's Message field to aid users in completing the forms.
2. The **Content** Help - When the [Help...](#) button, located in the DND Menu Bar, is clicked, a table of contents will appear listing relevant on-line documents, including this manual. Clicking on the document names will reveal its help information.

DND Main Window Usage

The Netscape window used for the DND Main window should only be used for DND operations. If you need to use a Netscape window for another purpose, open a separate Netscape window to avoid being logged out of the DND Main window.

Additional Netscape Help

For additional assistance with Netscape, click *Help* located on the Netscape Menu bar to display a menu of help items.

DND GUI: The DND Main Window (Continued)

DND Main Window

Figure 3-1 displays the DND Main window and an example of a DND Network Map.

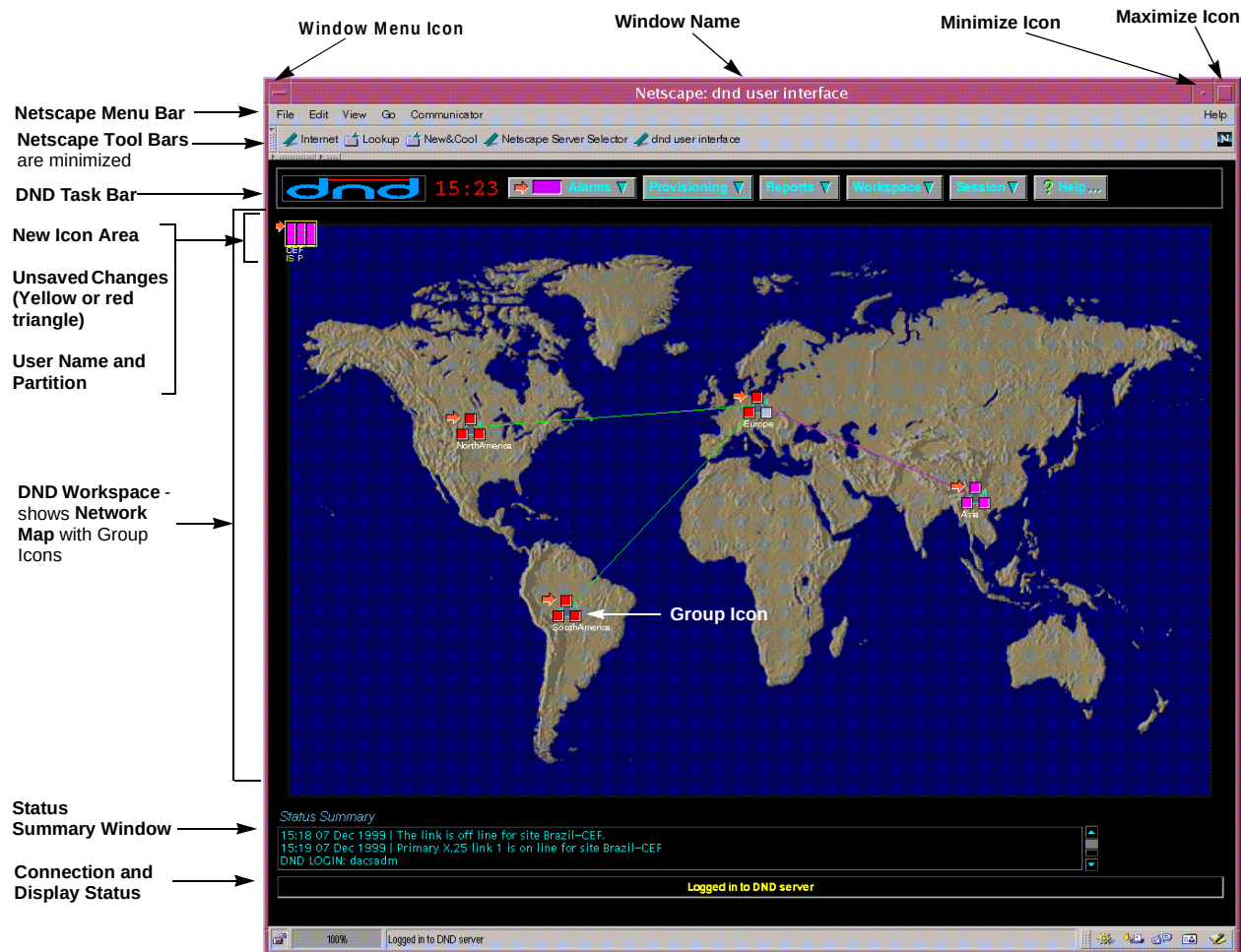


Figure 3-1. DND GUI: Main Window



NOTE:

The Window Menu Icon, Window Name, Minimize Icon, and Maximize Icon apply only to the recommended CDE. Use of OpenLook or any other window manager may change the window frame decoration.

DND GUI: Parts of the DND Main Window

Window Menu Icon

Click the Window Menu Icon to reveal a pop-up menu of actions for the window. Double-click this icon to close the window and exit the DND GUI.

Window Name

The title of the Netscape window. The Window Name also appears on every form and report display.

Minimize Icon

Click the Minimize Icon to minimize the window.

Maximize Icon

Use the Maximize Icon for the following:

- If the square icon is raised, click it to maximize the window to full screen
 - If square icon is recessed, click it to make the window smaller
-

Netscape Menu Bars

The Netscape Menu bars are used for Netscape operations, but are, however, not necessary for DND activation. By default, these bars will appear minimized to conserve screen space. To display a tool bar, click the triangle of the minimized tool bar.

DND Task Bar



The DND Task Bar is composed of the DND logo, system time (24 hour clock), and system task buttons. The task buttons will be used to perform provisioning, report operation, and other DND GUI tasks.

DND GUI: Parts of the DND Main Window (Continued)

DND Logo



The DND logo acts as a processing indicator for the system. When a user logs on to the DND GUI, a red line will appear as part of the logo. The line indicates connectivity between the GUI (front end) and the DND server (back end). The connectivity line will flash a light from left (front end) to right (back end), indicating the connection is being activated.

Periodically, the server sends polling information (current alarm status and time of day information) to the DND GUI. This is indicated by a flash of light along the connectivity line from right to left.

When the DND is retrieving a form, a light flashes from left to right, indicating a request from the GUI to the server for the form. This is also indicated by the "Logged in to DND server" message that appears in the Main Status field on the DND GUI Main Window. Once the form has been retrieved, the bright light quickly flashes back from right to left, sending the form from the server to the GUI. The polling flashes from right to left will begin appearing again.

The logo display is an indicator of approximate message activity between the front-end and back-end, and is not necessarily synchronized with actual messages, i.e. message transactions may be completed before indicated on the logo display.

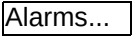
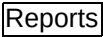
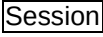
When a user is logged off, the red line disappears from the DND logo and the flashing light is discontinued.

DND GUI: Parts of the DND Main Window (Continued)

DND Task Bar Buttons

The descriptions of the DND Task Bar buttons are in Table 3-1.

Table 3-1. DND GUI: Task Bar Buttons

Button	Description
	Displays the menu for selecting either: ■ The NE Summary window or... ■ The Alarm Surveillance window.
	Displays the menu for ALL provisioning-related tasks.
	Displays the menu for ALL reports, except intertie reports.
	Displays the Workspace menu, which allows the user to manipulate groups and save Network Map changes to the server.  NOTE: On DND systems where the network map display is disabled,  does not appear.
	Displays the menu with choices for login and logoff.
	Displays on-line content help for available on-line documentation.

DND GUI: Parts of the DND Main Window (Continued)

DND Workspace The area of the DND Main window where the Network Map is created, modified, and monitored for alarm status. The DND Main window can contain the complete Network Map, as shown in Figure 3-1 or it can contain a zoomed-in view of a particular area of the Network Map as shown in Figure 3-2.

Network Map The picture that displays the graphical representation of the DACS network. The network map can include icons that represent individual elements in the DACS network and icons that represent groups of elements.

There are map icons for each of the following: groups, DACS II, DACS II ISX, End User, intertie, DACS II AX 4, DACS II AX 11, IMACS, AAC, and Other-type SNMP nodes. The icons can be moved anywhere on the Network Map. The color of the interties and icons indicate alarm status. Each of these icons are described under "Map Icons."

**New Icon Area/
Unsaved Changes** Area on the DND Workspace where a newly created icon initially appears. Drag and drop the icon to the appropriate place on the DND Workspace.

A yellow triangle appears in the top left corner of the Network Map if any changes have been made to the Workspace, but they have not been saved to the server. Also, the message *changes to workspace not saved* appears under the [Workspace](#) button. This triangle will turn red when workspace changes get saved by another user that might conflict with the unsaved changes in this workspace. A similar warning message indicating this will also appear under the [Workspace](#) button.

To save Workspace changes, click [Workspace](#) in the DND Task Bar, then select **Save to Server**. Only a user with administration privileges can **Save to Server**.

User Name and Partition This area on the DND Workspace can show the User Name and Partition. To show this information, click [Workspace](#) in the DND Task Bar, then select **Show User Name and Partition**. By default, User Name and Partition are not shown.



NOTE:

This feature is not available on DND systems where the network map display is disabled.

DND GUI: Parts of the DND Main Window (Continued)

Status Summary Window

The Status Summary Window displays all system status messages, audit/sync statistics, echoed response messages, error messages, etc.

Connection and Display Status Line

The Connection and Display Status Line displays the server connection and user interface status.

DND GUI: Zooming

Description

Zooming lets you focus on a section of the network map and enlarge it to the full-size of the Netscape window. When you use zooming, the complete Network Map is shown in a miniature-version in the lower right corner of the map. Figure 3-2 shows a zoomed-in view of the Network Map with a variety of map icons.

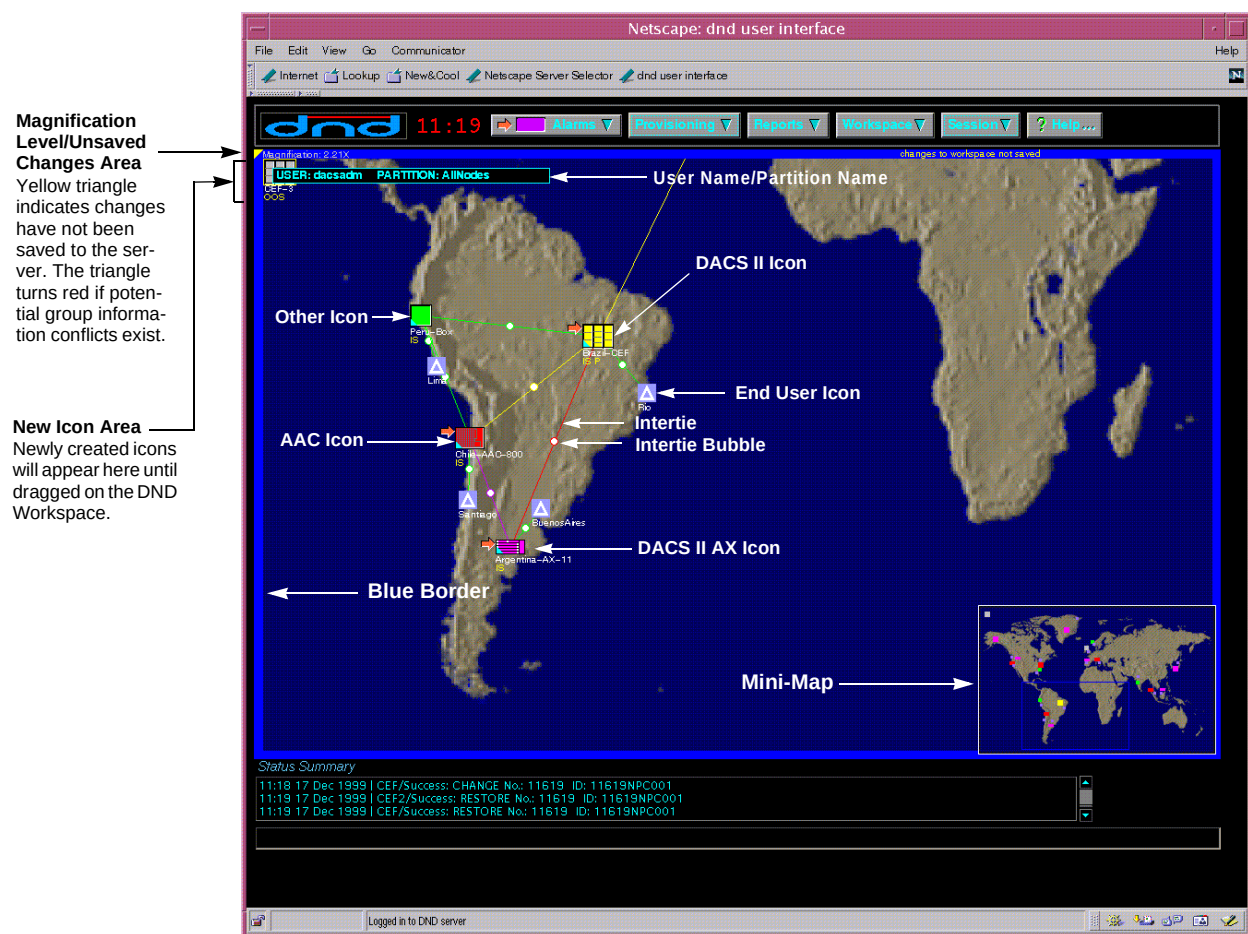


Figure 3-2. DND GUI: Zoomed View of Network Map

DND GUI: Zooming (Continued)

Zooming Actions Table 3-2 describes the zooming and mini-map actions on the Network Map.

Table 3-2. DND GUI: Zooming and Mini-Map Actions

To:	Action:
Zoom in on an area of the Network Map	Workstation: Hold down right mouse button and drag diagonally. Release when outline appears around desired area. PC: Double-click either mouse button and drag diagonally. Release when outline appears around desired area. (Note: DND may constrain vertical or horizontal direction of outlined area.)
Unzoom and return to full-size Network Map	Method 1: Click Workspace in the DND Task Bar, then select Unzoom. Method 2: Right-click on an empty spot on the Network Map, then select Unzoom from the pop-up menu.
Move the mini-map	Hold down left mouse button and drag map to new position. The map remains in the new position for the remainder of your login session.
Change zoom area from the mini-map	From the mini-map, you can change the zoom area displayed in the Netscape window. Use same buttons as you use on the Network Map. Workstation: Hold down right mouse button and drag diagonally. Release when outline appears around desired area. PC: Double-click either mouse button and drag diagonally. Release when outline appears around desired area. (Note: DND may constrain vertical or horizontal direction of outlined area.)

DND GUI: Zooming (Continued)

Features of the Zoom View

When you zoom in on an area of the Network Map, the following features appear in the Netscape Window, as shown in Figure 3-2:

- Magnification Level - indicates the magnification level of the zoom.
- New Icon Area/Unsaved Changes - new nodes without an assigned map position appear in the top left corner of the zoom view. Drag and drop the icon to the appropriate place on the DND Workspace.
- A yellow triangle appears in this area if changes have been made to the Workspace, but have not been saved. Also, the message *changes to workspace not saved* appears under the **Workspace** button.

If changes to group information occur on the server while other changes to group information are made locally, the triangle turns to red to indicate a potential conflict that can destroy another user's changes upon doing a **Save to Server**.

To save Workspace changes, click **Workspace** in the DND Task Bar, then select **Save to Server**. Only a user with administration privileges can **Save to Server**.

- Blue border - displays around outer edge of zoomed view.
- Mini-map - displays a miniature-version of the complete Network Map. A blue box on the mini-map indicates the area that is being displayed in the zoom view.

Things to Keep in Mind

When you zoom in on an area of the Network Map:

- Try to locate the icons in the center of the zoom area. If an icon is at the edge of the area, it may not appear in the zoomed view.
 - You can move icons anywhere within the zoomed view. You cannot move the icons outside of the zoomed view.
 - If the zoomed view does not contain the icons you want, unzoom and try again, or select a new zoom area from the mini-map.
 - When you log in to DND, the Network Map is always displayed full-size.
 - If you want to refresh the map data with the last saved changes, select click **Workspace** in the DND Task Bar, then select **Revert to saved**.
-

DND GUI: Zooming (Continued)

Zooming and Grouping

When you zoom on an area of the Network Map that includes groups:

- If you are zooming on a group, the group may automatically expand in the zoomed view if the magnification level is equal or greater than the “Auto expand from zoom” setting in Group Properties. If the group does not appear at all in the zoomed view, you may want to change the Auto expand zoom Magnification setting. For details, see “Group Properties Form” on Page 3-37.
 - If you manually expand a group, the group remains expanded regardless of the magnification level.
-

DND GUI: Map Icons

Overview

Each of the map icons that can appear on the Network Map are described in the following sections.

Pull-down Menus from Map Icons

A pull-down menu is available from each map icon or an intertie node. To access these pull-down menu:

Table 3-3. DND GUI: Accessing Map Icon Pull-down Menus

From:	Action:
Workstation	Right-click and hold down the mouse button on the icon/intertie, then select an option from the pull-down menu.
PC	Right-click and release the mouse button without moving the mouse, then select an option from the pull-down menu.

Unsaved Changes



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A blue border appears around a map icon when there have been changes made, such as map position or group information, but the changes have not been saved. To save these changes, click **Workspace** in the DND Task Bar, then select **Save to Server**. Only a user with administration privileges can **Save to Server**.

DND GUI: Map Icons (Continued)

DACS Icons

The DACS icons represent existing DACS systems grown and restored in the DND network. The properties of the icons are:

- Distinguishable icons for the DACS II and DACS II ISX.



CEF2
IS P



NONCEF-2
IS P



SBF-3
IS P



ISX-1
IS P



NOTE:

All DACS II frames (CEF, Non-CEF, E/SBF) use the same icon.

- Icons can be moved within the DND Workspace
- The icon will change to the color of the highest existing alarm severity detected on that frame.
- Underneath the icon is the DACS name (user-defined) and its DACS state.
- A blue triangle appears in the bottom left corner of the icon if the node is part of a group.

DACS State

The DACS state is described in Table 3-4.

Table 3-4. DND GUI: DACS Alarm State Descriptions

DACS State	Description
IS P	In-Service, Primary
IS B	In-Service, Backup is "primary" line
OOS	Out-of-Service
AS	An Audit/Synch command is in progress
QRY	A Query command is in progress
ERR	Error - Provisioning error due to databases being out of sync
ALM	DACS in alarm

DND GUI: Map Icons (Continued)

DACS Alarm Severity Color Scheme

The DACS icon color indicates the system's highest alarm state. Refer to this table to determine the highest alarm severity for DACS map icons.

Table 3-5. DND GUI: Color Scheme for DACS Alarm Severity

Color	Alarm State
Green	No alarms present or informational alarms only.
Yellow	Highest alarm state is a Minor alarm
Red	Highest alarm state is a Major alarm
Magenta	Highest alarm state is a Critical alarm
Grey	The element is indicating Out-of-Service (OOS), Query (QRY), Error (ERR), or Alarm (ALM).

DACS Icon Menu

You can perform DACS and other provisioning actions directly from a pull-down menu from the DACS icon. The pull-down menu has the following options:

Table 3-6. DACS Icon Menu

If you select...	...Then DND will display...
Circuit Provisioning...	The CIRCUIT PROVISIONING form with the appropriate DACS name automatically filled in.
NPC Provisioning...	The NPC PROVISIONING form with the appropriate DACS name automatically filled in.
MMFG Provisioning...	The MMFG PROVISIONING form with the appropriate DACS name automatically filled in.
Intertie Provisioning...	The INTERTIE PROVISIONING form with the appropriate DACS name automatically filled in as SITE 1.  NOTE: The Intertie Provisioning option is not available when Element Management only functions are enabled.

If you select...	...Then DND will display...
Database Audit/ Synchronization...	The DATABASE AUDIT/SYNCHRONIZATION form with the appropriate DACS name automatically filled in.
Test Access...	The TEST ACCESS form with the appropriate DACS name automatically filled in.
NE Provisioning...	The NE PROVISIONING form with the appropriate DACS name and information automatically filled in.
End User Provisioning...	The END USER PROVISIONING form with the appropriate DACS name automatically filled in.  NOTE: The End User Provisioning option is not available when Element Management only functions are enabled.
DACS Message...	The DACS MESSAGE form with the appropriate DACS name.
telnet...	A telnet window will appear, connecting the DND to the selected DACS.  NOTE: The telnet window will only appear if the DACS is provisioned for telnet communications.
DACS Alarm Log Report...	An Alarm Log Report for the DACS.
Equipment View	The Equipment View for the DACS.
Condense <parent group name>	If the SNMP is part of a group, this option is listed. It allows you to condense the group.
Remove from all groups	If the SNMP is part of a group, this option is listed. This option allows you to remove the DACS from its group, making it not a member of any group.

DND GUI: Map Icons (Continued)

SNMP Icons

Each type of SNMP node is represented by an icon. Each SNMP node has a user-defined name. The icon color indicates the highest alarm state. A blue triangle appears in the bottom left corner of the icon if the node is part of a group.

**NOTE:**

The IMACS and AAC SNMP nodes use the same icon.

SNMP State

The SNMP states are described in Table 3-7.

Table 3-7. DND GUI: SNMP Alarm State Descriptions

SNMP State	Description
IS	In-Service
OOS	Out-of-Service
QRY	Query - DND is querying the SNMP node for release and type information.
ERR	Error - indicates that the SNMP node has an unsupported release or is an unsupported type.
ALM	Alarm - indicates a loss of communication.

DND GUI: Map Icons (Continued)

SNMP Alarm Severity Color Scheme

The SNMP icon color indicates the system's highest alarm state. Refer to this table to determine the highest alarm severity for SNMP map icons.

Table 3-8. DND GUI: Color Scheme for Alarm Severity

Color	Alarm State
Green	No alarms present or informational alarms only.
Yellow	Highest alarm state is a Minor alarm
Red	Highest alarm state is a Major alarm
Magenta	Highest alarm state is a Critical alarm
Grey	The element is indicating Out-of-Service (OOS), Query (QRY), Error (ERR), or Alarm (ALM).

DND GUI: Map Icons (Continued)

SNMP Node Icon Menu

You can obtain a menu of actions directly from the SNMP node icon. The pull-down menu contains the following choices:

Table 3-9. SNMP Icon Menu

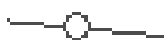
If you select...	...Then DND will display...
telnet ...	From a workstation, DND will display the login prompt for the SNMP node. Once you successfully log in, you can use the device's native user interface for management. From a PC, DND will display instructions for using the telnet application available from your PC to access the SNMP node.
Intertie Provisioning...	The INTERTIE PROVISIONING form with the appropriate SNMP node name automatically filled in.  NOTE: The Intertie Provisioning option is not available when Element Management only functions are enabled.
NE Provisioning...	The NE PROVISIONING form with the appropriate SNMP node name and information automatically filled in.
End User Provisioning...	The END USER PROVISIONING form with the appropriate SNMP node name automatically filled in.  NOTE: The End User Provisioning option is not available when Element Management only functions are enabled.
Termination Name...	The TERMINATION NAME form with the appropriate SNMP node name automatically filled in.
Termination Circuit Mapping...	The TERMINATION CIRCUIT MAPPING form with the appropriate SNMP node name automatically filled in.
Alarm Log Report...	An Alarm Log Report for the SNMP node.

If you select...	...Then DND will display...
Equipment View	The Equipment View for the SNMP node. Applies only to DACS II AX, IMACS, and AAC. Does not apply to Other-type SNMP nodes.
Condense <parent group name>	If the SNMP is part of a group, this option is listed. It allows you to condense the group.
Remove from all groups	If the SNMP is part of a group, this option is listed. This option allows you to remove the DACS from its group, making it not a member of any group.

DND GUI: Map Icons (Continued)

Intertie

Interties represent connections, or trunk lines, between network elements. NPCs or ports are provisioned on either side of the intertie to define the physical connection, however, NPCs cannot be provisioned on the side of the intertie connected to an End User.



Direct Intertie



Indirect Intertie



NOTE:

Interties are not displayed when Element Management only functions are enabled.

Intertie Alarm Severity Color Scheme

Interties change color if at least one NPC or port connected to it is in alarm. The color reflects the highest alarm state of an NPC or port on the intertie. The color scheme is described in Table 3-10.

Table 3-10. DND GUI: Intertie Color Scheme

Color	State of Intertie
Green	No alarms on any NPCs on the intertie.
Yellow	Highest alarm state of an NPC on the intertie is a Minor alarm.
Red	Highest alarm state of an NPC on the intertie is a Major alarm.
Magenta	Highest alarm state of an NPC on the intertie is a Critical alarm.

Intertie Bubble

Each intertie has an intertie bubble (circular or square) located in the center. A circular bubble indicates a direct trunk connection, and the square bubble indicates an indirect connection (e.g. SONET ring, etc.). The bubble is used to select the intertie with the mouse pointer to reveal the intertie's pull-down menu.

DND GUI: Map Icons (Continued)

Intertie Bubble Menu

You can obtain a menu of actions directly from the intertie. The pull-down menu contains the following choices:

If you select...	...Then DND will display...
Intertie Provisioning	The INTERTIE PROVISIONING form.
Intertie Port Report	The INTERTIE PORT REPORT for the selected intertie.
Intertie Alarm Report	The INTERTIE ALARM REPORT for the selected intertie.

Creating an Intertie

There are several ways to access the INTERTIE PROVISIONING form:

- Select the **Provisioning** task bar button, then select Intertie Provisioning
- Right-click a map icon, then select Intertie Provisioning from the menu
- Press Shift left-click on a map icon, then drag the intertie line to the element to be connected and release. The Intertie Provisioning form appears with data already filled in.

Identifying NPCs and Ports in an Intertie

On a DACS II or DACS II ISX, NPCs are assigned to interties. NPCs are assigned by NPC ID, extended number, or hierarchical number.

On an AAC/IMACS or a DACS II AX, equipment ports are assigned to interties. The naming scheme is provided by the equipment.

Table 3-11. Intertie Port Numbering Scheme for SNMP Nodes

Equipment	Slot	Port
DACS II AX	1-11	1-8
AAC/IMACS	P 1-4 W 1-4 U 1-8	P 1-132 W 1-8 U 1-8
Other	1-99	1-999

DND GUI: Map Icons (Continued)

End User Icons



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End User icons represents End User equipment. All End Users have the same color and design. The status of End User equipment cannot be monitored by the DND.

For additional information, refer to Chapter 6, End User Provisioning.

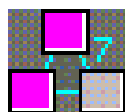


NOTE:

End Users are not displayed when Element Management only functions are enabled.

DND GUI: Map Icons (Continued)

Group Icons



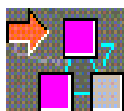
Group icons represent a collection of network elements (NE) and sub-groups.

A group can contain any number of DACS II, DACS II ISX, DACS II AX, IMACS, AAC, and Other-type SNMP nodes. A group also contains the end-users and interties associated with an NE.

The group icon contains several pieces of information:

- **Number** - The number next to the group icon represents the number of network elements and sub-groups in the group. Each sub-group is counted as one. End-users and interties are not counted.
- **Name** - Underneath the icon is the group name. A group is automatically assigned a name, but the user can create a new name for a group.
- **Alarm Severity** - The icon color indicates the group's highest alarm state and the existence of any out-of-service nodes.
- **Member** - If a blue triangle appears in the bottom left corner of the group icon, the group is a member of another group.

Group Alarm Severity Color Scheme



When a new alarm occurs in a group, the New Alarm Indicator arrow appears next to the group icon. For details, see "New Alarm Indicator" later on Page 3-43.

The icon color indicates the group's highest alarm state and the existence of any out-of-service nodes. The color scheme is described in Table 3-12.

Table 3-12. DND GUI: Group Color Scheme

Color	State of Group
Green	No alarms or only informational alarms in the group.
Yellow	Highest alarm state of the group is a Minor alarm
Red	Highest alarm state of the group is a Major alarm
Magenta	Highest alarm state of the group is a Critical alarm
Grey	Indicates that the group contains one or more out-of-service nodes.

DND GUI: Map Icons (Continued)

Group Icon Menu You can obtain a menu of actions directly from the group icon. The pull-down menu provides the following choices:

If you select...	...Then...
Group properties	The Group Properties form. From this form you can assign a name to the group and set a magnification level for the auto-expand feature. When you zoom in on the group, the group will automatically expand when the specified magnification level is reached.
Expand	The group expands so that the elements in the group are displayed. Sub-groups must be expanded separately.
Delete	The group is deleted. The elements in the group are not deleted.
Condense <parent group name>	If the group is member of another group, this option is listed. It allows you to condense the parent group.
Remove from all groups	If the group is part of another group, this option is listed. This option allows you to remove the group from all groups that it is in.

For additional information, refer to "DND GUI: Grouping."

DND GUI: Grouping

Definition

Grouping allows you to represent a group of network elements with a single group icon. Grouping can be used to improve the appearance of the Network Map and to create a sensible hierarchy of network elements. Figure 3-3 shows how several map icons can be represented by a single group icon on the Network Map.

A blue triangle in the bottom left corner of a map icon indicates that the node is a member of a group.

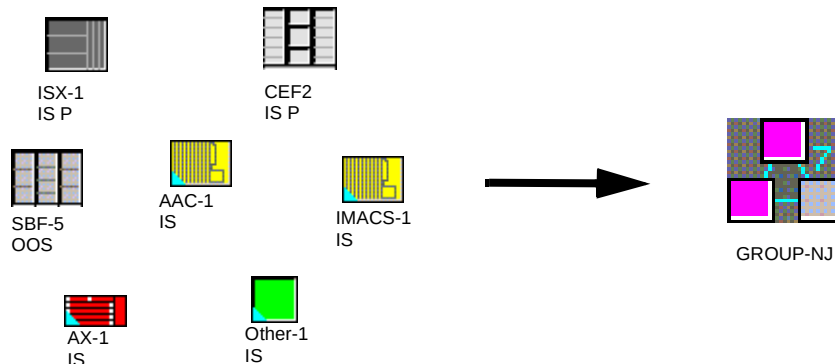


Figure 3-3. DND GUI: Nodes can be grouped

Why use grouping?

DND can support 60 DACS frames and 256 SNMP nodes. Each of these nodes is represented on the Network Map by an icon. In addition, there are icons for End Users and interties. The Network Map can become overcrowded with icons. Grouping allows you to represent many network elements with a single icon.

When you organize network elements into groups, you have the flexibility of looking at the network from two levels: a group level or an individual network element level.

What is in a group?

A group can contain any number of network elements: DACS II, DACS II ISX, DACS II AX, IMACS, AAC, Other-type SNMP nodes and any associated end-users. A group can also contain sub-groups.

DND GUI: Grouping (Continued)

Rules for Grouping

There are a few rules that apply to groups:

- A group can consist of one or more elements that do not belong to any other groups.
- A group can contain individual network elements and sub-groups. Each sub-group must belong to the same “parent” group.

For example, in Figure 3-4, Group A₁ and A₂ are sub-groups contained in parent Group A. NE₁ is a network element that belongs to Group A and no other group. A₃ is a sub-group contained in A₂.

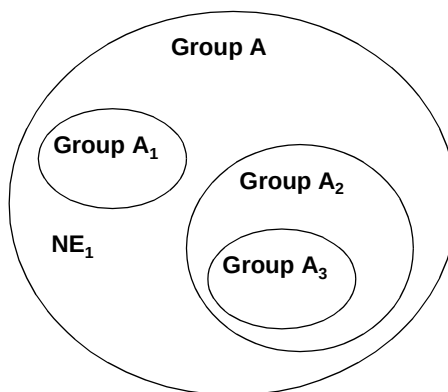


Figure 3-4. DND GUI: Groups and Subgroups

This type of hierarchy is helpful when organizing network elements geographically, as shown in Figure 3-5.

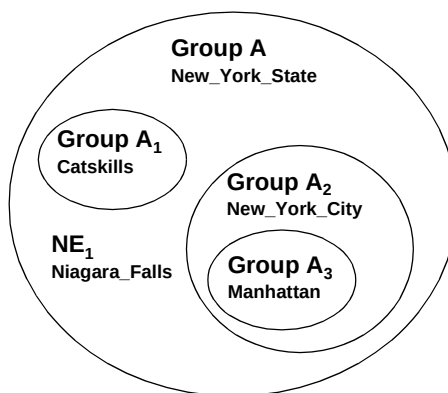


Figure 3-5. DND GUI: New York Example of Groups and Subgroups

(Continued on next page)

DND GUI: Grouping (Continued)

Rules for Grouping (Continued)

- Each sub-group counts as one node. For example, Group A shown in Figure 3-5 contains three nodes: Groups A₁, A₂, and NE₁. A₂ contains one node: A₃.
- A group member cannot be shared between two “parent” groups. In Figure 3-6, Group AB is invalid.

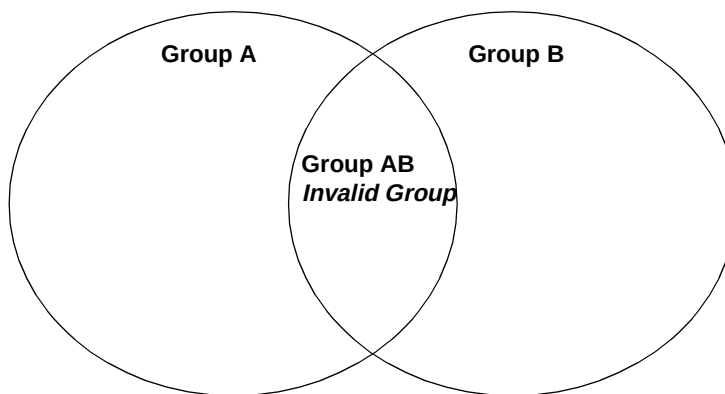


Figure 3-6. DND GUI: Two Parent Groups Not Allowed

- Each sub-group counts as one node in a group.
- An element can be added to an existing group if it belongs to the same parent group.
- An element can be added to an existing group if the element does not already belong to another parent group.
- Newly created groups always appear condensed. For all users, all groups are shown condensed upon initial login.
- If multiple users try to save changes to grouping information, users receive the following warning:

WARNING: You are about to save group information that might conflict with changes made by another user.

It is recommended that a single user makes changes to grouping information, to avoid overwriting information. The last changes saved are the changes that take effect.

DND GUI: Grouping (Continued)

Grouping and Partitioning

Grouping allows you to represent a collection of nodes with a single icon. Partitioning allows you to restrict user access to nodes. If a user is assigned a partition which includes at least one node in a group, the user will see the group icon on the Network Map. The user will only be able to view and administer nodes in the user's partition.

Group Properties Form

To display the Group properties form:

- From a workstation, right-click and hold the mouse button on the group icon to display a pull-down menu, then select **Group properties**.
- From a PC, right-click and release the mouse button on the group icon, then select **Group properties**.

The **Group properties** option allows you to modify the attributes of a group. The Group Properties form displays, as shown in Figure 3-7.

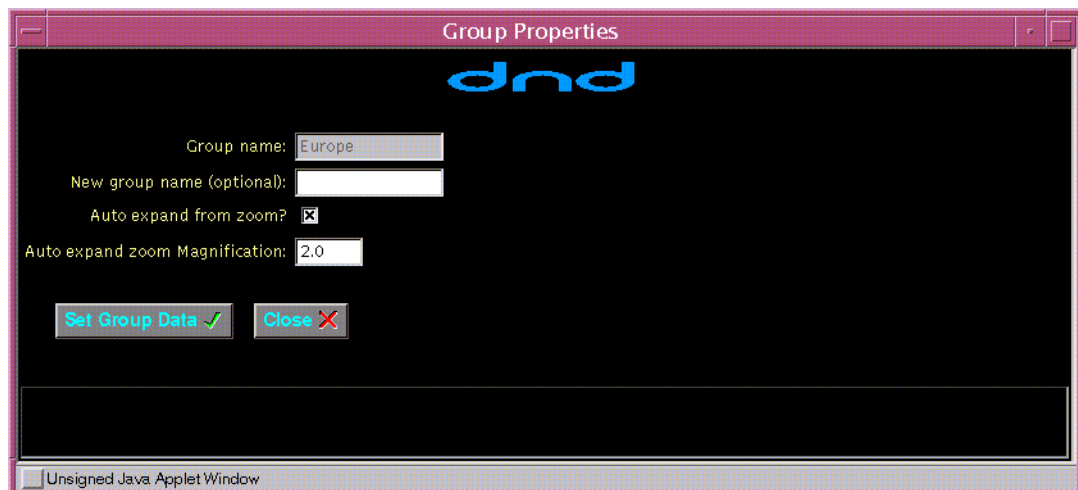


Figure 3-7. DND GUI: Group Properties Form

DND GUI: Grouping (Continued)

Field Descriptions The table below describes the fields and field values on the Group Properties form:

Table 3-13. DND GUI: Group Properties Form Field Descriptions

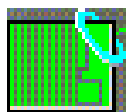
Field Name	Description
Group Name	Displays the name currently assigned to the group. When a group is created, it is automatically assigned a unique name.
New Group Name (optional)	(Text field) To rename a group, enter a name in this field. Spaces are not allowed.
Auto expand from zoom?	(Options field) Check this option if you want the group to automatically expand when a specified magnification level is reached.
Auto expand zoom Magnification	(Text field) Enter the magnification level. For example, enter 2 to specify two times original size.

Modifying Group Properties

If more than one user is modifying group properties at the same time, there is a possibility of potential conflict. After the first user performs a **Save to Server** operation, then the other users are warned that their changes may overwrite the data already saved on the server by another user.

It is recommended that a single user makes changes to grouping information, to avoid overwriting information. The last changes saved are the changes that take effect.

Selecting and Deselecting Nodes when creating groups



IMACS-1

When you select a node to be included in a group, a ring or halo appears in the top right corner of the icon.

To select a node to be included in a group, press Control left-click.

To deselect a selected node, press Control left-click again.

DND GUI: Grouping (Continued)

Grouping Actions Table 3-14 summarizes the grouping actions.

Table 3-14. DND GUI: Grouping Actions

Task	Required Action
To create a group	1. Select nodes to be included in the group one of the following ways: ■ To individually select each node to be included in the group, press Control left-click on each node. ■ To select all nodes, select the Workspace task bar button, then select Select all. ■ To select all nodes that are not in a group, select the Workspace task bar button, then select Select all non-grouped nodes. 2. Select the Workspace task bar button, then select Create group from selection. The new group icon appears in the center of the selected nodes with a white border on it. This border indicates that the new group information has not been saved to the server. 3. To save the changes made, select the Workspace task bar button, then select Save to server.
To add a member to an existing group	1. Press Control left-click on the network element. Drag and drop in group (release the left mouse button) when the circle appears around the target group. 2. To save the changes made, select the Workspace task bar button, then select Save to server.
To de-select all selected nodes when creating groups	Select the Workspace task bar button, then select Unselect All . This removes the halos from the node icons.
To de-select individual nodes when creating groups	Press Control left-click on the node. This removes the halo from the node icon.

Table 3-14. DND GUI: Grouping Actions (Continued)

Task	Required Action
To remove a node from all groups	1. Display pull-down menu from group icon: ■ For PC, right-click and release the mouse button. ■ For workstation, right-click and hold down the mouse button. 2. Select Remove from all groups. 3. To save the changes to the Workspace, select the Workspace task bar button, then select Save to server.
To expand a group	1. Display pull-down menu from group icon: ■ For PC, right-click and release the mouse button. ■ For workstation, right-click and hold down the mouse button. 2. Select Expand.
To expand all groups	Select the Workspace task bar button, then select Expand all groups .

Table 3-14. DND GUI: Grouping Actions (Continued)

Task	Required Action
To condense a group	1. Display pull-down menu from group icon: ■ For PC, right-click and release the mouse button. ■ For workstation, right-click and hold down the mouse button. 2. Select Condense <group name>.
To condense all groups	Select the Workspace task bar button, then select Condense all groups .
To delete a group	1. Display pull-down menu from group icon: ■ For PC, right-click and release the mouse button. ■ For workstation, right-click and hold down the mouse button. 2. Select Delete.  NOTE: The members formerly contained in the deleted group are not members of any group, even if the deleted group was itself a member of a group.

 **NOTE:**
All groups are shown condensed upon initial login.

DND GUI: DND GUI Forms

Overview

In this section, you will be introduced to the form conventions used in DND GUI.

DND GUI Sample Form

Figure 3-8 illustrates the parts of a typical DND GUI form.

The screenshot shows the 'DACS ALARM LOG SEARCH CRITERIA' form. Annotations include:

- New Alarm Indicator** - a new alarm has entered the system (points to a small icon in the top right).
- Alarm Status Indicator (ASI)** - indicates (points to a small icon in the top right).
- Combo Box Field** - click anywhere on field to display a list of choices (points to the 'Site Name' dropdown).
- Text Field** - click in field and type text (points to the 'Report Title' text box).
- Field Box** - group of related fields (points to the 'Date and Time Search Information' section).
- Radio Button Field** - can only select one (points to the 'Which Alarm Type' radio buttons).
- Navigation Buttons** - move through form (points to 'Continue...', 'Restart', and 'Close' buttons).
- Context-Sensitive Help** - describes active field or button (points to a question mark icon).
- Command Response Field** - displays completion/denial/request acknowledgment messages (points to the bottom text area).

The form itself contains the following sections:

- SITE AND FORMAT**: Site Name (dropdown), Available Formats (dropdown), Report Title (text box).
- WHICH?**: Which Alarm Type (radio buttons: All, Facility, Equipment), Which Log (radio buttons: CURRENT, BACKUP).
- Date and Time Search Information**: DATE (Day, Month, Year dropdowns; Range buttons), TIME (Hour, Minute, Second dropdowns; Range buttons).
- NE Date and Time Search Information**: Similar to the above but for a different search scope.
- Alarm Search Information**: Alarm Severity (dropdown), Alarm State (dropdown), Alarm Summary (text box), Alarm Intervention Level (dropdown).
- Buttons**: Continue..., Restart, Close.
- Footer**: Unsigned Java Applet Window.

Figure 3-8. DND GUI: Sample DND GUI Form

DND GUI: Parts of a Form

Alarm Status Indicator (ASI)

The Alarm Status Indicator (ASI) shows the overall alarm status of the network. This will appear at the top of every DND GUI form.

ASIs appear also on Equipment View subassemblies (for a DACS II), indicating the overall alarm status for a particular subassembly. On the Equipment View of individual circuit packs, the ASIs appear as “LEDs.”

**NOTE:**

The ASI does not appear on DND forms when the network map is disabled.

New Alarm Indicator

The New Alarm Indicator is a red arrow which indicates that a new alarm has occurred somewhere in the network. The New Alarm Indicator appears on the top of every DND GUI form, and on the Alarms... button in the DND Task Bar. The New Alarm Indicator can also appear to the upper left of a network element icon or group icon on the Network Map. The New Alarm Indicator can also appear to the upper left of a network element icon in the NE Summary window.

An alarm is no longer considered new when it has been displayed in a report retrieved from the Alarm Summary window. After all new alarms have been viewed in this manner, the red arrow (ASI) disappears until more new alarms occur.

When a New Alarm Indicator appears with a network element icon on either the Network Map or the NE Summary window, you can left-click on it to obtain the alarm log report for all new alarms.

When a New Alarm Indicator appears to the upper left of a group icon on the Network Map, right-click on the arrow and hold the mouse button to obtain a menu containing all elements of that group which contain new alarms. While holding down the mouse button, you can select one of the elements from the menu and obtain an alarm log report for all new alarms.

Box; Field Box

A Field Box is a collection of related fields, i.e., The **Control Options** box, indicated by a thin border drawn around the related fields, usually with a caption in the top left corner.

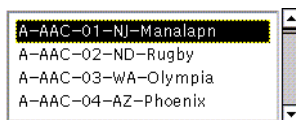
DND GUI: Parts of a Form (Continued)

Combo Box Field

A Combo Box field is a field with a down arrowhead located to the far right. Clicking anywhere on the field will display a pull-down dialog window containing the choices for that field.

The field automatically contains a default value. To change the field entry, select a choice from the pull-down list. Only ONE choice can be selected.

Multiselect Combo Box Field



A Multiselect Combo Box field is a combo box which allows you to select more than one entry. By default, all entries are selected in a multiselect combo box.

For example, a multiselect combo box appears on the NE PROVISIONING form allowing you to select user partitions for a network element.

To select entries in a multiselect combo box:

- To select a single entry, click on it. Previously selected entries are deselected.
- To select subsequent non-consecutive entries, press Control-click on each entry. To deselect an individual entry, press Control-click again.
- To select a single range of entries, click on the first entry, then press Shift-click on the last entry.
- To select a subsequent range of entries, Control-click on the first entry, then drag to the last entry or press Shift-click on the last entry.

You can use the SPACEBAR instead of a mouse click in any of the above actions.

To scroll through the entries in a multiselect combo box, use the scroll bars at the side of the box or the up and down arrow keys on your keyboard.

Type the first character of an entry to display and select the first matching entry from the list of entries.

Text Field

A field where the user can type in text. Select the field to make it active and begin typing desired information into the field.

DND GUI: Parts of a Form (Continued)

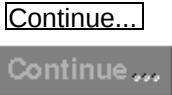
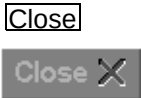
Radio Button Field A Radio Button Field is an on/off button field that appears as a group of checkboxes. Click once to select/turn on a choice (a check appears). You can only select ONE of the choices from a Radio button field.

Checkbox Field A Checkbox Field is an on/off button field. Click once to select/turn on a choice (an "X" appears in the field), and click again to deselect the choice. You can select as many choices as are available in the field.

Navigation Buttons The Navigation buttons are used to navigate through the form, execute commands, and close the form.

Table 3-15 describes the key navigation buttons found on various forms.

Table 3-15. DND GUI: Key Navigation Buttons on GUI Forms

Button	Description
	Continue... moves the user forward through the DND GUI form, retaining all previously selected and entered information on the form. As the form transitions, the following message appears in the Command Response field: <i>"Request sent to server, please stand by"</i> During form transition, pressing a button will have no effect until the transition is fully complete. Field defaults are displayed as you move forward. If mandatory fields have incorrect, insufficient, or no data, a denial message will appear in the Command Response field and forward movement is terminated.
	Close exits the form. If Close is clicked in the middle of an action, all selected and entered data is lost.

(Continued on next page)

DND GUI: Parts of a Form (Continued)

Navigation Buttons, Continued

Table 3-15. DND GUI: Key Navigation Buttons on GUI Forms, Continued

Part	Function
Execute 	When Execute is clicked, the command on the form is sent to DND to perform the action. When processing is completed on the specified action: ■ If data entered is error-free, the new data is entered into the DND and the completion message is displayed in the Command Response field, or... ■ If any of the data is incorrect, a denial message is displayed in the Command Response field. The new status of the system will be updated on the network map.
Back 	Back moves the user one transition stage backward. All previously selected and entered information is retained on the form. Clicking Back continuously will move the user backward one stage at a time until the initial form window appears. Back disappears when the initial stage of the form is reached.
Restart 	Restart returns the form back to its initial state. All previously entered and selected data is lost.
New Action 	New Action appears on Provisioning forms only. It is displayed in the What's Next? box AFTER an Action has been executed. New Action provides a means to perform the next logical Action, retaining all previously selected and entered information on the form.

DND GUI: Parts of a Form (Continued)

Context-Sensitive Help

The Context-Sensitive Help provides a brief description of the active field or button. Help is displayed if it is defined for a particular field or button and the form object (field or button) accepts input focus (is active). Input focus is moved by either clicking on a form object or tabbing through the form objects.

Command Response Field

The **Command Response** field will contain the following sample messages:

- Immediately after clicking **Execute**, the following message will appear in the **Command Response** field:

Request sent to server, please stand by.

Wait for the DND to complete its processing.

- When a command is processed successfully by the DND, the completion message displays in this field.

The command completed successfully

- When the command can not be processed, this field becomes red and displays an appropriate denial message.

You entered incorrect data into the Circuit ID field. The valid length is 1 to 41.

- If a command is being processed in the background, the following message appears in the **Command Response** field:

The command will be executed in the background.

(Continued on next page)

DND GUI: Parts of a Form (Continued)

Command Response Field (Continued)

- If a command times out, usually DND has timed out waiting for a response from the network element. The following message appears in the **Command Response** field:

The browser interface failed waiting for a completion response from the system. The command (job number <n>) may still be in progress and complete later.

If the command does complete later, then a message appears in the **Status** line in the browser:

An unexpected message or a completion message to a previous command which timed out has been received by this browser (job number <n>).

DND GUI: Navigating through Forms

Form Limitations on the PC

On a PC, you may have up to four DND GUI forms displayed on the screen at one time. (The NE Summary window, login screen, or equipment views are not considered forms.) If you have too many forms displayed, this message is displayed:

You have reached a system limit for forms - please close an existing Provisioning or Reports form and try again.

On a workstation, there is no system limit on the number of forms displayed.

The Expansion of Forms

The forms are designed to walk you through each stage of the form, expanding as needed as the information is filled into it. Clicking **Continue...** moves the user to the next stage of the form if the information has been correctly supplied.

The expansion of the form depends on the complexity of the action performed and varies between different forms. For example, creating an NPC requires more stages and intermediate processes than creating an intertie. By the same token, the actions within the same form can require a different number of stages. For instance, creating a DACS requires more stages and intermediate processes than modifying a DACS.

Modifying Information on a Form

Most forms transition through several sections before a complete action is ready to be executed. Transitions are effected by clicking **Continue** if the information already entered is acceptable to the DND. Once **Continue** is clicked, all previously completed fields will appear in read-only mode. These fields cannot be changed unless you click **Back** "n" times until you reach the section of the form you want to edit. Once you have made your changes, click **Continue** "n" times to reach the section of the form where you left off. The information on the form will be preserved.

DND GUI: Navigating through Forms (Continued)

Executing an Action

By entering data through the form, you set up an action to be performed on a DACS (or whichever database(s) is selected). The DND will not allow you to perform an improperly timed or ill-prepared operation, so it incorporates a number of consistency checks after clicking **Execute**, and in some cases, when moving between form stages. Wait for the DND to complete this process before proceeding with another **Action**.

DND will execute the command immediately or in the background (i.e., Audit/Synchronization **Actions**). If the command is executed immediately, the form is frozen until the system returns a response. If the command is executed in the background, then the form is available to perform another **Action**.

DND GUI: Navigating through Forms (Continued)

Form Expansion Example

The following set of screens illustrate the expansion of the *CREATE Action* for the END USER PROVISIONING form.

There are four transition stages to the expansion form. Most forms begin similarly to this one. Press **Continue...** to progress to the next stage.

The screenshot shows a Java Applet window titled "END USER PROVISIONING". The window has a dark blue header bar with the "dnd" logo and an "Alarms" button. Below the header, there is a section for "Action:" with three radio buttons: "CREATE" (selected), "DELETE", and "MODIFY". Below this is a section for "SITE:" with a list of "Element Type:" options: "DACS II" (selected), "DACS II ISX", "DACS II AX", "AAC/IMACS", and "Other". Below the list is a "Site Name:" field with the value "CEF" and a dropdown arrow. At the bottom of the form area are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). Below the buttons is a green question mark icon followed by the text "The action to be performed on the specified End User equipment". The bottom of the window shows a status bar with the text "Unsigned Java Applet Window".

Figure 3-9. DND GUI: Stage 1, Select Action and Element Type

(Continued on next page)

DND GUI: Navigating through Forms (Continued)

Form Expansion

Example, Continued

The number of these stages varies depending on complexity of form and action.

The screenshot shows a Java Applet window titled "END USER PROVISIONING". The interface has a dark background with a blue "dnd" logo and an "Alarms" button in the top right. Below the logo, there are three radio buttons for "Action": "CREATE" (selected), "DELETE", and "MODIFY". A section titled "SITE" contains a list box for "Element Type" with options: "DACS II" (selected), "DACS II ISX", "DACS II AX", "AAC/IMACS", and "Other". Below this is a "Site Name" dropdown menu showing "CEF". The "End User Information" section includes an "End User ID" text field with "CEF-eu" and a "Remarks" text area with "End User equipment for CEF". At the bottom, there are four buttons: "Back", "Continue...", "Restart", and "Close". A green question mark icon and the text "? The name of the End User equipment" are visible above a large empty text area. The bottom status bar reads "Unsigned Java Applet Window".

Figure 3-10. DND GUI: Stage 2, Enter Information

(Continued on next page)

DND GUI: Navigating through Forms (Continued)

Form Expansion Example, Continued

The appearance of the **Execute** button indicates that all of the necessary information is entered, and the DND is ready to process this action.

Figure 3-11. DND GUI: Stage 3, Review Entered Information; Execute Action

(Continued on next page)

DND GUI: Navigating through Forms (Continued)

Form Expansion Example, Continued

Each provisioning form provides New Action navigation button(s) to direct you to the next logical action for the current form. The Report forms do not provide this feature.

The screenshot displays the 'END USER PROVISIONING' window. At the top, the 'dnd' logo is visible next to an 'Alarms' button. Below this, the 'Action:' section has three radio buttons: 'CREATE' (selected), 'DELETE', and 'MODIFY'. The 'SITE' section contains an 'Element Type:' dropdown menu with options: 'DACS II' (selected), 'DACS II ISX', 'DACS II AX', 'AAC/IMACS', and 'Other'. Below this is a 'Site Name:' dropdown menu with 'CEF' selected. The 'End User Information' section includes an 'End User ID:' text field with 'CEF-eu' and a 'Remarks:' text area with 'End User equipment for CEF'. At the bottom of this section are three buttons: 'Back' (with a left arrow), 'Restart' (with a circular arrow), and 'Close' (with an X). The 'WHAT'S NEXT' section contains two buttons: 'New Action' and 'Intertie'. Below this is a status bar with a question mark icon and the text 'Execute the action on this form'. A yellow message box at the bottom states 'The command completed successfully'. The window title bar at the very bottom reads 'Unsigned Java Applet Window'.

Figure 3-12. DND GUI: Stage 4, Action Completed; Perform Next Action

DND GUI: Navigating through Forms (Continued)

Selecting a What's Next Option

The What's Next options help users choose the next logical **Action** after the current **Action** is executed. Most provisioning forms offer a What's Next box displaying special buttons to guide users to the next **Action**, which may or may not be on the same provisioning form.

Most General Tasks will have a What's Next step at the end of its task. These What's Next options will be similar for all the General Tasks in the same chapter.

Displaying Provisioning Forms

All General Tasks in the manual assume you will display a provisioning form by clicking [Provisioning](#) from the DND Task Bar. You can also display provisioning forms by right-clicking on a DACS icon (or the Intertie Bubble for the INTERTIE PROVISIONING form) and selecting the desired provisioning form from the pull-down menu.

If you right-click on the desired icon or intertie bubble, the DND will display some of the provisioning forms for you with the information of the particular NE/intertie. This can save you a few keystrokes and mouse clicks.

DND GUI: Control Options Box on DACS Provisioning Forms

Description

Located on some DACS provisioning forms, the Control Options box is a group of checkbox fields used for specifying the following command information:

- The Reconcile Mode
 - The Scheduling Options Mode
-

The Reconcile Mode

The **Reconcile Mode** determines the database(s) in which to store the new information generated by the current **Action**. The **Reconcile Mode** choices are as follows:

- **DND and DACS** - (default) Updates both the DACS and DND databases
- **DND only** - Updates only the DND (local) database
- **DACS only** - Updates only the DACS (facility) database

Ideally, the DACS and DND databases should be kept consistent, however, there may exist situations where you would only want to change the DACS or DND databases individually. For example, if you are installing the DND at a site where NPCs have already been provisioned, you can perform NPC Provisioning **Actions** (Chapter 8, NPC Provisioning) and specify the **DND only** option, provisioning those NPCs in the DND database as well.

DND GUI: Control Options Box on DACS Provisioning Forms (Continued)

The Scheduling Mode

The **Scheduling Mode** (sometimes called the **Execution Mode**) determines when an **Action** is executed. The Scheduling Mode choices are as follows:

- **Immediate** - (default) Performs the current Action immediately after pressing **Execute**.
- **Schedule** - Performs the current Action at the date and time specified.

When **Schedule** is selected, a Scheduling Options box appears on the form

The screenshot shows a 'Control Options' dialog box. It is divided into three main sections: 'Reconcile', 'Execution Mode', and 'Scheduling Options'.
1. 'Reconcile' section: Contains a 'Mode:' label and three radio buttons: 'DND and DACS' (which is selected), 'DND only', and 'DACS only'.
2. 'Execution Mode' section: Contains a 'Mode:' label and two radio buttons: 'Immediate' and 'Schedule' (which is selected).
3. 'Scheduling Options' section: This section is active and contains:
 - A 'DATE' group with 'Day:' (09), 'Month:' (Apr), and 'Year:' (1998) dropdown menus.
 - A 'TIME' group with 'Hour:' (14) and 'Minute:' (31) dropdown menus.
 - A 'Repeat' group with 'Number of times:' (01), 'Interval:' (00), and 'Scale:' (None) dropdown menus.

Figure 3-13. DND GUI: The Control Options Box: with *SCHEDULE* selected

DND GUI: Control Options Box (Continued)

Scheduling Options Field Descriptions

Table 3-16 describes the fields and values in SCHEDULING OPTIONS:

Table 3-16. DND GUI: Scheduling Options Field Descriptions

Field	Description
DATE	(Combo box) The date of the first scheduled execution. The fields are: Day - day of the Month (1 through 31) Month - month in the Year (Jan through Dec) Year - The year (1990 through 2037) The default is the current date and time.
TIME	(Combo box) The time of the first scheduled execution. The fields are: Hour - The hour on a 24 hour clock (00 through 23) Minute - The minute (00 through 59)
Number of times	(Text field) Two numerical digits. A value specifying the number of times the task is to execute. (default=01). The value 00 obtains indefinitely repeated execution.
Interval	(Text field) The number of Scale units between successive executions of the Action . (01 through 99)
Scale	(Combo box) The type of units in which the Interval is expressed. The choices are: Minutes - increments of Interval minutes Hours - increments of Interval hours Days - increments of Interval days

DND Forms: Starting DND Forms

Starting DND Forms

Refer to tasks GT 2.11U and GT 2.12U.

Display Console Window

Open a DND Console window and keep it open at all times while DND is in operation. If resource problems occur, an error message displays in the DND Console window. To open the Console Window, select *Programs* from the Workspace Menu, then select *Console*.

DND Forms Main Menu

When you start DND Forms, the DND Main Menu displays, as shown in Figure 3-14. The DND Main Menu provides access to the submenus and forms you use to administer DND.

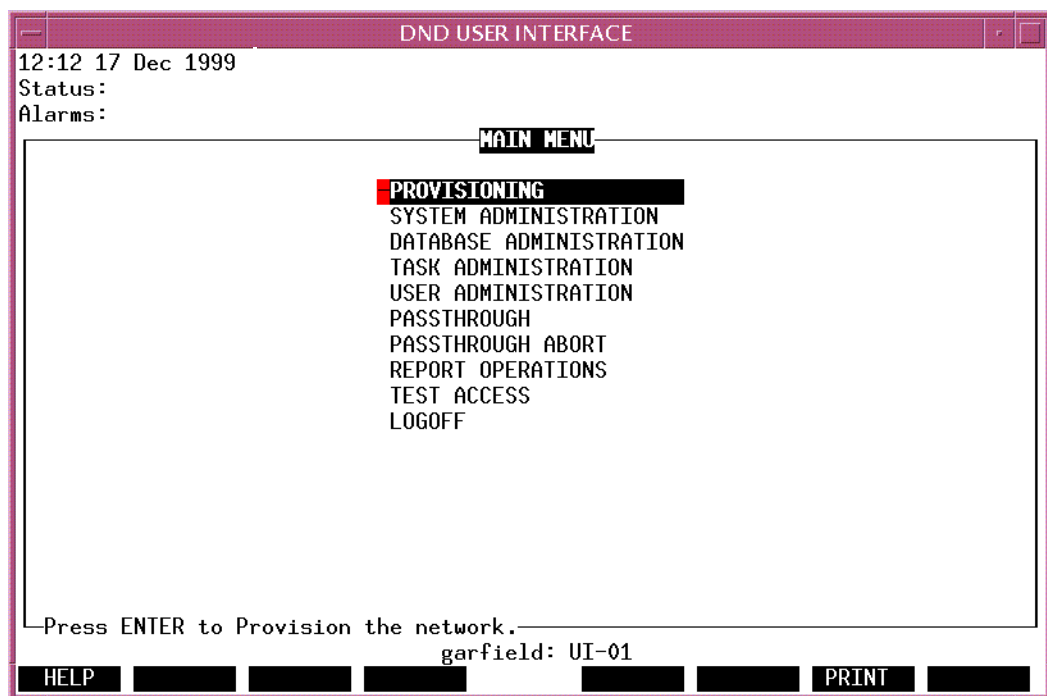


Figure 3-14. DND Forms: DND Main Menu

DND Forms: Navigating DND Menus

Selecting Options from a DND Menu

To select an option from any of the DND menus and submenus, use either of the following methods:

- Use the arrow keys to locate the cursor on your selection, then press **Enter**.
- Type the first letter of your choice. If more than one option begins with the same letter, type the first several letters to match just that option.

For example, since three options begin with the letter P, type PR to select PROVISIONING. Use **Ctrl** + **X** to clear the field of existing entries before making a new entry (does not apply to vt220).

For a complete list of menu control keystrokes, refer to Table 3-17.

Table 3-17. DND Forms: DND Menu Control Keystrokes

Keystrokes	Function
^	Return to the MAIN MENU.
?	Pop-up Help menu for current item.
Enter Return Ctrl + j Ctrl + m	Select an item from the menu.
Ctrl + a	Get an alarm report.
Ctrl + b Pg Dn	Scroll down a page.
Ctrl + d	Scroll menu down a line.
Ctrl + c	Return to the MAIN MENU from a second level menu; log the user off from the MAIN MENU level.

Table 3-17. DND Forms: DND Menu Control Keystrokes (Continued)

Keystrokes	Function
Ctrl + n Ctrl + i ↓	Move to the next item.
Ctrl + f Pg Up	Scroll up a page.
Ctrl + u	Scroll menu up a line.
Ctrl + h	Erase the last character in the pattern matching buffer.
Ctrl + o	Output the screen to the printer.
Ctrl + p ↑	Move to the previous item. <i>When connected to the DND using the X.25 network, pressing Ctrl + p will disconnect you from the network. Use the ↑ key to move to a previous item.</i>
Ctrl + w	Refresh the screen.
Ctrl + x	Clear the pattern matching buffer.
Ctrl + z	Move to the previous pattern match.

**NOTE:**

The pattern matching buffer holds keystrokes as you type them. For example, typing p places “p” in the pattern matching buffer. Ctrl + z moves to the next menu selection beginning with p. Ctrl + x and Ctrl + h clear the p.

DND Forms: The DND Forms

Sample Form

The DND menus lead to the DND forms. On the forms, you enter values in fields and select function keys to complete an operation. Figure 3-15 displays a sample DND Forms screen.

DND USER INTERFACE

Time and Date → 15:18 14 Apr 1999
 Status Line → Status:
 Alarm Line → Alarms:

NPC PROVISIONING

Site Name: **A-CEF-01-NJ-Manalapan** Alarm State: Service State:
 Action: **CREATE** NPC ID:
 Type: **PB100** Number (Hier): (Ext): Alarm Aging: **0000** IW: **AIS-MJ**
 FE Site: TS0: TS0M:
 Lpbk Trans: **N**

Form or Menu Area →

	Short Interval Option	Long Interval Option
Slips	D Inf	D Inf
Degraded Minutes	D Inf	D Inf
Unavailable Seconds	D Inf	D Inf
Errored Seconds	D Inf	D Inf
Sev Errored Seconds	D Inf	D Inf

Message line → Enter the site name. _____

Function keys → **HELP CHOICES NEXTPAGE QUIT** jessica: UI-03 **RECNCILE TOP MENU PRINT EXECUTE**

Host name: UI Session Number

Figure 3-15. DND Forms: Sample DND Form

DND Forms: The DND Forms (Continued)

Parts of the DND Forms

The parts of the DND form are:

- **Time and Date line:** Supplies the current time, date and DND software release number.
- **Status line:** Contains the most recent message about DND status. For example, when you enter passthrough mode on a SNIDER link, a message appears that passthrough is in progress for that DACS. This status line also provides the status of background processes, such as preplanned reconfigurations and report generation. As new status messages occur, old ones are replaced.
- **Alarm line:** Shows unacknowledged DACS alarms from any supported DACS that have occurred since user login. Press **Ctrl** + **a** to display a report of the most recent alarms for the chosen DACS and clear the alarm indication from the alarm line. For more information, see *Chapter 25, Fault Management and Alarm Surveillance*.
- **Form or menu area:** Displays the DND menu or form.
- **Message line:** Displays a one-line text prompt, an error message, or the completion status of the last command you requested.
- **Function keys:** Contains the labels for the function keys in effect for the screen displayed. Also called soft keys.
- **Host name and UI number:** Displays the host name of the workstation and a user interface session number (**UI-00** to **UI-15**). This number is used to identify the user commands and print jobs associated with a user interface session.



NOTE:

The host name and UI number display when the terminal is set to display 25 lines (24 "terminal" lines and one separate line for function keys). If the host name and UI number do not appear on your terminal, check the terminal settings.

DND Forms: Navigating through the DND Forms

Entering Data on DND Forms

To enter data into a field on a DND form, type your entry and press **Enter**.

If the entry is in the correct format for that field, the cursor automatically moves to the next user-entry field.

If the entry is not in the correct format for that field, an error message is displayed with a request to re-enter the information. To remove the contents of the field and start over, type **Ctrl** + **X** (not supported for vt220). Once the information in the field is correct, the cursor advances to the next field.

Tab (does not apply to vt220) can be used to move forward between fields that can be modified.

Insert and Overlay Typing Modes

By default, when the cursor enters a field, INSERT typing mode is in effect. Each keystroke appears to the left and the cursor character with characters to the right are moved to the right. To switch to OVERLAY typing mode, press **Esc** (not available on vt220).

Esc switches between INSERT and OVERLAY typing modes. Whenever you move to a new field, the typing mode automatically switches to INSERT mode.

Mandatory Fields

Some fields require an entry. For example, **NPC ID** in an NPC PROVISIONING form. You are not allowed to continue filling out the form until the field contains a valid value.

DND Forms: Navigating through the DND Forms (Continued)

Form Control Keystrokes

For a complete list of the allowed keystrokes for forms and passthrough, refer to the following two tables.

Table 3-18. DND Forms: Form Control Keystrokes

Keystrokes	Function
Enter Ctrl + m	Enter the information in the field.
Ctrl + a	Get an alarm report.
Ctrl + b	Move down a page in the CHOICES (F2) menu list.
Ctrl + d	Move down one choice in the CHOICES (F2) menu list.
Ctrl + e	Move to a position just to the right of the last input character of the field.
Ctrl + f	Move up a page in the CHOICES (F2) menu list.
Ctrl + g	Delete the word at the cursor.
Ctrl + h	Backspace and erase a character.

Table 3-18. DND Forms: Form Control Keystrokes (Continued)

Keystrokes	Function
Ctrl + i Tab Ctrl + m	Request new line. For single-line fields, move to the next field. For multi-line fields, operation depends on whether insert or overlay editing mode is in effect at the time of the request. For insert mode, a cursor at the beginning of a field or on the last line moves to the next field. Otherwise, the text on the current line, to the cursor's right, moves to the next line. The cursor itself moves to the beginning of the next line. For overlay mode, a cursor at the beginning of a field moves to the next field. If the cursor is on the last line of the field, all data from the cursor position to the end of the line is erased, and then the cursor moves to the next field. Otherwise, all data from the cursor position to the end of the line is erased, and the cursor moves to the beginning of the new line.
Ctrl + k	Clear to the end of the field.
Ctrl + l	Move left to a field.
Ctrl + n	Move to the next field.
Ctrl + o	Output the screen to the printer.
Ctrl + p ↑	Move to the previous field. <i>When connected to the DND using the X.25 network, pressing Ctrl + p will disconnect you from the network. Use the ↑ key to move to a previous item.</i>
Ctrl + r	Move right to a row.
Ctrl + u	Move up one choice in the CHOICES (F2) menu list.
Ctrl + q	Move to the next line of a multiline field.
Ctrl + s	Move to the previous line of a multiline field.

Table 3-18. DND Forms: Form Control Keystrokes (Continued)

Keystrokes	Function
Ctrl + t	Move to the previous word in the field.
Ctrl + v	Delete a character.
Ctrl + w	Refresh the screen.
Ctrl + x	Clear the field.
Ctrl + y	Delete the line at the cursor.
Ctrl + z	Move to the previous listed choice.
Esc	Toggle the editing mode between insert and overlay. In insert mode (the default), new text is inserted at the current character position, while existing text gets moved to the right. In overlay mode, entered text overlays (replaces) existing text in the field. In either mode, the cursor advances one character position as you enter each character.

Table 3-19. DND Forms: Passthrough Control Keystrokes

Keystrokes	Function	Application
Home	Position the cursor at the input line.	Full PASSTHROUGH only
Ctrl + a	Get an alarm report.	All
Ctrl + b	Scroll back a page.	Full only
Ctrl d	Scroll forward a line.	Full only
Ctrl + e	EXIT from passthrough	Full only
Ctrl + f	Scroll forward a page.	Full only
Ctrl + h	Backspace and erase a character.	All

Table 3-19. DND Forms: Passthrough Control Keystrokes (Continued)

Keystrokes	Function	Application
Ctrl + l	Move to the last page of the buffer.	Full only
Ctrl + o	Output the screen to the printer.	All
Ctrl + t	Move to the top of the buffer.	Full only
Ctrl u	Scroll back a line.	Full only

DND Forms: Function Keys

Function Keys on Your Keyboard

The function keys **F1** through **F8** across the top of the DND keyboard perform the DND functions that are shown along the bottom of each DND screen. The functions may change from screen to screen. For a DEC vt220, the function keys are **F7** through **F14**.

**NOTE:**

If the VT220 function keys **F7** through **F14** must be changed to other keys, refer to the System V curses and terminfo section of the SunOS documentation.

**NOTE:**

The function keys are under software control and cannot be programmed by the user. However, some terminals permit user function keys in addition to system function keys. In that case, DND uses the system function keys and users can still program the user function keys. See your terminal user's guide for instructions on how to program the user function keys.

DND Forms: Function Keys (Continued)

Description of Function Keys

Table 3-20 describes the function keys that commonly appear on DND forms.

Table 3-20. DND Forms: Function Keys

Keystrokes	Function
CHOICES	Displays a pop-up window showing the list of choices available for this field.
EXECUTE	Sends the requested operation to the DND for processing. In most cases, a pop-up window is displayed asking you if "you are sure?" about the command you are about to execute.
FIRST	Moves the selection highlighting to the first list item.
HELP	Displays a brief help message for the field where the cursor is located.
LAST	Moves the selection highlighting to the last list item.
NEXT	Moves the selection highlighting to the next list item.
PREVIOUS	Moves the selection highlighting to the previous list item.
PRINT	Prints the current screen.
RECNCILE	Provides the following choices about updating the database after selecting a provisioning Action : <i>Site and Local</i> - Updates DACS and DND database. (default) <i>Site Only</i> - Updates only the DACS database. <i>Local Only</i> - Updates only the DND database.
QUIT	Returns to the previous menu.
TOP MENU	Returns to the MAIN MENU.

Unimplemented Function Keys

If you press a blank function key or If a key that does not apply to the current operation, you may receive the following message:

Unimplemented Function Key.

DND Forms: RECNCILE Function Key

The Reconcile Function

The **RECNCILE** function enables you to choose the database(s) in which to store the new information generated by the current **Action**. The choices are as follows:

- **Site and Local** - (default) Updates both the DACS and DND databases
- **Local only** - Updates only the DND (local) database
- **Site only** - Updates only the DACS (facility) database. This feature allows you to update the DACS only, without using passthrough mode. Fields that would normally effect just the DND database are ignored.

After you choose the database(s) to update, press **EXECUTE**. If you press a key other than **EXECUTE**, the database selection reverts back to the default. Both databases will be updated.

Ideally, the DACS and DND databases should be kept consistent, however, there may be situations when you want to change the DACS or DND databases individually. For example, if you are installing the DND at a site where NPCs have already been provisioned, you can perform NPC Provisioning **Actions** (Chapter 8, NPC Provisioning) and specify the **Local only** option to update only the DND database.

Constraints for Database Selection

There are a few constraints to be aware of when you choose to update the DND database only, the DACS database only, or both:

- If you select a database and go back and change information on the form then press **EXECUTE**, the database selection returns to the default and both the local and site databases will be updated.
- When you use local only mode, you must enter valid data. Since DND does not cross-check every parameter in the form and the DACS does not do any cross-checking for local only mode, it is possible to update the DND database with invalid circuit or provisioning attributes.

For example, if you store an illegal TC value, a later attempt to synchronize the circuit, will fail. To prevent this type of failure, consult your local network engineering staff or refer to the DACS Command and Message Manuals for proper value pairs.

DND Forms: RECNCILE Function Key (Continued)

Database Selection Window Figure 3-16 shows the Database Selection Window. This window appears when you press **RECNCILE**.

DND USER INTERFACE

12:18 17 Dec 1999
Status: The screen is updated to reflect database changes
Alarms:

NPC PROVISIONIN **WHICH DATABASE?**

Site Name: CEF2 Alarm
Action: CREATE NPC ID: npc02111
Type: PB100 Number (Hier): 02111 (Ext): 0171 A
FE Site: TS0: 110111
Lpbk Trans: N Interv. Level: 1 Press 'ENTER' to select item

WHICH DATABASE?
Site and Local
Site Only
Local Only

Short Interval Option Long Interval Option

Slips	D Inf	D Inf
Degraded Minutes	D Inf	D Inf
Unavailable Seconds	D Inf	D Inf
Errored Seconds	D Inf	D Inf
Sev Errored Seconds	D Inf	D Inf

Enter the Intervention Level. garfield: UI-01

HELP PREVIOUS NEXT QUIT FIRST LAST SELECT

Figure 3-16. DND Forms: Database Selection Window

DND Forms: EXECUTE Function Key

The Execute Function

When you press **EXECUTE**, DND may respond in one of the following ways, depending on the **Action**:

- A CONFIRMATION WINDOW displays “ARE YOU SURE?”. You can confirm the action or cancel it.
- An EXECUTION MODE WINDOW displays. This window enables you to schedule the action or execute it immediately. Figure 3-17 shows the Execution Mode Window.
- DND begins making a number of consistency checks. If DND determines that the command cannot succeed, a COMMAND RESPONSE WINDOW displays, and an error message appears at the bottom of the screen. Press **Enter** to clear the COMMAND RESPONSE WINDOW from the screen then correct the error.
- DND displays a COMMAND RESPONSE WINDOW containing information about the command execution. For example, for database audit/synchronization, the COMMAND RESPONSE WINDOW states that the command will be executed in the background.

The Execution Time

When a command is sent to the DACS, the DACS has a set time in which to reply. DND waits a period equal to the time stored in the DACS_TIMEOUT environment variable and then displays a timeout error message in the COMMAND RESPONSE box. The default is three minutes. For more information, refer to “Environmental Variables” in Chapter 2, Getting Started.

DND Forms: EXECUTE Function Key (Continued)

The Confirmation Window

The Confirmation Window prompts you to confirm the action. Choose **YES** to continue or choose **NO** to cancel the action. Figure 3-17 shows the Confirmation Window.

The screenshot shows a terminal window titled "DND USER INTERFACE". The window displays the following text:

```
12:23 17 Dec 1999
Status: CEF2/Success: DELETE ERP 11617-001 11618-001 BW/02 FDX:0
Alarms:
```

Below the status text, there are two main sections. The left section is titled "FRAME ADMINISTRAT" and contains the following text:

```
Action: CHG SITE Old Site Name: CEF2
New Site Name: Atlantic-CEF
```

The right section is titled "ARE YOU SURE?" and contains two options: "NO" (highlighted with a red square) and "YES". Below these options, it says "Press 'ENTER' to select item".

At the bottom of the window, there is a prompt "Enter new site name:" followed by a text input field. Below the input field, the text "garfield: UI-01" is displayed. At the very bottom, there is a row of buttons: "HELP", "PREVIOUS", "NEXT", "QUIT", "FIRST", "LAST", and "SELECT".

Figure 3-17. DND Forms: Confirmation Window

DND Forms: EXECUTE Function Key (Continued)

The Execution Mode Window

The **Execution Mode** determines when an **Action** is executed. The Execution Mode choices are as follows:

- **IMMEDIATE** - (default) Performs the current **Action** immediately after pressing Enter.
- **YES** - Performs the current **Action** immediately after pressing Enter.
- **SCHEDULE** - Performs the current **Action** at the date and time specified. When **SCHEDULE** is selected, a Task Scheduling Window appears on the form.
- **QUIT** - Cancels the current **Action**.
- **NO** - Cancels the current **Action**.

Figure 3-18 shows the Execution Mode Window.

DND USER INTERFACE

12:20 17 Dec 1999
Status: CEF2/Success: ADDLEG ERP 11617-001 11618-001 BW/02 FDX:0 01
Alarms:

NPC PROVISIONIN		EXECUTION MODE	
Site Name: CEF2	Alarm	QUIT	NO
Action: CREATE	NPC ID: npc02111	IMMEDIATE	YES
Type: PB100	Number (Hier): 02111 (Ext): 0171	SCHEDULE	
FE Site:	TS0:	Press "ENTER" to select item	
Lpbk Trans: N	Interv. Level: 1		

	Short Interval Option	Long Interval Option
Slips	D Inf	D Inf
Degraded Minutes	D Inf	D Inf
Unavailable Seconds	D Inf	D Inf
Errored Seconds	D Inf	D Inf
Sev Errored Seconds	D Inf	D Inf

database chosen: site only
Enter the Intervention Level.

garfield: UI-01

HELP PREVIOUS NEXT QUIT FIRST LAST SELECT

Figure 3-18. DND Forms: Execution Mode Window

DND Forms: EXECUTE Function Key (Continued)

The Task Scheduling Window

When **SCHEDULE** is selected, a Task Scheduling Window appears on the form. DND provides the capability of executing the operation in the foreground or in the background. It can be scheduled to run in the background once, repeatedly, or indefinitely at a specified frequency. Figure 3-19 shows the Task Scheduling Window.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows the date and time '12:26 17 Dec 1999', the status 'Status: CEF/Success: DEGROWTH No.: 11619 ID: 11619NPC001', and 'Alarms:'. Below this is a section titled 'NPC PROVISIONING' containing fields for Site Name (Brazil-CEF), Alarm State (NONE), Service State (UEQD), Action (CREATE), NPC ID (npc02111), Type (PB100), Number (Hier) (02111), (Ext) (0171), Alarm Aging (0000), IW (D5D), FE Site, TS0, TSOM, and Lpbk Trans (N). To the right of these fields is a 'TASK SCHEDULING' window with fields for Date (DD MMM YY), Time (E), and Number of Times (01). Below the NPC PROVISIONING section is a 'Short Interval Option' table with four rows: Slips, Degraded Minutes, Unavailable Seconds, and Errored Seconds, each with a 'D Inf' option. At the bottom of the window, there is a message: 'The command is aborted due to external database changes to entity attributes. Enter the long interval slips threshold option. garfield: UI-01'. The bottom of the window features a row of buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Short Interval Option	
Slips	<u>D Inf</u>
Degraded Minutes	<u>D Inf</u>
Unavailable Seconds	<u>D Inf</u>
Errored Seconds	<u>D Inf</u>
Sev Errored Seconds	<u>D Inf</u>

Figure 3-19. DND Forms: Task Scheduling Window

DND Forms: EXECUTE Function Key (Continued)

Task Scheduling Window Field Descriptions

Table 3-21 describes the fields and values for the Task Scheduling Window.

Table 3-21. DND Forms: Scheduling Options Field Descriptions

Field	Description
DATE	(Combo box) The date of the first scheduled execution. The fields are: Day - day of the Month (1 through 31) Month - month in the Year (Jan through Dec) Year - The year (1990 through 2037) The default is the current date and time.
TIME	(Combo box) The time of the first scheduled execution. The fields are: Hour - The hour on a 24 hour clock (00 through 23) Minute - The minute (00 through 59)
Number of times	(Text field) Two numerical digits. A value specifying the number of times the task is to execute. (default=01). The value 00 obtains indefinitely repeated execution.
Interval	(Text field) The number of Scale units between successive executions of the Action . (01 through 99)
Scale	(Combo box) The type of units in which the Interval is expressed. The choices are: Minutes - increments of Interval minutes Hours - increments of Interval hours Days - increments of Interval days

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Background

Purpose

The purpose of this chapter is to introduce the user to the system administration capabilities available from DND.

To use the system administration options:

- From the DND GUI interface, select the options from the Administration section of the Provisioning menu
 - From the DND Forms interface, select menu options from the SYSTEM ADMINISTRATION menu.
-

Objectives

This chapter provides background information to help you perform the following:

1. Name the DND System
 2. Administer printers
 3. Set the Date and Time
 4. Synchronize the Frame Date/Time with DND
 5. Shutdown and reboot DND
 6. Administer login, X.25, and SNIDER ports (DND Forms Interface only).
-

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Enabling a Printer	GT 4.1G
■ Disabling a Printer	GT 4.2G
■ Displaying Print Jobs Queued	GT 4.3G
■ Removing Prints Jobs Queued	GT 4.4G
■ Printing/Stop Printing Outputter Frame Alarms	GT 4.5G
■ Shutting Down DND	GT 4.6G
■ Setting the Date and Time	GT 4.7G
■ Synchronizing Frame Date & Time	GT 4.8G
-

(Continued on next page)

Background (Continued)

Related Tasks (Continued)

DND Forms:

■ Enabling a Login Port	GT 4.1U
■ Disabling a Login Port	GT 4.2U
■ Placing an X.25 Line in Service	GT 4.3U
■ Removing a Line From Service	GT 4.4U
■ Enabling a Printer	GT 4.5U
■ Disabling a Printer	GT 4.6U
■ Displaying Print Jobs Queued	GT 4.7U
■ Removing Prints Jobs Queued	GT 4.8U
■ Printing/Stop Printing Output or Frame Alarms	GT 4.9U
■ Shutting Down DND	GT 4.10U
■ Setting the Date and Time	GT 4.11U
■ Synchronizing Frame Date & Time	GT 4.12U
-

Related information

For related information refer to the:

- *DACS II and DACS II ISX Operation and Maintenance Manuals.*
-

DND Forms: System Administration Menu

Overview

The SYSTEM ADMINISTRATION menu provides the options used to change and monitor DND system parameters. When you select SYSTEM ADMINISTRATION from the MAIN MENU, the menu is displayed, as shown in Figure 4-1.

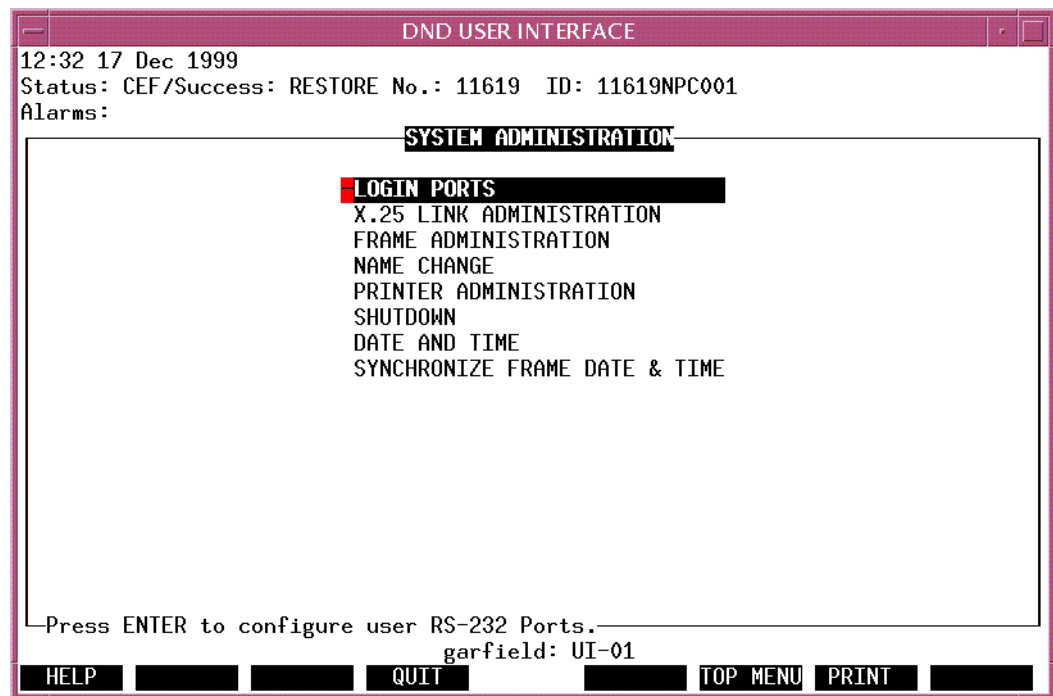


Figure 4-1. DND Forms: SYSTEM ADMINISTRATION Menu

DND Forms: System Administration Menu (Continued)

Menu Options

The SYSTEM ADMINISTRATION menu lists these options:

- **LOGIN PORTS** - allows you to enable or disable an asynchronous port used by a terminal operator to access the DND computer
- **X.25 LINK ADMINISTRATION** - allows you to restore or remove service from a synchronous line to a DACS using X.25 protocol
- **FRAME ADMINISTRATION** - allows you to identify each DACS that communicates with DND. FRAME ADMINISTRATION also enables you to remove service and restore service to the DACS. FRAME ADMINISTRATION is covered in *Chapter 5, NE Provisioning*.

Before selecting FRAME ADMINISTRATION, make sure that the DACS has been configured as described in *Chapter 2, Getting Started*.

- **NAME CHANGE** - enables you to change the name given to your DND system. This name appears on backups.
 - **PRINTER ADMINISTRATION** - provides the actions needed to manage print jobs and enable and disable printers.
 - **SHUTDOWN** - provides the capability to shutdown the DND computer
 - **DATE AND TIME** - Allows you to reset the date and time.
 - **SYNCHRONIZE FRAME DATE & TIME** - enables you to change the date and time on a DACS to the time and date on the DND.
-

DND Forms: Login Ports

Purpose

LOGIN PORTS allows a system administrator to enable, disable, or set the line speed for asynchronous login ports used by terminal operators to access DND. A login port must be restored before an operator can log in on it. Restoring the port places a login prompt on the terminal.

If you have an optional 32 port SEU in addition to the standard 16 port SEU, then only the 16 port SEU is available for login ports.

Sample Screen

When you select LOGIN PORTS from the SYSTEM ADMINISTRATION menu, the LOGIN PORTS ADMINISTRATION form is displayed, as shown in the Figure 4-2.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following content:

```
11:58 23 Oct 1998
Status:
Alarms:
LOGIN PORT ADMINISTRATION

Action: RESTORE
Port: 1 Speed: 1200 Status: IS

The command completed successfully
Enter the Port number
snoopy: UI-00
HELP CHOICES QUIT TOP MENU PRINT EXECUTE
```

Figure 4-2. DND Forms: LOGIN PORT ADMINISTRATION Form

DND Forms: Login Ports (Continued)

Displaying Port Status

To display the current status of all asynchronous ports, press **CHOICES** from the **Port** field on the LOGIN PORT ADMINISTRATION form.

A pop-up window displays the available ports, their **Status**, the user log-in, if there is one, and the **Speed**.

If you have a port configured as a SNIDER link to a DACS, a * appears before the port number and the Site Name is listed after the port number. You may not enable a SNIDER link as a login port. An example is shown in Figure 4-3.

DND USER INTERFACE

12:42 23 Oct 1998
Status:
Alarms:

LOGIN PORT STATUS

01	IS	1200
02	00S	1200
03	00S	1200
04	00S	1200
05	00S	1200
06	00S	1200
07	00S	1200
08	00S	1200
09	00S	1200
10	00S	1200
11	00S	1200
12	00S	1200
13	00S	1200
14	00S	1200
15	00S	1200
*16	INUSE DACSEast-SNIDER	9600

Action:_____
Port:_____

Enter the Port n Press 'ENTER' to select item
snoopy: UI-00

HELP PREVIOUS NEXT QUIT FIRST LAST SELECT

Figure 4-3. LOGIN PORT STATUS Pop-Up Window

DND Forms: Login Ports (Continued)

Field Descriptions The field values for the LOGIN PORTS ADMINISTRATION form are described in Table 4-1.

Table 4-1. DND Forms: Field Descriptions for the LOGIN PORTS ADMINISTRATION Form

Field	Description
Action	Mandatory. The values are: <i>RESTORE</i> Enable the port. <i>REMOVE</i> Disable the port.
Port	Mandatory. Numeric, 1 through the number of asynchronous lines up to 16.  CAUTION: <i>You can REMOVE an INUSE port by a remote terminal, but the user will be logged off. You cannot REMOVE an INUSE port by a DACS.</i>
Speed	Mandatory. Numeric. The baud rate to be in effect. The possible values are 1200, 2400, 4800, and 9600.
Status	Not accessible to the user. ■ <i>NULL</i> - The port has not yet been restored in this database.  CAUTION: <i>INUSEThe port is currently in use. You can display the login by pressing CHOICES when the cursor is in Port.S. You may not enable it as a login port.</i>  CAUTION: <i>You can REMOVE an INUSE port by a remote terminal, but the user will be logged off. You cannot REMOVE an INUSE port by a DACS.</i>

Table 4-1. DND Forms: Field Descriptions for the LOGIN PORTS ADMINISTRATION Form (Continued)

Field	Description
Status , Continued	■ <i>IS</i> - The port is ready for remote login and may not be preempted by a DACS. To disable it, enter a <i>REMOVE Action</i>. ■ <i>OOS</i> - The port is no longer available for remote login without restoral, but may be utilized by a DACS. To enable it, enter a <i>RESTORE Action</i>.

DND Forms: X.25 Link Administration

Purpose

Select the X.25 LINK ADMINISTRATION option from the SYSTEM ADMINISTRATION MENU to enable or disable an X.25 link. An X.25 link is used to access a synchronous line for communication with a DACS using X.25 protocol.

Sample Screen

When you select X.25 LINK ADMINISTRATION from the SYSTEM ADMINISTRATION menu, the X.25 LINK ADMINISTRATION form is displayed, as shown in Figure 4-4.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following text:

```
12:46 23 Oct 1998
Status:
Alarms:
X.25 LINK ADMINISTRATION
Action: REMOVE      Line No.: 1      Status: 00S
Connection Type: PDN
The command completed successfully
Enter the connection type for this link
snoopy: UI-00
HELP CHOICES      QUIT      TOP MENU PRINT EXECUTE
```

Figure 4-4. DND Forms: X.25 LINK ADMINISTRATION Form

DND Forms: X.25 Link Administration (Continued)

Field Descriptions The field values for the X.25 LINK ADMINISTRATION form are described in Table 4-2.

Table 4-2. DND Forms: Field Descriptions for the X.25 LINK ADMINISTRATION Form

Field	Description
Action	Mandatory. The values are: ■ RESTORE - Places the X.25 link in service. The Status must be <i>OOS</i>; otherwise, the Action is denied and a message is displayed: Link already in service ■ REMOVE - Removes the X.25 link from service. This Action is allowed whether the Status indicates <i>IS</i>, in service, or <i>OOS</i>, out of service. A rejection with the message: There are active circuits on this link. Link not removed. refers to extant packet-level connections to the DACS. To remove the link, you must first place the DACS sites in an <i>OOS</i> Site Status through FRAME ADMINISTRATION.
Line No.	Mandatory, one numeric character. The physical line number of the link supporting the connection. Entries are one through four.
Status	The status of the link, not user-accessible. <i>IS</i> In service. The link can support switched virtual circuits (SVCs). A DACS can be placed in service on this link. <i>OOS</i> Out of service. A DACS cannot be placed in service on this link.

Table 4-2. DND Forms: Field Descriptions for the X.25 LINK ADMINISTRATION Form (Continued)

Field	Description
Connection Type	Not accessible through DND. The information shown reflects how the links were set up during installation. If X.25 links have been configured during installation, this field assumes the appropriate value. If X.25 links have not been configured, then this field is blank, and any attempt to <i>RESTORE</i> a line is rejected. ■ <i>PDN</i> - Packet data network. The network acts as DCE for the connection, and DND acts as DTE. The X.25 link must be connected to a PDN. Up to 250 virtual circuits are supported. ■ <i>DIRECT</i> - DND acts as DCE for the connection. The X.25 link must be connected directly to an X.25 port of the DACS II ISX frame through a synchronous modem eliminator. At this time, DND does not support <i>DIRECT</i> connections.

System Name Change

Purpose

This feature is used to change the name of the DND system. The DND system name appears on backups.

The fields on the SYSTEM NAME CHANGE form can be retrieved from the SNMP MIB-II system group when the DND is configured with the SNMP Northbound option.

DND GUI: Sample Screen

The SYSTEM NAME CHANGE form is shown in Figure 4-5.

The screenshot shows a Java applet window titled "SYSTEM NAME CHANGE". The window has a dark background with a blue "dnd" logo in the top left. To the right of the logo is a button labeled "Alarms" with a downward arrow. Below the logo, the text "System Description:" is followed by a text box containing "DACS II Network Director v3.0.1". Underneath this is a section titled "System Information" with a minus sign. This section contains three labels and text boxes: "System Name:" with "DND", "System Location:" with "Paris", and "System Contact:" with an empty box. At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). Below the buttons is a green question mark icon followed by the text "The administrative name of this system". At the very bottom of the window, a status bar reads "Unsigned Java Applet Window".

Figure 4-5. DND GUI: SYSTEM NAME CHANGE Form

System Name Change (Continued)

DND GUI: Field Descriptions

The field values for the SYSTEM NAME CHANGE form are described in Table 4-3.

Table 4-3. DND GUI: Field Descriptions for the SYSTEM NAME CHANGE Form

Field	Description
System Description	(Read only field) Indicates the DND system's release number.
System Name	Mandatory. Up to 23 characters. This field automatically displays the current system name. Highlight name and type in the new system name.
System Location	Optional. Up to 47 characters. Enter the location where the system resides.
System Contact	Optional. Up to 31 characters. Enter a contact name for the system.

System Name Change (Continued)

DND Forms: Sample Screen

Select NAME CHANGE from the SYSTEM ADMINISTRATION menu to change the name of the DND system. The SYSTEM NAME CHANGE form is shown in Figure 4-6.

The screenshot shows a terminal window titled "DND USER INTERFACE". At the top left, it displays the time "13:00 17 Dec 1999", the status "Status:", and alarms "Alarms: CEF CEF2". The main title of the form is "SYSTEM NAME CHANGE". Below this, it shows "Current System Name: DND" and "New System Name: Compnay Z Network". At the bottom of the form area, it says "Enter 23 character new system name." and "garfield: UI-01". The bottom of the window has a menu bar with buttons: "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 4-6. DND Forms: SYSTEM NAME CHANGE Form

DND Forms: Field Descriptions

Field values for the SYSTEM NAME CHANGE form are described in Table 4-4.

Table 4-4. DND Forms: Field Descriptions for the SYSTEM NAME CHANGE Form

Field	Description
Current System Name	Mandatory. This field automatically displays the current system name.
New System Name	Mandatory. Can contain up to 23 characters.

Printer Administration

Purpose

DND provides **Actions** that allow the system administrator to:

- Enable or disable the printer
- List and cancel print jobs
- Allow printer logging of the Alarm Messages or DACS Messages from one or more DACS.



NOTE:

From the DND Forms interface, users can list or cancel their own print jobs using selections from the TASK ADMINISTRATION menu. From the DND GUI, users can perform all printer administration actions from the PRINTER ADMINISTRATION form.

What Can Be Printed from the DND Forms interface

From the DND Forms interface, DND supports printing of screens, DACS output, and reports. Printing can be done from the REPORTS selections, and by pressing the **PRINT** key for screens that offer the option of screen printing.

Printer Administration (Continued)

DND GUI: Sample Screen

When you select PRINTER ADMINISTRATION from the **Provisioning** menu, the PRINTER ADMINISTRATION form is displayed. A sample of the PRINTER ADMINISTRATION form is shown in Figure 4-7.



Figure 4-7. DND GUI: PRINTER ADMINISTRATION Form

Printer Administration (Continued)

DND GUI: Field Descriptions

The field values for the PRINTER ADMINISTRATION form are described in Table 4-5.

Table 4-5. DND GUI: Field Descriptions for the PRINTER ADMINISTRATION Form

Field	Description
Action	Mandatory. Enter the action to be performed with regard to the printer job. ■ <i>ENABLE</i> - Enables the printer. ■ <i>DISABLE</i> - Disables the printer. ■ <i>LIST</i> - Displays the printer queue. ■ <i>CANCEL</i> - Cancels any printer job. ■ <i>LOGALL</i> - Logs the DACS output messages to the printer. ■ <i>LOGALARMS</i> - Logs the DACS alarm messages to the printer. ■ <i>STOPLOGGING</i> - Cancels message logging for the DACS.
Printer Name	(Combo box) The list of available printers.
Printer Status	The status of the printer: <i>ENABLED</i> or <i>DISABLED</i> .

Printer Administration (Continued)

DND Forms: Sample Screen

When you select PRINTER ADMINISTRATION from the SYSTEM ADMINISTRATION menu, the PRINTER MANAGEMENT form is displayed. A sample of the PRINTER MANAGEMENT form is shown in Figure 4-8.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following content:

```
14:44 17 Dec 1999
Status:
Alarms:

PRINTER MANAGEMENT

Action: ENABLE
Printer Name: CONSOLE PRINTER

Printer Status: DISABLED

Enter the printer name.
garfield: UI-01

HELP CHOICES QUIT TOP MENU PRINT EXECUTE
```

Figure 4-8. DND Forms: PRINTER MANAGEMENT Form

Printer Administration (Continued)

DND Forms: Field Descriptions

The field values for the PRINTER MANAGEMENT form are described in Table 4-6.

Table 4-6. DND Forms: Field Descriptions for the PRINTER MANAGEMENT Form

Field	Description
Action	Mandatory. Enter the action to be performed with regard to the printer job. <i>ENABLE</i> Enables the printer. <i>DISABLE</i> Disables the printer. <i>LIST</i> Displays the printer queue. <i>CANCEL</i> Cancels any printer job. <i>LOGALL</i> Logs the DACS output messages to the printer. <i>LOGALARMS</i> Logs the DACS alarm messages to the printer. <i>STOPLOGGING</i> Cancels message logging for the DACS.
Printer Name	Press CHOICES when the cursor is in the Printer field to display the available printers. Use the display to select a printer.
Printer Status	The status of the printer.

Shutdown

Purpose

Use the SHUTDOWN option to shutdown or restart the DND computer.



CAUTION:

*Execute SHUTDOWN before removing power from DND.
Important files may be damaged or corrupted.*

DND GUI: Sample Form

Figure 4-9 shows the DND GUI System Shutdown form.

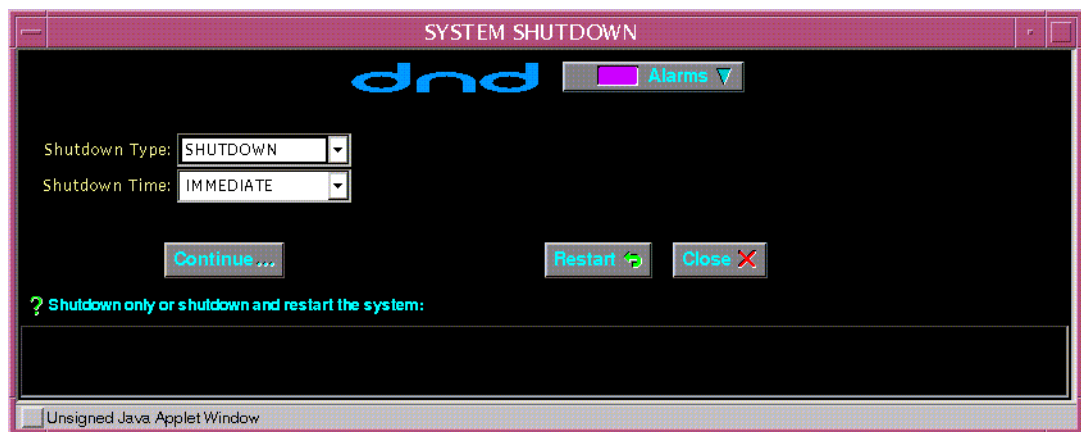


Figure 4-9. DND GUI: System Shutdown

Shutdown (Continued)

DND Forms: Sample Form

Figure 4-10 shows the DND Forms System Shutdown form.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows the date and time '14:54 17 Dec 1999' and version information 'DND R3.0.1 / DND Forms R8.0.1'. Below this, the status is 'CEF/Success: ACTIVATE ERP 11626-E1 11627-E1 BW/01 FDX:0' and 'Alarms:'. The main area is divided into two columns. The left column, titled 'SYSTEM ADMINISTRATION', lists 'LOGIN PORTS', 'X.25 LINK ADMINISTRATION', 'FRAME ADMINISTRATION', 'NAME CHANGE', and 'PRINTER ADMINISTRATION'. The right column, titled 'SHUTDOWN TIME', shows 'QUIT', 'IMMEDIATE' (highlighted in red), and '1 MINUTE'. A 'Scroll for additional items' label is positioned between the two columns. Below the list, the 'SHUTDOWN' option is highlighted. At the bottom of the main area, it says 'Press ENTER to Shut Down the DND System.' and 'garfield: UI-01'. The footer contains a row of buttons: 'HELP', 'PREVIOUS', 'NEXT', 'QUIT', 'FIRST', 'LAST', and 'SELECT'.

Figure 4-10. DND Forms: System Shutdown

Shutdown (Continued)

Shutdown Type and Time

To shutdown or restore DND, you specify two options: Shutdown Type and Shutdown Time.

- SHUTDOWN TYPE enables you to specify the type or shutdown:

QUIT	(Forms only) Do not execute a shutdown.
SHUTDOWN	Shut down the computer and DND. This is done as preparation for powering down the computer.
REBOOT	Shut down and restart the computer and the DND.
DND REBOOT	Shut down and only restart DND. The workstation continues to run; only the DND software restarts.
DND UPDATE	Only shut down DND, update the port information in the DND database and restart. This procedure compares the hardware configuration to the DND database and, if required, modifies to DND database. The /etc/passwd is updated from the DND database.
NO	(Forms only) Do not execute a shutdown.

- SHUTDOWN TIME enables you to specify when to begin the shutdown:

QUIT	(Forms only) Do not execute a shutdown.
IMMEDIATE	Shut down immediately.
1 MINUTE	Shut down after 1 minute.
5 MINUTES	Shut down after 5 minutes.
10 MINUTES	Shut down after 10 minutes.
NO	(Forms only) Do not execute a shutdown.

After DND Shuts Down

A number of messages will be displayed as DND shuts down. When the software has finished shutting down, follow the established policy regarding turning off the hardware or leaving it on.

Date and Time

Purpose

Occasionally, it may be necessary to reset the DND computer date and time. Be sure to notify the users that you are going to reset the date and time.

**NOTE:**

Setting the Date and Time *must* be done from the console.

Resetting the DND date and time may affect time-dependent activities, such as the execution of scheduled tasks, and timeouts on commands to a DACS, as well as on terminating passthrough sessions, or other tasks. We suggest that you shut down and restart immediately after resetting the date and time, so that all time parameters also will be reset.

DND GUI: Sample Form

Figure 4-11 shows the DND GUI System Date/Time form. Select an entry for each field.

Figure 4-11. DND GUI: System Date/Time Form

Date and Time (Continued)

DND Forms: Sample Form

When you select DATE AND TIME from the SYSTEM ADMINISTRATION menu, the DATE AND TIME ADMINISTRATION form is displayed, as shown in Figure 4-12.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following text:

```
14:59 17 Dec 1999
Status: CEF/Success: ACTIVATE ERP 11626-E1 11627-E1 BW/01 FDX:0
Alarms:
```

Below this text is a box titled "TIME and DATE ADMINISTRATION". Inside the box, the following fields are displayed:

- Hour: 03
- Minute: 15
- Day: 09
- Month: Dec
- Year: 2001

Below the box, there is a prompt: "Enter the desired hour [0 - 23]".

At the bottom of the window, the text "garfield: UI-01" is displayed. Below this text is a row of buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 4-12. DND Forms: TIME AND DATE ADMINISTRATION Form

Date and Time (Continued)

DND Forms: Field Descriptions

The field values for the TIME AND DATE ADMINISTRATION form are described in Table 4-7.

Table 4-7. DND Forms: Field Descriptions for the TIME AND DATE ADMINISTRATION Form

Field	Description
Hour	Valid entries are 0-23. For example, 12 am is hour 0, 1 pm is hour 13. Leading zeroes are not required. However, if a leading zero is omitted, you must press Enter to move to the next field.
Minute	Valid entries are 00-59.
Day	Valid entries are 1-31.
Month	The first three letters of the name of the month. For example, Jan, Feb, Mar, ... Dec. Upper or lower case letters may be used.
Year	The four digits of the year. Valid entries are 1990 to 2037.

Synchronize Frame Date & Time

Purpose

Select the SYNCHRONIZE FRAME DATE & TIME option to synchronize the date and time on a DACS with the date and time on the DND computer.

DND GUI: Sample Form

Figure 4-13 shows the DND GUI form for Synchronize Frame Date & Time. To synchronize the Date and Time on a DACS with DND, select the Site Name, click **Continue**, then click **Execute**.

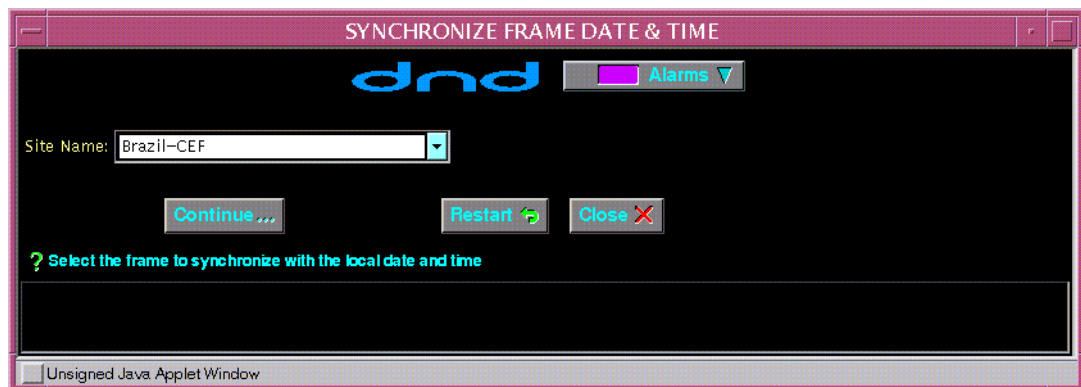


Figure 4-13. DND GUI: Synchronize Frame Date & Time

Synchronize Frame Date & Time (Continued)

DND Forms: Sample Form

Figure 4-14 shows the DND Forms *SYNCHRONIZE FRAME DATE & TIME* option. Select *SYNCHRONIZE FRAME DATE AND TIME* from the SYSTEM ADMINISTRATION menu. Select the DACS to synchronize in the WHICH DACS? pop-up window.

DND USER INTERFACE

15:00 17 Dec 1999 DND R3.0.1 / DND Forms R8.0.1
Status: CEF/Success: ACTIVATE ERP 11626-E1 11627-E1 BW/01 FDX:0
Alarms:

SYSTEM ADMINISTRATION

- LOGIN PORTS
- X.25 LINK ADMINISTRATION
- FRAME ADMINISTRATION
- NAME CHANGE
- PRINTER ADMINISTRATION
- SHUTDOWN
- DATE AND TIME
- SYNCHRONIZE FRAME DATE AND TIME**

WHICH DACS?

- Brazil-CEF**
- CEF
- CEF-3
- CEF2
- England-ISX
- Japan-CEF
- WashingtonDC-CEF

Press 'ENTER' to select item

Press ENTER to Synchronize frame Date and Time to local time.

garfield: UI-01

HELP PREVIOUS NEXT QUIT FIRST LAST SELECT

Figure 4-14. DND Forms: Synchronize Frame Date & Time

Synchronize Frame Date & Time (Continued)

Possible Synchronization Results

When you attempt to synchronize the date and time on the DACS with DND, the command may complete successfully or fail.

The command is successful if the DACS time is set to within one second of the DND time. A message, *The command completed successfully*, means that the time has been successfully reset.

A failure can happen when the DACS is too busy to respond to DND within one second of the request. For example, a DACS may be too busy during backup-memory transfers, error recovery, and other maintenance conditions. If a failure occurs, you will get a message, *Frame time is within X seconds of local time*. The time has been reset, but not to within one second.

A failure can also happen if DND cannot complete the synchronization. In that case, an explanation of denial is displayed. If the time synchronization fails, try to reset again.

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Background

Introduction

The DACS Network can include several types of network elements (NEs): DACS II, DACS II ISX, DACS II AX, IMACS, AAC, and Other-type SNMP nodes. You must identify each network element that will be managed by DND. The information you enter is used to set up communications between the network element and DND.

Menu Options

To identify a network element:

- From the DND GUI interface, select the Provisioning button from the DND task bar, then select **NE Provisioning**.
- From the DND Forms interface, select SYSTEM ADMINISTRATION from the DND Main Menu, then select FRAME ADMINISTRATION.

From the DND GUI, you can provision any of the supported types of network elements. From the DND Forms interface, you can only provision DACS II and DACS II ISX elements.

Objectives

This chapter provides background information to help you perform the following:

1. Create an SNMP-based Network Element, including the DACS II AX, IMACS, AAC, and Other-type SNMP node.
 2. Restore a DACS II AX, AAC, and IMACS
 3. Modify a DACS II AX, AAC, and IMACS
 4. Create a DACS (with X.25, SNIDER, or TCP/IP links)
 5. Restore a DACS
 6. Restore a backup link for a DACS (for X.25 only)
 7. Modify a DACS
 8. Remove a DACS
 9. Change the site name of an NE
 10. Delete an NE.
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

- Configuring the DACS II AX for Communicating with the DND GT 2.3G
- Configuring the AAC/IMACS for Communicating with the DND GT 2.4G
- Creating an SNMP-based Network Element GT 5.1G
- Creating a DACS, X.25 Link GT 5.2G
- Creating a DACS, SNIDER Link GT 5.3G
- Creating a DACS, TCP/IP Link GT 5.4G
- Restoring a DACS GT 5.5G
- Restoring a Backup Link (X.25 Only) GT 5.6G
- Modifying a DACS GT 5.7G
- Changing the Name of a DACS GT 5.8G
- Removing a DACS GT 5.9G
- Deleting a DACS GT 5.10G

DND Forms:

- Creating a DACS, X.25 Link GT 5.1U
- Creating a DACS, SNIDER Link GT 5.2U
- Restoring a DACS GT 5.3U
- Restoring an X.25 Backup Link GT 5.4U
- Modifying a DACS GT 5.5U
- Removing a DACS GT 5.6U
- Deleting a DACS GT 5.7U

Related information

For related information, see:

- *DACS II Network Director Software Release Description*
- *DACS II and DACS II ISX Operation and Maintenance Manuals*
- *DACS II AX 4/11 User's Guide*
- *IMACS and AAC Reference Guides*

NE Provisioning Actions

Summary of Actions

Both the DND GUI NE PROVISIONING form and the DND Forms FRAME ADMINISTRATION form provides these actions:

- *CREATE* - use to initially create the network element in the DND database. Through the CREATE action, you identify the communications parameters that enable DND to communicate with the NE.
- *RESTORE* - tells the DND to start communications with the network element, query its type and release information for validity, and begin monitoring the communications path for messages.
- *REMOVE* - tells DND to disable communications.
- *MODIFY* - modifies the attributes and communications parameters for the network element, most of which require the element to be removed from service.
- *CHGSITE* - enables you to change the name of the element.
- *DELETE* - removes the element from the DND database.

All of these actions are available for all NE types.

DND GUI: SNMP Nodes

SNMP Nodes

DND can manage up to 256 SNMP nodes.

SNMP is Simple Network Management Protocol. SNMP is a standard network protocol that is used primarily to manage TCP/IP networks. DND communicates with network elements on the TCP/IP network using SNMP.

DND processes alarms and provides telnet access to these SNMP devices: the DACS II AX 4/11, ACCULINK Access Controller (AAC), and Integrated Multiple Access Communications Server (IMACS). In addition, DND does alarm handling for other SNMP devices.

Communications Protocol Information

In order for DND to communicate with the SNMP node, set-up is required on both ends: DND and at the SNMP node.

There are three critical pieces of information:

- **IP Address for SNMP node:** You must supply DND with the actual IP address which identifies the SNMP node to DND.
- **IP Address for DND:** You must supply the actual IP address of DND to the SNMP node so that SNMP traps can be sent to DND.
- **Community:** The community string is the password used to access the SNMP node. DND must use the community string that is set in the SNMP node.

For the setup procedure for the AAC/IMACS, refer to GT 2.3G. For the setup procedure for the the DACS II AX, refer to GT 2.4G. These procedures do not apply to Other-type SNMP nodes. No procedure can be supplied for Other-type SNMP nodes.

After completing the setup procedures, use the NE Provisioning form to identify the NE in DND. Refer to GT 5.1G.

DND GUI: SNMP Nodes

DND GUI: Sample Form To create, modify, remove, or restore a network element as a DACS II AX, AAC, IMACS, or other SNMP node, you use the NE PROVISIONING Form:

The screenshot shows the 'NE PROVISIONING FORM' window. At the top, there is a 'dnd' logo and an 'Alarms' button. The 'Action' dropdown is set to 'CREATE'. The 'Element Type' section has radio buttons for 'DACS II', 'DACS II ISZ', 'DACS II AX' (which is selected), 'AAC', 'IMACS', and 'Other'. The 'New Site Name' field contains 'DACS-II-AX-11'. Below this, there are two main sections: 'DND Processing Options' and 'Communications Protocol Information'. In 'DND Processing Options', the 'Location' is 'Manalapan, NJ' and the 'Assign to Partition(s)' list includes 'AllNodes', 'California', 'Kansas', and 'NewJersey'. In 'Communications Protocol Information', the 'IP address' is '123.234.4242' and the 'Community' is 'public'. At the bottom, there are four buttons: 'Back', 'Execute', 'Restart', and 'Close'. The window title bar at the bottom says 'Unsigned Java Applet Window'.

Figure 5-1. DND GUI: NE Provisioning Form for SNMP Node

DND GUI: SNMP Nodes

Fields for NE Provisioning Form for SNMP

Table 5-1 describes the field values for the NE PROVISIONING form, when the Element Type is a DACS II AX, AAC, IMACS, or Other-type SNMP node.

Table 5-1. DND GUI: Field Descriptions for the NE PROVISIONING Form

Field Name	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Provisions a new NE in DND with the name New Site Name. The NE database is created. ■ <i>REMOVE</i> - Disconnects the NE. ■ <i>RESTORE</i> - <i>RESTORE</i> puts the equipment in-service. ■ <i>DELETE</i> - Deletes the NE and related data from the DND database. ■ <i>MODIFY</i> - Allows you to change the Location, IP Address, or Community for an NE. ■ <i>CHGSITE</i> - Changes the Site Name for the selected NE.
Element Type	Select one of the SNMP-type network elements: DACS II AX, IMACS, AAC, or Other-type SNMP node.
New Site Name	(Text field) Mandatory. 1 through <i>n</i> characters (as specified in the SITENAME_SIZE environment variable) from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name.
Location	(Text field) Location of NE. Up to 13 characters. This is an informational field only.
Assign to Partition(s)	(Multi-select combo box). By default a new NE belongs to all 10 partitions. You can selectively assign/un-assign the NE from partitions using this field.
IP Address	(Text field) Specify the IP address of the SNMP node using dot notation.
Community	(Text field) Specify the community string (password) that both DND and the SNMP node will use to communicate. The default for AAC/IMACS is <i>Manager</i> . For DACS II AX and Other, the default is <i>public</i> .

DND GUI: SNMP Nodes (Continued)

States of an SNMP Node

All state changes for an SNMP node are recorded in the SNMP Alarm Log.

The state changes you will see most often are:

- *QRY* indicates that DND is querying the SNMP node for release and type information.
 - *IS* indicates that the network element has been successfully restored and is in-service.
 - *OOS* indicates that the network element is out of service.
 - *ALM* indicates a loss of communication.
 - *ERR* indicates that the SNMP node has an unsupported release or is an unsupported type. For example, this error occurs if the type of element is set to AAC and the actual NE is a DACS II AX.
-

DACS Links

Overview

A DACS II or DACS II ISX can be connected to the DND system via one of the three types of links:

- X.25 link
- SNIDER link
- TCP/IP link

**NOTE:**

A DACS II AX is connected as an SNMP node.

Creating a DACS with a X.25 Link

The X.25 link is a synchronous connection from the DND to the DACS. The configuration is assumed to be a PDN connection. The lines between the DND and the DACS must be identified. You must enter a primary Network Address for the primary line and you may enter an optional backup line.

There are up to four lines between the DND and the PDN, identified in the DACS network. The lines must physically exist. At initial system start-up, all 4 lines are OOS.

Additionally, you can provision X.25 lines in the X.25 PROVISIONING form in the DND Forms Interface. For the DND Forms Interface, you must complete the X.25 PROVISIONING form before you can provision a DACS using X.25.

X.25 Setup

The X.25 transmission parameters are assigned at installation. The default settings of the X.25 path, as provided by the X.25 software package, are used and should provide acceptable service for most configurations. If these need to be changed, this can be done with the "x25tool" provided with the X.25 package. This tool can only be run by the root user and should only be used with the aid of Lucent Technical Support and your X.25 service provider.

Assignment of network addresses for each of the DACS X.25 links must be available when the DACS connection is provisioned. These are provided by your X.25 service provider.

DACS Link (Continued)

X.25 Line Numbering Scheme

Numbering of the X.25 links from the DND begins with the number 1, but the physical line ports, however, begin with port 0. The following table shows the mapping of the physical port numbering (as provided on the X.25 cable at the workstation) and the DND link numbering (as provided on the forms):

Table 5-2. X.25 Line Port Numbers

X.25 Physical Port Number	DND Link Number
0	1
1	2
2	3
3	4

Link Assignment and Link Redundancy

The choice of which X.25 link to assign to a DACS should be made such that traffic is distributed across all available links for best performance. One or two local X.25 links can be assigned for communications to a DACS. The second link provides redundancy in case the first link should fail. Switching of service is non-revertive in the case of failure.

Provisioning X.25 at the DACS

The X.25 line at the DACS must be properly provisioned at the DACS. Refer to GT 2.3U for the procedure.

X.25 Configurations

Introduction

There are several ways to configure the primary and backup lines in an X.25 configuration.

Fully Backed-Up Configuration

Figure 5-2 shows a configuration for DACS II, where line 1 and line 2 are two links from the DND computer to the X.25 network. net_ad_1 is the **Network Address** of one link from the X.25 network to the DACS and net_ad_2 is the **Network Address** of another. An example of a **Network Address** is a telephone number, such as 5555555555.

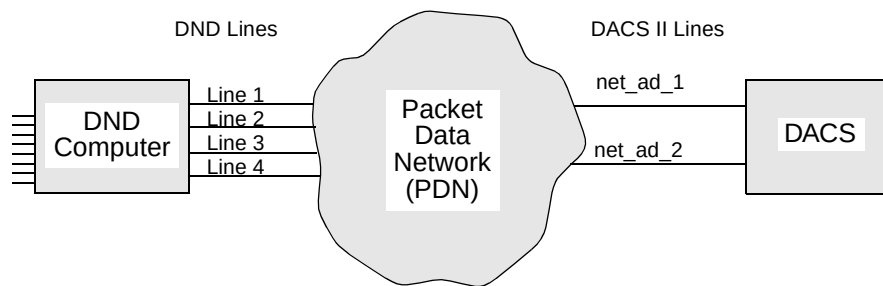


Figure 5-2. Fully Backed-up Configuration (DACS II)

This configuration backs up the entire path from DND to the DACS:

- **Primary Line:** 1
- **Network Address:** net_ad_1
- **Backup Line:** 2
- **Network Address:** net_ad_2

A break in line 1 establishes a backup path through line 2, and a break in net_ad_1 establishes a backup path through net_ad_2.

X.25 Configurations (Continued)

Backup of Link to Frame Only

Figure 5-3 shows a configuration where line 1 is the link to the DND computer. This configuration may apply if line 2 is not present or you do not wish to use it to back up line 1.

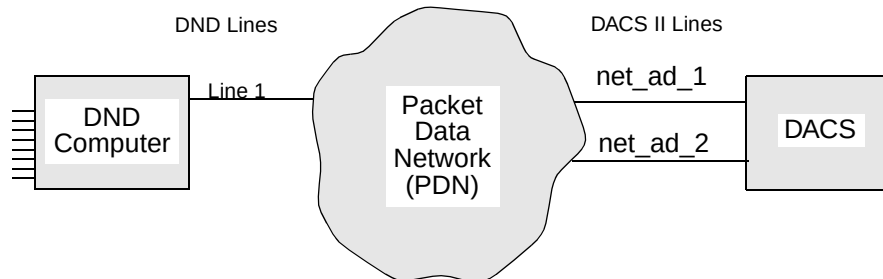


Figure 5-3. Backup of Link to Frame Only (DACS II)

This configuration backs up the lines to the DACS only:

- **Primary Line:** 1
- **Network Address:** net_ad_1
- **Backup Line:** 1
- **Network Address:** net_ad_2

Line 1 acts as both the primary and backup line. A break in net_ad_1, establishes a backup path through net_ad_2. There is no separate line acting as a backup for line 1.

X.25 Configurations (Continued)

Backup of DND Link Only

Figure 5-4 shows a configuration where only line 1 is backed up. This configuration may apply if the DACS has only one link available.

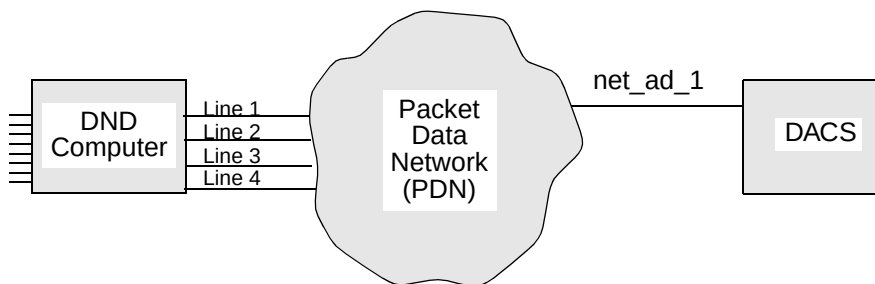


Figure 5-4. Backup of DND Link Only

This configuration backs up the link to the DND only:

- **Primary Line:** 1
- **Network Address:** net_ad_1
- **Backup Line:** 2
- **Network Address:** net_ad_1

The path in both the primary and backup case goes through net_ad_1, which is, not backed up.

RESTORE and BRESTORE Actions

DND attempts to establish communication over an X.25 link when it receives a **RESTORE Action** or a **BRESTORE Action**, or when the SVC is lost to a DACS that was previously restored on the primary line.

If you are executing a **RESTORE**, and are using only the primary line, or if the primary line has been restored without a backup line and the SVC has been lost, DND makes up to two attempts to establish communication through the **Primary Line** and **Network Address**. A third try is preceded by a random delay. If all three fail, DND begins the three-try sequence again, to an indefinite number of attempts, only terminated when it succeeds, or you enter a **REMOVE Action**.

(Continued on next page)

X.25 Configurations (Continued)

RESTORE and BRESTORE Action, Continued

If you are executing a *BRESTORE*, DND goes through the same cycle of attempts, over the **Backup Line** and its **Network Address**.

If the SVC is lost to a DACS that was previously restored with both a primary and a backup line, DND makes up to two attempts to restore communication over the primary line, then one attempt over the backup line, then one more attempt over the primary line, ending the cycle with a random delay. Then it starts the cycle again, up to an indefinite number of attempts.

The X.25 interface provides a cause code and a diagnostic code to the DND when a link is broken.

DND then displays one of three diagnostic messages in the DND **Status** field:

Primary link n is down for site sitename, cause xx diag yy.

Backup link n is down for site sitename, cause xx diag yy.

Net addr mmm is down for site sitename, cause xx diag yy.

For the meanings of xx and yy in each case, refer to *Managing SunLink® X.25 9.1* by Sun Microsystems Inc.

DND GUI: DACS with X.25 Link

NE Provisioning Form, X.25 Link

Figure 5-5 shows an example of a NETWORK ELEMENT PROVISIONING form for a DACS with an X.25 link.

NE PROVISIONING FORM

dnd **Alarms**

Action:

Element Type: ☒ DACS II ☐ DACS II ISX ☐ DACS II AX ☐ AAC ☐ IMACS ☐ Other

New Site Name:

DACS Information

Language: ☒ MHL ☐ PDS NPC Addressing: ☒ HIER ☐ EXT3 ☐ EXT4

Generic: Protocol: ☒ X.25 ☐ SNA/SDR ☐ TCP/IP

Location:

DND Processing Options

Conditional ERP: ☒ NO ☐ YES

Programmable Priority: ☒ NO ☐ YES

Alarm Sync:

Alarm Intervention: ☐ NO ☒ YES

Assign to Partition(s):

Message Log Recovery Information

DACS Log Recovery: DACS Link Failure Length:

X.25 Communications Protocol Information

X.25 Link Status Information

Line1: Line2: Line3: Line4:

Primary Line: ☒ 1 ☐ 2 ☐ 3 ☐ 4

Backup Line: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☒ none

Network Address:

Network Address:

? Preferred X.25 line number

Unsigned Java Applet Window

Figure 5-5. DND GUI: NE Provisioning Form, DACS with X.25 Link

SNIDER Link

Creating a DACS with a SNIDER Link

The SNIDER link is a direct link between the DND and the DACS. You must select a line and enter the line **Baud Rate** to identify the connection line. It is suggested that SNIDER links be provisioned from highest to lowest number, as indicated in the **Line Number:** dialog box.

DND GUI: NE Provisioning Form, SNIDER Link

Figure 5-6 shows an example of a NETWORK ELEMENT PROVISIONING form for a DACS with a SNIDER link.

Enter **SNIDER**
Line Information

The screenshot shows the 'NE PROVISIONING FORM' window. At the top, there's a 'dnd' logo and an 'Alarms' button. The 'Action' dropdown is set to 'CREATE'. Under 'Element Type', 'DACS II' is selected. 'New Site Name' is 'DACS-01-111'. The 'DACS Information' section has 'Language' set to 'MML', 'Generic' to '9.0', and 'Location' to 'Freehold'. 'NPC Addressing' has 'HIER' selected, and 'Protocol' has 'SNIDER' selected. The 'DND Processing Options' section has 'Conditional ERP' and 'Programmable Priority' both set to 'NO', 'Alarm Sync' to '00', and 'Alarm Intervention' set to 'YES'. 'Assign to Partition(s)' shows a list with 'AllNodes', 'California', 'Kansas', and 'NewJersey'. 'Message Log Recovery Information' has 'DACS Log Recovery' at '1000' and 'DACS Link Failure Length' at '080'. The 'SNIDER Communications Protocol Information' section has 'Line Number' set to '1' and 'Baud Rate' set to '9600'. At the bottom, there are 'Back', 'Continue...', 'Restart', and 'Close' buttons. A status bar at the very bottom says 'Unsigned Java Applet Window'.

Figure 5-6. DND GUI: Network Element Provisioning Form, DACS with SNIDER Link

SNIDER Link (Continued)

SNIDER Line Numbering Scheme

If you have chosen the SNIDER connection option, then you may have a 32-port Serial Expansion Unit (SEU). Before you create the DACS in the DND database, the SNIDER link at the DACS needs to be provisioned properly or it will not work. See GT 2.2U. The following table shows the corresponding line port numbers as displayed on the DACS and how they are numbered in DND.

If you have the optional 32 port SEU installed, use ports 17 to 48 to provision the SNIDER link at the DACS when assigning the ports. (Ports 1-16 can also be used for login ports.)

Table 5-3. SNIDER Line Port Numbers

Unit	SEU Port Number	DND Line Port Number
First unit: 16-port SEU (default)	1 to 16	1 to 16
Second unit: 32-port SEU (optional)	1 to 32	17 to 48

TCP/IP Link

Creating a DACS with a TCP/IP Link

The TCP/IP link is a direct link between the DND and the DACS. You must select an IP address for the DACS and enter a user name and password.

DND GUI: NE Provisioning Form, TCP/IP Link

Figure 5-7 shows an example of a NETWORK ELEMENT PROVISIONING form for a DACS with a TCP/IP link.

Enter TCP/IP
Communication
Protocol
Information

The screenshot shows the 'NE PROVISIONING FORM' window. At the top, there's a 'dnd' logo and an 'Alarms' button. The 'Action' dropdown is set to 'CREATE'. Under 'Element Type', 'DACS II' is selected. 'New Site Name' is 'DACS-04-124'. In the 'DACS Information' section, 'Language' is 'MPL', 'Generic' is 'S.0', and 'Protocol' is 'TCP/IP'. The 'DND Processing Options' section has several checkboxes: 'Conditional ERP' (NO), 'Programmable Priority' (NO), 'Alarm Sync' (00), and 'Alarm Intervention' (NO). 'Assign to Partition(s)' is set to 'AllNodes'. The 'Message Log Recovery Information' section shows 'DACS Log Recovery' as '0000' and 'DACS Link Failure Length' as '000'. The 'TCP/IP Communications Protocol Information' section has fields for 'IP address', 'DACS user name', and 'DACS user password'. At the bottom, there are buttons for 'Back', 'Continue...', 'Restart', and 'Close'. A note at the bottom says '? IP address for TELNET and/or SNMP access'.

Figure 5-7. DND GUI: Network Element Provisioning Form, DACS with TCP/IP Link

DACS Provisioning Verification

Site Status

When a DACS is restored, DND queries the DACS for the language, generic, and NPC addressing format. During this time, the **Site Status** for the DACS is set to *QRY* (query).

If the DACS and DND databases match, the **Site Status** will change to *IS P* or *IS B*.

If there are differences between the DACS and DND databases, the **Site Status** will change to *ERR* (error). The errors will appear on the Status Summary window on the DND Main window.

The DND will also place the DACS into an *ERR* state if the query of information to the DACS times out at the DND. When a DACS enters the *ERR* state, the DND will periodically retry the query of information in order to try to clear the *ERR* state. Even though the link is established and will not be affected, a new link restoral message will be issued to the system which will reinitiate the query of the DACS provisioning data. If the query of information succeeds and matches the DND database, then the DND will place the DACS into the in-service state (*IS*). If an error occurs, then the reason will appear on the Status line and the state will remain in *ERR*.

In both the *QRY* and *ERR* conditions, the DACS continues to process echo responses and DACS alarms. Provisioning commands, however, cannot be processed, such as cross connect. Non-provisioning commands, such as reports and passthrough are allowed.

**NOTE:**

If you modify the Type, Protocol, Language, NPC Addressing, Generic, or Line Information, first remove the DACS from service, enter the modifications, then restore the DACS to service. You must also remove the DACS from service before switching to a backup X.25 link, or from a backup link to a primary link.

Changing the Site Name of a Network Element

Definition You assign a **Site Name** to a network element, when you create it. The **Site Name** is used to identify the network element on other forms and on reports.

DND GUI: The CHGSITE Action

In the DND GUI, you use the *CHGSITE* Action on the NE PROVISIONING form to change the site name of a network element. The NE PROVISIONING form prompts you for the following information:

- **Current Site Choices.**
- **New Site Name**

DND GUI: Sample Form

Figure 5-8 shows the *CHGSITE* action on the NETWORK ELEMENT PROVISIONING form.

The screenshot shows a Java applet window titled "NE PROVISIONING FORM". The window has a dark background with a blue "dnd" logo and a red "Alarms" button. The "Action:" dropdown menu is set to "CHGSITE". The "Element Type:" section has five radio buttons: "DACS II", "DACS II ISX", "DACS II AX" (which is selected), "AAC", and "IMACS". Below this, the "Current Site Choices:" dropdown menu shows "Argentina-AX-11". The "New Site Name:" text field contains "DACS-01-111". At the bottom, there are four buttons: "Back" (with a green arrow), "Continue..." (with a green arrow), "Restart" (with a green circular arrow), and "Close" (with a red X). The status bar at the bottom of the window says "Unsigned Java Applet Window".

Figure 5-8. DND GUI: NE Provisioning Form, CHGSITE Action

Changing the Site Name of a Network Element (Continued)

DND Forms: The CHGSITE Action In DND Forms, you can change the **Site Name** assigned to a DACS by selecting the **CHGSITE Action** on the FRAME ADMINISTRATION form. See Figure 5-9.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the status bar at the top says "Status: The list of DACS Site Names Has Changed". Below that, the "Alarms:" section is empty. The main area is titled "FRAME ADMINISTRATION" and contains the following text: "Action: CHGSITE Old Site Name: DACS-SNIDER" and "New Site Name: DACSEast-SNIDER". At the bottom of the main area, it says "The command completed successfully" and "Enter new site name:". The bottom of the window has a status bar with "snoopy: UI-00" and a row of buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 5-9. DND Forms: CHGSITE Action on FRAME ADMINISTRATION Form

DND Forms: Entering Site Name on DND Forms

There are two ways to enter a **Site Name** in the field in the DND Forms interface:

- Type in a valid **Site Name** as defined through FRAME ADMINISTRATION.
- Press **CHOICES** to display the list of site names. Select the **Site Name** from the list and press **ENTER**. Your choice appears in the **Site Name** field on the form.

DND GUI: Deleting an NE

The DELETE Action

The *DELETE Action* removes the network element from the DND database. When performing the *DELETE Action*, the following field will appear on the form:



Confirm DELETE Action
Confirm: ☒

Figure 5-10. The CONFIRM Checkbox

If the **Confirm:** check box is not selected before clicking **Execute**, DND will display a denial message informing you to confirm the action by checking the **Confirm:** box. Click **Back** to select the **Confirm:** box and click **Execute** to complete the action.



NOTE:

You cannot *DELETE* a site if it is connected to an intertie.

DND GUI: Field Descriptions for NE Provisioning Form for DACS

Fields

The table below describes in detail the fields and field values on the NE PROVISIONING form when a DACS is being provisioned.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form

Field Name	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Provisions a new DACS in DND with the name New Site Name and sets the DACS Status to OOS. The DACS database is created. ■ <i>RESTORE/BRESTORE</i> - Establishes the administrative link to the DACS using the Network Address specified on the form. <i>RESTORE</i> uses the Primary Line first and <i>BRESTORE</i> uses the Backup Line first. <i>BRESTORE</i> is not available for the SNIDER or TCP/IP Protocol. ■ <i>REMOVE</i> - Disconnects the administrative link between the DND and the DACS specified in Current Site Choices. ■ <i>DELETE</i> - Deletes the DACS and related data from the DND database. ■ <i>MODIFY</i> - Changes the DACS provisioning information. The DACS must be OOS to change the following fields: DACS Type, Protocol, Primary Line, Backup Line, Network Address, IP Address, DACS User Name, DACS User Password, and Baud Rate; to change other fields, the DACS can be IS. The <i>MODIFY Action</i> cannot change the Site Name. ■ <i>CHGSITE</i> - Changes the Site Name for the selected DACS.
Element Type	Select either DACS II or DACS II ISX. ■ <i>DACS II</i> - The DACS is a DACS II, Releases 6.0 and higher. ■ <i>DACS II ISX</i> - The DACS is a DACS II ISX, Releases 1.1 and higher.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form (Continued)

Field Name	Description
New Site Name	(Text field) Mandatory. 1 through <i>n</i> characters (as specified in the SITENAME_SIZE environment variable) from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name.
Location	(Text field) Location of NE. Up to 13 characters. This is an informational field only.
Current Site Choices	(Combo box - For all Actions except <i>CREATE</i>) The name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically.
Conditional ERP	(Radio buttons) The selection or nonselection of conditional echoed response processing for this DACS. ■ <i>YES</i> - Process NPC and circuit echoed response messages only on condition that all NPCs cited in the message are already in the DND database. ■ <i>NO</i> - Process echoed response messages unconditionally (the DND will respond to all provisioning echoed responses).
Programmable Priority	(Radio buttons) This field allows you to specify whether to activate/deactivate the Programmable Priority feature for a DACS. When an NPC or another hardware component goes down, there are many DACS alarm messages that are generated and queued based on the order they are received. When Programmable Priority is set to <i>ON</i>, any MML command entered from the DACS with the keyword "<i>PRIOUT</i>" is automatically prioritized and placed before other messages in the DACS queue. This request only impacts the order of the output and does not change the execution of commands. The choices are: ■ <i>NO</i> - Default value ■ <i>YES</i> - Activates this feature on a frame-by-frame basis Available for DACS II, Release 7.0 and above.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form (Continued)

Field Name	Description
Alarm Sync	(Text field) 2 numeric digits, where <i>nn</i> = 00 to 99. Enables an optional automatic alarm sync to take place when communications to a DACS is restored. The number <i>nn</i> represents the number of hours between autonomous alarm sync actions. ■ <i>00</i> - Option is disabled; no alarm sync if the DACS Status becomes <i>IS</i>, <i>IS P</i> or <i>IS B</i>. ■ <i>nn</i> - Provided more than <i>nn</i> hours have elapsed since last auto alarm sync, when the DACS Status becomes <i>IS</i>, <i>IS P</i> or <i>IS B</i> again, query the DACS and update the Alarm State information for the DACS. For more information, refer to the NPC PROVISIONING chapter. Example: If <i>nn</i>=01 and communications to the DACS are down for more than one hour, then an alarm sync takes place when communications to the DACS are restored.
Assign to Partition(s)	(Multi-select combo box). By default a new NE belongs to all 10 partitions. You can selectively assign/un-assign the NE from partitions using this field.
Alarm Intervention	(Radio Buttons) Turns the Alarm Intervention feature on or off on the DND. The choices are: ■ <i>NO</i> - Default value ■ <i>YES</i> - Activates this feature on a frame-by-frame basis Available for DACS II, Release 8.2.3 and later and DACS II ISX, Release 3.1 and later. See Chapter 2, Getting Started for information on turning on the Alarm Intervention Feature at the DACS.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form (Continued)

Field Name	Description
Message Log Recovery	Optional. (Applies to DACS II Release 8.2.3, or greater, and to DACS II ISX Release 3.1, or greater.) This field has a maximum of 4 numeric characters with a value of 0 to 2000. The default is 0. If 0 is selected, the DND will not retrieve messages from the DACS message log after link restoration. If a number from 1 to 2000 is selected, the DND will retrieve the messages only if the number of messages it must retrieve is less than the value entered in this field. Available for DACS II, Release 8.2.3 and later and DACS II ISX, Release 3.1 and later.
DACS Link Failure	Optional. This field has a maximum of 3 numeric characters with a value of 0 to 999. The default is 0. If the length of the link failure is greater than the number of seconds entered in this field, the DND will retrieve the messages from the DACS Messsge Log after link restoration. Available for DACS II, Release 8.2.3 and later and DACS II ISX, Release 3.1 and later.
Language	Mandatory. Specifies the command language to be used for frame commands generated by DND. You must independently insure that this value conforms to the way the DACS is configured according to the instructions in Chapter 2: Getting Started. <i>MML</i> Use HuMan-Machine Language. MML is the <i>only</i> language allowed for DND when the Action is <i>CREATE</i>.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form (Continued)

Field Name	Description
NPC Addressing	(Radio buttons) Mandatory. Specifies the type of NPC addressing to be used in DACS commands generated by DND. You must independently insure that this value conforms to the way the DACS is configured. ■ <i>HIER</i> - Use hierarchical addressing ■ <i>EXT3</i> - Use 3-digit extended addressing ■ <i>EXT4</i> - Use 4-digit extended addressing For the CREATE Action, this field defaults to the appropriate value for the Type of DACS. The default for DACS II ISX is <i>EXT3</i>, which also is the only valid choice for those systems. Changing to some other value will prevent DND from communicating properly with the DACS.
Generic	(Text field) Mandatory. Two significant characters. Enter the generic in the form x.y. For example, for Release 7.0.3, enter 7.0.
Protocol	(Radio buttons) Mandatory. The transmission protocol to be used over the path between DND and the frame. ■ <i>SNIDER</i> - Serial asynchronous communication; the configuration is direct. You must enter a line Speed ■ <i>X.25</i> - Synchronous communication. You must enter a Network Address for the primary line and for the backup line if one was configured ■ <i>TCP/IP</i> - Telnet communication. You must enter an IP address for the DACS and a user name and password.
Location	(Text field) Optional. Up to 13 characters. States the physical location of the DACS. This is an informational field only.
X.25 Link Information Line1 - Line4	(Read-only fields - X.25 Only) Displays connection status of each line (IS or OOS). The Service State is set by the X.25 ADMINISTRATION form in the DND Forms Interface.
Primary Line	(Radio buttons) The number of the line that will be used for communication between the DND computer and the network or DACS.

Table 5-4. DND GUI: Field Descriptions for the NE PROVISIONING Form (Continued)

Field Name	Description
Backup Line	(Radio buttons) The number of the backup line to be used for communication between the DND computer and the network or DACS.
Network Address	(Text field) Appears only for the X.25 Protocol . A maximum of 15 numeric characters. Contains the PDN address for the X.25 connection to the DACS. This must be provided for the Primary Line and the Backup Line , if a Backup Line is specified.
Line Number	(Combo box - SNIDER Only) Two numeric characters. Select the tty port number on the DND ports card for this connection. If a line is being used as a login port or for another DACS, it will not be displayed as a Line Number choice.
Baud Rate	(Radio buttons - SNIDER Only) The baud rate for this DND SNIDER port. Values are 1200 , 2400 , 4800 , and 9600 . You must independently insure that this value conforms to the way the DACS is configured.
IP Address	(Text field - TCP/IP Only) The Internet Protocol address at the DACS. See Chapter 2, Getting Started. Applies only to DACS II, Release 9.0 and later. See GT 5.4G for additional information.
Dacs User Name	(Text field - TCP/IP Only) Upper case. The DACS user name previously provisioned at the DACS and used to establish a telnet session to a DACS. See Chapter 2, Getting Started. Applies only to DACS II, Release 9.0 and later. See GT 5.4G for additional information.
DACS User Password	(Text field - TCP/IP Only) Upper case. The DACS user password previously provisioned at the DACS and used to establish a telnet session to a DACS. See Chapter 2, Getting Started. Applies only to DACS II, Release 9.0 and later. See GT 5.4G for additional information.

DND Forms: FRAME ADMINISTRATION Form

Purpose

Select FRAME ADMINISTRATION from the SYSTEM ADMINISTRATION menu to enter information identifying a DACS or to remove or restore service to the DACS.

The type of information specified in the form includes such items as:

- DACS Site Name
- DACS Type (DACS II or DACS II ISX)
- Network Protocol (X.25, SNIDER, or TCP/IP)

**NOTE:**

A Network Protocol of TCP/IP is a display only field for MODIFY, REMOVE, RESTORE, and DELETE actions. It is not possible to CREATE a DACS with a TCP/IP link using the DND Forms. This is only possible from the DND GUI. The other actions are allowed.

DND Forms: FRAME ADMINISTRATION Form (Continued)

Sample Screen for X.25 Figure 5-11 shows an example of a FRAME ADMINISTRATION form for a DACS II using X.25 protocol.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:'. The main section is titled 'FRAME ADMINISTRATION'. Below this title, various fields are populated with values: 'Action: CREATE', 'Site Name: DACSCentral-X25', 'Site Status: UEQD', 'Type: DACS II', 'Protocol: X.25', 'Language: MML', 'NPC Addr: HIER', 'Location: Zone 2', 'Generic: 9.0', 'ERP Control: OFF', 'Programmable Priority Output: OFF', 'Alarm Sync: 00', 'DACS Log Recovery: 0000', 'DACS Link Failure Length: 000', 'Primary Line: 1', 'Network Address: 2016151108', 'Status: IS', 'Backup Line: 2', 'Network Address: 2016151108', 'Status: IS'. At the bottom, there is a prompt 'Enter desired action:' and a status bar showing 'garfield: UI-01' and buttons for 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Action: CREATE	Site Name: DACSCentral-X25	Site Status: UEQD
Type: DACS II	Protocol: X.25	Language: MML
NPC Addr: HIER	Location: Zone 2	Generic: 9.0
ERP Control: OFF	Programmable Priority Output: OFF	
Alarm Sync: 00	DACS Log Recovery: 0000	DACS Link Failure Length: 000
Primary Line: 1	Network Address: 2016151108	Status: IS
Backup Line: 2	Network Address: 2016151108	Status: IS

Enter desired action: _____

garfield: UI-01

HELP CHOICES QUIT TOP MENU PRINT EXECUTE

Figure 5-11. DND Forms: FRAME ADMINISTRATION Form for DACS using X.25 Protocol

DND Forms: FRAME ADMINISTRATION Form (Continued)

Sample Screen for SNIDER

Figure 5-12 shows an example of a FRAME ADMINISTRATION form for a DACS II using SNIDER protocol.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:'. The main section is titled 'FRAME ADMINISTRATION' and contains the following fields:

Action: CREATE	Site Name: ISXCentral-SNIDER	Site Status: UEQD
Type: D II ISX	Protocol: SNIDER	Language: MML
NPC Addr: EXT3	Location: Zone 2a	Generic: 3.2.2
ERP Control: OFF	Programmable Priority Output: OFF	
Alarm Sync: 00	DACS Log Recovery: 0000	DACS Link Failure Length: 000
Primary Line: 03	Speed: 9600	

Below the fields, a message states: 'Site record not found. A new record will be created.' followed by 'Enter desired action:'. At the bottom, there is a status bar with 'garfield: UI-01' and a row of buttons: 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 5-12. DND Forms: FRAME ADMINISTRATION Form for DACS using SNIDER Protocol

DND Forms: FRAME ADMINISTRATION Form (Continued)

Field Descriptions The field values for the FRAME ADMINISTRATION form (for DACS frames only) are described in Table 5-5.

**Table 5-5. DND Forms: Field Descriptions for the FRAME
ADMINISTRATION Form**

Field	Description
Action	Mandatory. Valid entries are: ■ <i>CREATE</i> - Provisions a new DACS in DND as a Site Name and sets the Site Status to <i>OOS</i>. The frame's database(s) is(are) created. ■ <i>RESTORE</i> - Establishes the administrative link to the DACS using the Primary Line. ■ <i>BRESTORE</i> - Establishes the administrative link to the DACS using the Backup Line and Network Address specified on the form. If none were specified, the request is denied. Not available for a Protocol of <i>SNIDER</i>. ■ <i>REMOVE</i> - Disconnects the virtual administrative link between the DND and the DACS specified in Site Name. ■ <i>DELETE</i> - Deletes the DACS and related data from the DND database. ■ <i>MODIFY</i> - Changes non-link information of this form when the Site Status is either <i>IS</i> or <i>OOS</i>. For changing line and network data: Type, Protocol, Primary Line, Backup Line, Network Address and Speed, the Site Status must be <i>OOS</i>. The MODIFY Action does not access Site Name. ■ <i>CHGSITE</i> - Changes the Site Name for the selected DACS.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
Site Name	Mandatory. 1 through <i>n</i> characters (as specified in the SITENAME_SIZE environment variable) from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name. The name of the DACS where the requested Action will take place. Pressing CHOICES displays WHICH DACS? with a list of the DACS names. These names were established during frame administration, described in this chapter.
Site Status	The status of the DACS, not user-accessible. ■ <i>IS P</i> - For SNIDER. In service. ■ <i>IS n</i> - For X.25. In service on line <i>n</i>, where <i>n</i> is <i>P</i> for primary or <i>B</i> for backup. A <i>RESTORE</i> for the DACS referenced in Site Name has successfully been completed and a message has been received saying that this link is on-line. Communications are active. ■ <i>OOS</i> - Out of service. Communications are not currently active, because the DACS has been created, but has not yet been restored or the DACS has been removed. ■ <i>UEQD</i> - Unequipped. Either a <i>CREATE</i> has never been done for this DACS, or a <i>DELETE</i> was done on it. ■ <i>ALM</i> - The DACS has been <i>RESTORED</i>, but the communication to the DACS is not currently active. ■ <i>AS</i> - An audit/sync is in progress on this DACS. ■ <i>QRY</i> - Query. The DACS is in-service but is in a "query" state. DND queries the DACS to verify the language, generic, and NPC addressing information. On an X.25 link, the query is in progress. On a SNIDER link, the query is sent when communications are established, which may be some time after the link is placed in service.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
Site Status, Continued	■ <i>ERR</i> - The information entered through the Frame Administration form is inconsistent with the connected DACS or the query to the DACS (<i>QRY</i>) failed. This condition must be corrected before any other commands can be entered into the system. In this condition, the DACS will still continue to process echo responses and DACS alarms. ■ <i>RCY</i> - Recovery. A message log recovery is in progress. The DACS state may transition to the <i>RCY</i> state if the link to the DACS is manually or automatically re-established and the DACS Log Recovery and DACS Link Failure Criteria are set and satisfied.
Type	Mandatory. Specifies the type of DACS. ■ <i>DACS II</i> - The frame is a DACS II. The Language <i>must</i> be <i>MML</i>. ■ <i>DACS II ISX</i> - The frame is a DACS II ISX, Releases 1.0 and higher.
Protocol	Mandatory. The transmission protocol to be used over the path between DND and the frame. ■ <i>SNIDER</i> - The configuration is direct. You must enter a line Speed. ■ <i>X.25</i> - The configuration is PDN. In the PDN case, you must enter a Network Address for the primary line and for the backup line if one was configured. ■ <i>TCP/IP</i> - A Network Protocol of TCP/IP is a display only field for MODIFY, REMOVE, RESTORE, and DELETE actions. It is not possible to CREATE a DACS with a TCP/IP link using the DND Forms. This is only possible from the DND GUI. The other actions are allowed.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
Language	Mandatory. Specifies the command language to be used for frame commands generated by DND. You must independently insure that this value conforms to the way the DACS is configured according to the instructions in Chapter 2: Getting Started. ■ <i>MML</i> - Use HuMan-Machine Language. MML is the <i>only</i> language allowed for DND when the Action is <i>CREATE</i>.
NPC Addr	Mandatory. Specifies the type of NPC addressing to be used in DACS commands generated by DND. You must independently insure that this value conforms to the way the DACS is configured according to the instructions in Chapter 2, Getting Started. ■ <i>HIER</i> - Use hierarchical addressing. ■ <i>EXT3</i> - Use 3-digit extended addressing. ■ <i>EXT4</i> - Use 4-digit extended addressing. For the <i>CREATE Action</i>, this field defaults to the appropriate value for the Type of DACS. The default for DACS II ISX is <i>EXT3</i>, which also is the only valid choice for those systems. Changing to some other value will prevent DND from communicating properly with the DACS.
Location	Optional. Up to 13 characters. States the physical location of the DACS. This is an informational field only.
Generic	Mandatory. Up to eight printable characters. The first must be numeric. States the DACS software release number of DACS II or DACS II ISX software running at Site Name. For release 7 of DACS II, the entry <i>7.0</i> is required. This field distinguishes between releases prior to 7, Release 7, and subsequent releases.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
ERP Control	The selection or nonselection of conditional echoed response processing for this DACS. ■ <i>ON</i> - Process NPC and circuit echoed response messages only on condition that all NPCs cited in the message are already in the DND database. ■ <i>OFF</i> - Process echoed response messages unconditionally. The default, if the Action is <i>CREATE</i>.
Alarm Sync	The selection or nonselection of NPC alarm synchronization for this DACS. ■ <i>00</i> - Do not update the DND database with information concerning the DACS's current alarms when the Site Status becomes <i>IS</i>, <i>IS P</i> or <i>IS B</i>. ■ <i>nn</i> - Provided <i>nn</i> hours have elapsed since the last alarm sync was completed, query the DACS and update the Alarm State information for the DACS. For more information, refer to Chapter 8: NPC Provisioning.
Message Log Recovery	Optional. (Applies to DACS II Release 8.2.3, or greater, and to DACS II ISX Release 3.1, or greater.) This field has a maximum of 4 numeric characters with a value of 0 to 2000. The default is 0. If 0 is selected, the DND will not retrieve messages from the DACS message log after link restoration. If a number from 1 to 2000 is selected, the DND will retrieve the messages only if the number of messages it must retrieve is less than the value entered in this field.
DACS Link Failure	Optional. (Applies to DACS II Release 8.2.3, or greater, and to DACS II ISX Release 3.1, or greater.) This field has a maximum of 3 numeric characters with a value of 0 to 999. The default is 0. If the length of the link failure is greater than the number of seconds entered in this field, the DND will retrieve the messages from the DACS Messsge Log after link restoration.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
Programmable Priority Output	This field allows you to specify whether to activate/deactivate the Programmable Priority feature. When an NPC or another hardware component goes down, there are many DACS alarm messages that are generated and queued based on the order they are received. When Programmable Priority is set to <i>ON</i>, any MML command entered from the DACS with the keyword "<i>PRIOUT</i>" is automatically prioritized and placed before other messages in the DACS queue. This request only impacts the order of the output and does not change the execution of commands. This option can be specified on a frame-by-frame basis. The values are: ■ <i>OFF</i> - Default value. ■ <i>ON</i> - Activates this feature on a frame-by-frame basis. This field is only available for DACS II, Release 7.0 and higher.
Primary Line	(X.25 and SNIDER only.) It is not possible to CREATE a DACS with TCP/IP Protocol or to MODIFY a DACS to a TCP/IP Protocol.) The number of the line that will be used for communication between the DND computer and the network or DACS in the case of the X.25 configuration, or between the DND computer and the DACS in the case of the SNIDER configuration. This link must be In Service (Status of <i>IS</i>, see LINK PROVISIONING). ■ For X.25 - One numeric character. Enter the physical line number of the primary connection. Valid entries are 1 through 4. ■ For SNIDER - Two numeric characters. Enter the tty port number on the DND ports card for this connection, provided that the line has not been restored as a login port.

Table 5-5. DND Forms: Field Descriptions for the FRAME ADMINISTRATION Form (Continued)

Field	Description
Backup Line	(X.25 only) The number of the line to be used as the backup path from the DND computer to the network. This link must be <i>IS</i>. Specifying the same line as in Primary Line means that you are making the primary and backup links to the network the same; i.e., no backup.
Network Address	Appears only for a Protocol of X.25. A maximum of 15 numeric characters. For a primary line, this field contains the PDN address for the X.25 connection to the DACS. For a backup line, this field contains the PDN address for the backup line. The address specifies the link from the network to the DACS. Specifying the same address for primary and backup lines means that you are making the primary and backup links the same; i.e., no backup link to the DACS.
Status	A display-only field, which can appear twice, once for the primary line and once for the backup line. It displays the status of the link associated with the Network Address . The Status can be <i>IS</i> or <i>OOS</i> .
Speed	Values are <i>1200</i> , <i>2400</i> , <i>4800</i> , and <i>9600</i> . The baud rate for this DND SNIDER port. You must independently insure that this value conforms to the way the DACS is configured as described in Chapter 2, Getting Started. This field only appears if the Protocol is <i>SNIDER</i> .

**NOTE:**

If a DACS II or DACS II ISX is created from the DND Forms interface, the Alarm Intervention feature is defaulted to OFF. If a DACS is modified, the Alarm Intervention field is not changed and cannot be changed from the DACS DND Forms FRAME ADMINISTRATION Form.

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Background

Introduction

An End User is the term used for remote equipment (i.e. customer equipment, switching equipment, etc.) connected to a Network Element which is not controlled by the DND. The provisioning functionality of an End User is limited — End Users can be represented on the Network Map and alarms received by their associated Network Element are processed, but the provisioning of the End User equipment is not supported on the DND.

End User provisioning is performed at the DND GUI.

Objectives

This chapter provides background information to help you perform the following:

1. Create an End User
 2. Modify an End User
 3. Delete an End User.
-

Related tasks

For related tasks, see the following DND GUI General Tasks in Volume II:

■ Creating an End User	GT 6.1G
■ Modifying an End User	GT 6.2G
■ Deleting an End User	GT 6.3G
-

Related information

For related information see:

- *Chapter 3, DND Screens and Form Navigation*
 - *Chapter 7, Intertie Provisioning.*
-

The End User Provisioning Form

End User Provisioning Form

Figure 6-1 shows an example of an END USER PROVISIONING form.

The screenshot displays the 'END USER PROVISIONING' window. At the top, the 'dnd' logo is visible next to an 'Alarms' button. Below this, the 'Action:' section has three checkboxes: 'CREATE' (checked), 'DELETE', and 'MODIFY'. The 'SITE' section includes an 'Element Type:' dropdown menu with options: 'DACS II' (checked), 'DACS II ISX', 'DACS II AX', 'AAC/IMACS', and 'Other'. Below this is a 'Site Name:' dropdown menu showing 'CEF'. The 'End User Information' section contains an 'End User ID:' text field with 'CEF-eu' and a 'Remarks:' text field with 'End User equipment for CEF'. An arrow points from the text 'Enter End User Information' to the 'End User ID' and 'Remarks' fields. At the bottom, there are four buttons: 'Back', 'Continue...', 'Restart', and 'Close'. A help icon and the text '? The name of the End User equipment' are located below the buttons. The window title bar at the bottom reads 'Unsigned Java Applet Window'.

Figure 6-1. END USER PROVISIONING Form, CREATE Action

The End User Provisioning Form (Continued)

End User Information

End User equipment is associated with a corresponding Network Element (DACS or SNMP sites). End User equipment is typically located at customer sites, and is therefore, not controlled by the DND. However, they are a part of the network, and the DND GUI provides a graphical representation of them.

End User Icons

End User equipment for each site is represented by one icon, but the End User icon can represent multiple pieces of End User equipment.

Once created, the new End User icon will appear in the center of its associated Network Element icon.

**NOTE:**

Only one End User icon is allowed per Network Element.

End Users and Interties

An End User cannot be deleted if it is connected to an intertie.

The End User Provisioning Form (Continued)

Field Descriptions The field values for the END USER PROVISIONING form are described in Table 6-1:

Table 6-1. Field Descriptions for the END USER PROVISIONING Form

Field Name	Description
Action	(Radio buttons) Mandatory. Valid choices are: ■ <i>CREATE</i> - Establish an End User in the DND database. The End User corresponds to a particular Network Element. Cannot create more than one End User icon per site ■ <i>MODIFY</i> - Change End User Information, such as End User ID and Remarks ■ <i>DELETE</i> - Remove an End User from the DND database
Element Type	(Radio buttons) Select the Network Element type to associate with the End User. The choices are: ■ DACS II ■ DACS II ISX ■ DACS II AX ■ AAC/IMACS ■ Other.

**Table 6-1. Field Descriptions for the END USER PROVISIONING Form
(Continued)**

Field Name	Description
Site Name	(Combo box) Mandatory. Select the Network Element name to which the End User corresponds. By default, the list appears alphabetically. To change the sorting order, modify the setting for the SORT_NAME_BY variable using the DND Forms Interface.
End User ID	(Text field) Mandatory. Must be unique. 1 through 24 characters from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name. Enter a name for the End User in the <i>CREATE</i> action; will be carried over to the <i>MODIFY</i> and <i>DELETE</i> actions. This name is the label of the End User icon on the network map.
Remarks	(Text field) Optional. 0-72 characters. Free field to enter information about the End User, such as location, usage, etc.

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Background

Introduction

An intertie is the graphical representation of a physical connection (trunk lines, DS1/E1, DS3 lines, etc.) between either two Network Elements or between a Network Element and an End User. The connection is depicted by a straight line between the two entities with a circular or rectangular “bubble” point in the center of the line (refer to *Chapter 3, DND Screens and Form Navigation*) for selection purposes.

Intertie provisioning is performed at the DND GUI.

Objectives

This chapter provides reference information to help you perform the following:

1. Create an intertie
 2. Modify an intertie
 3. Add Ports to/Delete Ports from an intertie
 4. Delete an intertie.
-

Related tasks

For related tasks, see the following DND GUI General Tasks in Volume II:

■ Creating an Intertie	GT 7.1G
■ Modifying an Intertie	GT 7.2G
■ Adding Ports to an Intertie	GT 7.3G
■ Deleting Ports from an Intertie	GT 7.4G
■ Deleting an Intertie	GT 7.5G
-

Related information

For related information see:

- *Chapter 3, DND Screens and Form Navigation*
 - *Chapter 5, NE Provisioning*
 - *Chapter 6, End User Provisioning.*
-

The Intertie Provisioning Form

Intertie Types

There are two different types of interties:

- Direct interties - a trunk from one Network Element has a direct connection to another Network Element or End User. All interties between a Network Element and an End User will default to the **DIRECT Intertie Type**. You will not be able to change this default. Direct interties are displayed graphically with a circular “bubble” in the middle.
- Indirect interties - a trunk from one Network Element is indirectly connected to another Network Element through another network, i.e., through a SONET ring. The trunk information is routed through the network, and comes out of the network on a different trunk line. Indirect interties are displayed graphically with a rectangular “bubble” in the middle.



NOTE:

Interties cannot be created between two End Users.

The Intertie Provisioning Form (Continued)

Sample Form #1 Figure 7-1 shows an INTERTIE PROVISIONING form for an intertie between two Network Elements (NE-to-NE).

The screenshot displays the "INTERTIE PROVISIONING" window. At the top, there is a "dnd" logo and an "Alarms" button. Below this is an "Action:" section with checkboxes for "CREATE" (checked), "DELETE", "MODIFY", "ADDPORIS", and "DELPORTS".

The form is divided into two main sections for "SITE 1" and "SITE 2". Each site has an "Element Type:" list box with options: "DACS II", "DACS II ISX", "DACS II AX", "AAC/IMACS", "Other", and "End User". For SITE 1, "Other" is selected. For SITE 2, "DACS II AX" is selected. Below each list box is a "Site Name:" dropdown menu. For SITE 1, the site name is "Florida-Box". For SITE 2, the site name is "Washington-AX-4".

Below the site configurations is the "Intertie Information" section. It includes an "Intertie ID:" text field with the value "FL-to-WashDC", an "Intertie Type:" section with "DIRECT" (checked) and "INDIRECT" (unchecked) options, and a "Remarks:" text field with the value "Intertie 3 bet FI and DC".

At the bottom of the form are four buttons: "Back", "Continue...", "Restart", and "Close".

A note at the bottom of the window states: "? The name of the specified intertie (group of physical connections between two network elements)".

The window title bar indicates it is an "Unsigned Java Applet Window".

Figure 7-1. INTERTIE PROVISIONING Form, NE-to-NE

The Intertie Provisioning Form (Continued)

Sample Form #2 Figure 7-2 shows an INTERTIE PROVISIONING form for an intertie between a Network Element and an End User (NE-to-EU).

The screenshot shows the "INTERTIE PROVISIONING" window with the "dnd" logo and an "Alarms" button. The "Action:" section includes checkboxes for CREATE (checked), DELETE, MODIFY, ADDPORTS, and DELPORTS. The form is divided into two columns: "SITE 1" and "SITE 2". Under "SITE 1", the "Element Type:" dropdown is set to "DACS II", and the "Site Name:" is "WashingtonDC-CEF". Under "SITE 2", the "Element Type:" dropdown is set to "End User". The "Intertie Information" section contains "Intertie ID:" (WashingtonDC-eu), "Intertie Type:" (DIRECT checked, INDIRECT unchecked), and "Remarks:" (Intertie between WashingtonDC-CEF and End User). A callout points to the "End User" checkbox in the SITE 2 dropdown, stating "End User checkbox must be selected". At the bottom, there are buttons for Back, Continue..., Restart, and Close. A footer note reads: "? The name of the specified intertie (group of physical connections between two network elements)". The window title bar indicates it is an "Unsigned Java Applet Window".

Figure 7-2. Intertie Provisioning Form, NE-to-EU

The Intertie Provisioning Form (Continued)

Intertie Ports

NPCs, MMFGs, and SNMP ports (all are considered ports) are assigned to and deleted from (via *ADDPOR*T*S* and *DELPOR*T*S* actions) interties at Network Element (NE) nodes to create network paths of information flow throughout the DND network. On the form, the intertie information will appear in read-only mode, and can only be changed by performing a *MODIFY* action.

Port Assignment

For an NE-to-NE intertie, ports are assigned in pairs - one NPC/MMFG (DACS frames) or SNMP port for each Network Element site. For an NE-to-EU intertie, ports are assigned only to the Network Element site. Figure 7-3 provides an example.

**NOTE:**

Ports need not be provisioned when they are added to the intertie.

Circuit Trace

To display the circuit network path, perform a Circuit Trace (refer to *Chapter 9, Circuit Provisioning*).

The Intertie Provisioning Form (Continued)

Port Speed

Ports can run at different speeds. When adding ports to an intertie, you must specify the port speed. This speed will be applicable for the port (or ports) on both sides of the intertie. The port speed choices are limited by the type of sites connected to the intertie. Table 7-1 illustrates the following rules on intertie port speeds:

- DS0 speed is only for SNMP-to-End User interties
- DS3 speed is not allowed for DACS II ISX.

Table 7-1. Intertie Types and Associated Port Speeds

	DACS II (CEF, Non-CEF, SBF)	DACS II ISX	SNMPs - DACS II AX, AAC, IMACS, "Other"	End User
DACS II (CEF, Non-CEF, SBF)	DS1, DS3	DS1	DS1, DS3	DS1, DS3
DACS II ISX	DS1	DS1	DS1	DS1
SNMPs - DACS II AX, AAC, IMACS, "Other"	DS1, DS3	DS1	DS1, DS3	DS0, DS1, DS3

➤ NOTE:

1. If an MMFG (DS3 port on a DACS II CEF) is added to an intertie, then any NPC associated with the MMFG cannot be added to the intertie. Technically, the NPC has already been added to the intertie.
2. When adding ports to an intertie connected to an SNMP, all ports in a given slot must have the same speed.

The Intertie Provisioning Form (Continued)

Slot Cards

There are many different types of cards used for ports, depending on the type of network element. Table 7-2 shows a network element and an example of a type of card type and an associated speed associated with the card.

Table 7-2. Network Elements and Associated Cards Example

	DS0	DS1	DS3
DACS II (CEF, Non-CEF, SBF)	-	NPC	MMFG
DACS II ISX	-	NPC	-
DACS II AX	Octal Voice Module	Quad Port Data Sync, Octal T1/E1 Module	DS3 Module
AAC/ IMACS	E&M Card	WAN Card	ATM Card

The Intertie Provisioning Form (Continued)

Sample Form #3

Figure 7-3 shows an example of using the INTERTIE PROVISIONING form to add ports to the intertie.

The screenshot shows the 'INTERTIE PROVISIONING' window with the 'ADDPORTS' action selected. The form is divided into several sections:

- Action:** ☐ CREATE ☐ DELETE ☐ MODIFY ☒ ADDPORTS ☐ DELPORTS
- SITE 1:**
 - Element Type: ☐ DACS II ☐ DACS II ISX ☒ DACS II AX ☐ AAC/IMACS ☐ Other
 - Site Name: Washington-AX-4
- SITE 2:**
 - Element Type: ☒ DACS II ☐ DACS II ISX ☐ DACS II AX ☐ AAC/IMACS ☐ Other ☐ End User
 - Site Name: WashingtonDC-CEF
- PORTS:**
 - Port Speed: ☐ DS3 (43Mb/s) ☒ DS1 (1.5Mb/s), E1 (2Mb/s)
 - SITE 1 Port:** Slot Type: ☒ P Slot Number: 01 Port Number: 006
 - SITE 2 NPC:** NPC Specifier: ☐ ID ☒ Hier ☐ Extd NPC: 01103
- Intertie Information:**
 - Intertie ID: WashingtonDC-Washington
 - Intertie Type: ☒ DIRECT ☐ INDIRECT
 - Remarks:
 - Intertie Bandwidth: 1

Arrows point to the 'SITE 2 NPC' field and the 'PORTS' section, with a note: 'Specify the NPC and PORT information'.

Buttons at the bottom: Back, Continue, Restart, Close.

Footer: ? The port number on the card in the specified slot

Figure 7-3. Intertie Provisioning Form, ADDPORTS Action

The Intertie Provisioning Form (Continued)

Field Descriptions The field values for the TEST PORT PROVISIONING form are described in Table 7-3:

Table 7-3. Field Descriptions for the INTERTIE PROVISIONING Form

Field Name	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Establishes an intertie between two DND site entities, NE-to-NE or NE-to-EU connection. ■ <i>DELETE</i> - Deletes the intertie and related data from the DND database. ■ <i>MODIFY</i> - Change the Intertie Information, which includes the Intertie ID, Intertie Type and Remarks. ■ <i>ADDPORTS</i> - Adds ports (in pairs for NE-to-NE, a single port for NE-to-EU) to the intertie. ■ <i>DELPORTS</i> - Deletes the ports (in pairs for NE-to-NE, a single port for NE-to-EU) from the intertie.
Site Name	(Combo box) Mandatory. (For SITE 1 and SITE 2, if SITE 2 is a Network Element) Name of the Site entity. If SITE 2 is an End User, select the End User check box. By default, the list appears alphabetically. To change the sorting order, modify the setting for the SORT_NAME_BY variable using the DND Forms Interface.
Speed (Port)	(Radio buttons) The speed designated to ports added to both sides of the intertie. The speeds displayed are dependent on the type of sites connected to the intertie. Valid choices are: ■ DS3 (43 Mb/s) ■ DS1 (1.5Mb/s), E1 (2Mb/s) ■ DS0 (64 kb/s)

Table 7-3. Field Descriptions for the INTERTIE PROVISIONING Form (Continued)

Field Name	Description
Slot Number	(Text field) Mandatory. Enter the number of the slot for the SLOT TYPE previously selected. 1 or 2 digits. ■ DACS II AX slots: <i>01</i> through <i>11</i> ■ AAC/IMACS slots: P and W: <i>01</i> through <i>04</i> U: <i>01</i> through <i>08</i> ■ "Other" type slots: <i>01</i> through <i>99</i>.
Slot Type	(Radio buttons - appears only for DACS II AX, AAC/IMACS, and "Other" type SNMP elements.) Mandatory. Select the type of port to add to/delete from/modify on the intertie. Some typical choices are: ■ <i>P</i> - Server card (ISDN, ADPCM, IMUX, or FRS cards) used for providing internal services. ■ <i>U</i> - User card (voice, data, and alarm cards) ■ <i>W</i> - Wan card For the DACS II AX, this field is read-only and can only be <i>P</i>. For the AAC/IMACS, the choices are <i>P</i>, <i>U</i>, or <i>W</i>. For the "Other" type SNMP, the choices are any letter from <i>A</i> through <i>Z</i>.
Port Number	(Text field) Mandatory. Up to 3 digits. Enter the number of the port for the SLOT NUMBER previously selected. ■ DACS II AX ports: P: <i>01</i> through <i>28</i> ■ AAC/IMACS ports: P: <i>01</i> through <i>28</i> U: <i>01</i> through <i>08</i> W: <i>01</i> through <i>08</i> ■ "Other" type ports: <i>001</i> through <i>999</i>.

**Table 7-3. Field Descriptions for the INTERTIE PROVISIONING Form
(Continued)**

Field Name	Description
Intertie ID	(Text field) Mandatory. Enter the name you create for the intertie. Must be unique. 1 through 24 characters from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name.
Intertie Type	(Radio buttons) Mandatory. Types are: ■ <i>Direct</i> - direct connection between nodes; NE-to-EU interties default to Direct. ■ <i>Indirect</i> - connection between two NE nodes via a network, such as a SONET ring.
Remarks	(Text field - Optional) Free field to enter information about the intertie.
Intertie Bandwidth	(Read-only field) Appears on the form after ports have been added/deleted from it, indicates the bandwidth size (number of ports assigned to each side) before the execution of the current form.

**Table 7-3. Field Descriptions for the INTERTIE PROVISIONING Form
(Continued)**

Field Name	Description
NPC Specifier/NPC	(Radio buttons and text field - only appears on the form for interties with DACS II and/or DACS II ISX sites) Mandatory. Three choices for entering NPC data: ■ <i>ID</i> - If selected, Enter the NPC name in the NPC: field ■ <i>Hier</i> - If selected, enter the NPC's hierarchical number in the NPC: field ■ <i>Extd</i> - If selected, enter the NPC's extended number in the NPC: field.
MMFG Specifier/MMFG	(Radio buttons and text field - only appears on the form for interties with DACS II CEF sites) Mandatory. Two choices for entering MMFG data: ■ <i>ID</i> - If selected, Enter the MMFG name in the MMFG: field ■ <i>Number</i> - If selected, enter the MMFG number in the MMFG: field. The MMFG Number is <Unit # on DACS>-<MMFG #>, where MMFG # can be any number from 1-6, for example 11-4.
New Intertie Bandwidth	(Read-only field) Appears on the form after an <i>ADDPORTS/DELPOR</i> T S Action has executed. It indicates the bandwidth after the execution of the form.

Intertie Features

Features

Interties allow you to perform the following:

- Graphically monitor intertie NPC/MMFG/SNMP port alarm status
- Perform actions using the intertie “bubble”

Creating Interties from the Network Map

Interties can be create directly from the network map by:

1. Press the Shift key and hold while Right-clicking and holding on the SITE 1 Network Element icon.
2. Drag mouse towards the SITE 2 Network Element icon. A circle appears around the TO icon, and the intertie line is drawn on the map.
3. Release the mouse button once the pointer has reached the FROM icon.

Once the intertie drawing is completed, the INTERTIE PROVISIONING form will automatically appear on the screen, with the SITE 1 and SITE 2 information pre-populated.

Intertie Alarms

Similar to Network Elements, interties can have alarms if an NPC/MMFG/SNMP port connected to it at either Network Element site goes into alarm. Intertie alarms are indicated by the color of the intertie line, as described in Table 7-4.

Table 7-4. Intertie Alarm Color Scheme

Alarm Color	Explanation
Green	No port alarms
Yellow	The highest alarm state of any port on the entire intertie is a Minor alarm.
Red	The highest alarm state of any port on the entire intertie is a Major alarm.
Magenta	The highest alarm state of any port on the entire intertie is a Critical alarm.

Intertie Features (Continued)

Intertie Menu

With the intertie “bubble,” you can obtain intertie information or perform intertie actions directly from the intertie graphic. Right-click and hold the mouse button on the intertie “bubble” to display a pull-down menu (see Figure 7-4) with the choices described in Table 7-5:

Table 7-5. Intertie Pull-Down Menu Choices

If you select...	...Then DND will display...
Intertie Provisioning...	The INTERTIE PROVISIONING form to perform an action on the intertie
Intertie Port Report...	A report on the ports associated with the intertie
Intertie Alarm Report...	An alarm report for the ports associated with the intertie

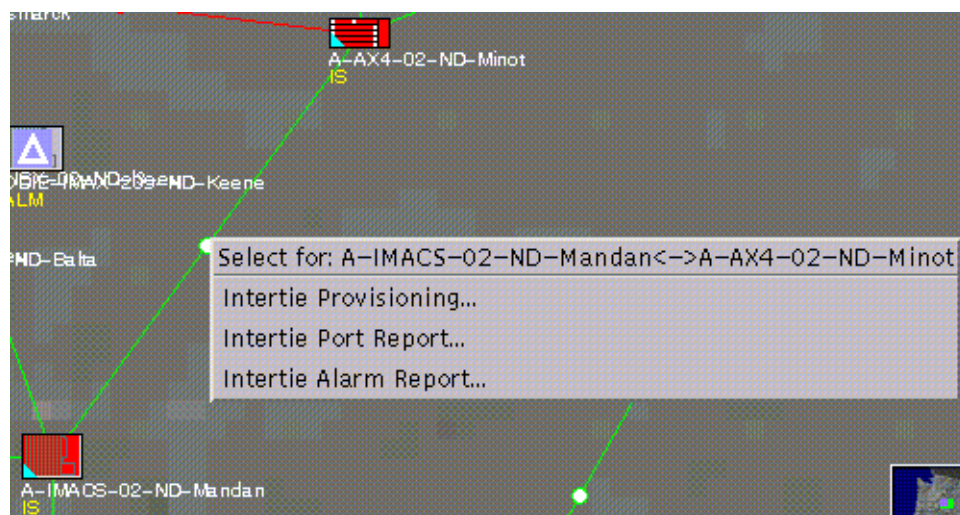


Figure 7-4. Intertie Menu

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Background

Introduction

Network Processing Circuits (NPCs), circuit building blocks, must be provisioned before circuits can be created. Provisioning takes place on two different levels:

- **Physical Provisioning** — Individual lines are brought to a DACS and are terminated there at circuit cards. Make sure unit and shelf equipment is In-Service and that the proper type of cards are inserted before beginning. This level of provisioning is beyond the scope of this manual, and must have already taken place before the DND can create service.
- **Logical Provisioning** — This action takes place on the DND. One of the primary functions of the DND is to simplify this operation for you. When an NPC is provisioned, you identify the operational characteristics of the NPC by using a form. These characteristics include the NPC type xyz values (e.g. E1 vs. DS1, signaling type), Performance Monitoring threshold information, and others. These characteristics are sent to the DACS in the form of MML commands and also saved in the local DND database. Once an NPC is provisioned at the DND and at the DACS, the channels of that NPC are available for cross connect.

Objectives

This chapter provides background information to help you perform the following:

1. Create NPCs
 2. Restore NPCs
 3. Modify NPCs
 4. Remove NPCs
 5. Delete NPCs
 6. Place an NPC in Loopback Mode
 7. Remove an NPC from Loopback Mode
 8. Query an NPC
 9. Browse NPCs.
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Creating NPCs	GT 8.1G
■ Creating a DSPU NPC	GT 8.2G
■ Restoring NPCs on a DACS	GT 8.3G
■ Modifying NPCs	GT 8.4G
■ Removing NPCs from a DACS	GT 8.5G
■ Deleting NPCs from a DACS	GT 8.6G
■ Placing an NPC in Loopback Mode	GT 8.7G
■ Removing an NPC from Loopback Mode	GT 8.8G

DND Forms:

■ Creating an NPC	GT 8.1U
■ Restoring an NPC on a DACS	GT 8.2U
■ Modifying an NPC	GT 8.3U
■ Removing an NPC from a DACS	GT 8.4U
■ Deleting an NPC from a DACS	GT 8.5U
■ Placing an NPC in Loopback Mode	GT 8.6U
■ Removing an NPC from Loopback Mode	GT 8.7U
■ Querying an NPC	GT 8.8U
■ Browsing NPCs	GT 8.9U

Related information

For related information see:

- *DACS II and DACS II ISX Operation and Maintenance Manual*
 - *DACS II Network Director Installation Manual.*
-

General Information

Major Actions

The major NPC provisioning actions are *CREATE*, *RESTORE*, *REMOVE*, and *DELETE*. These actions are based on the DACS concepts of “create equipment,” “place in service,” “remove from service,” and “disconnect equipment.”

DND GUI: Modifying NPCs

Most fields can be modified while the NPC is In-Service. When modifying fields which need to be Out-of-Service (OOS), make sure to select the Remove NPC checkbox during the MODIFY Action. DND will *REMOVE* the NPC, make the necessary changes, and *RESTORE* it back to service.

NPC Type and Parameters

The NPC is designated by **mnxyz**, where:

- **mn** refers to the NPC Type
- **xyz** refers to the NPC Parameters.

The NPC type, specified by the first two letters of the **NPC Type** field on the NPC PROVISIONING form, indicates the circuit pack type. The NPC parameters, the last 3 numbers or letter-number combination, indicates specific conditions relating to that circuit type. The **mnxyz** parameters may differ between NPC types. For additional information, refer to the NPC Provisioning chapter in the *DACS II* and *DACS II ISX Operation and Maintenance Manual*.

A default NPC type can be set by the DND administrator. This NPC Type will appear as the NPC Type for the **CREATE Action** on the NPC PROVISIONING form. Other options can also be defaulted. For additional information on setting the `ui_dval` file, refer to “Setting/Changing Default Values for NPC and Circuit Provisioning Forms” in GT 2.9U.

NPC provisioning profiles based on **NPC Type** can be created and made available for public or private use. Field values are specified once in a profile and can be re-used as is or modified when you *CREATE* new NPCs. For more information, refer to “DND GUI: NPC Profiles” on Page 8-38.

NPC Types

NPCs

The class of NPC is specified by the first two letters of the NPC **Type** field on the NPC PROVISIONING form. The DND system does not support every type of NPC supported by the DACS II and DACS II ISX, but it does support the NPCs listed in Table 8-1.

Table 8-1. NPC Types

NPC Type	Description
PA/PB/PC	■ E1 NPCs, define 30 or 31 64kb/sec channels ■ 2 NPCs on a DPC card ■ PB/PC defined for a 120/75 ohm (twisted pair/coax) ■ PA supports either 120/75 ohm ■ PA supports clear channel ■ ISX only supports PA
DE/DA	■ DS1 NPCs (NAS), define 24 64kb/s channels ■ 2 NPCs on a DDC card ■ ISX only supports DA
TE/TA	■ DS3U NPCs, 28 NPCs on a MUX circuit pack ■ Similar to DE/DA type NPCs
TH	■ Hybrid DS3U NPCs, 28 NPCs on a MUX circuit pack ■ Similar to PA type NPCs
MB	■ DSPU type NPC ■ Digital Multipoint bridge (broadcast/symmetrical conference) ■ DACSII (only supports DSPU)
MJ/SR	■ DSPU type NPC ■ Subrate circuits, subrate broadcast ■ DACS II (only supports DSPU)

(Continued on next page)

NPC Types (Continued)

NPCs, Continued **Table 8-1. NPC Types (Continued)**

NPC Type	Description
CB	■ DSPU type NPC ■ France Telecom C-bit Processor ■ DACS II only
SP	■ Digital Signal Processor ■ France Telecom C-bit Processor ■ ISX only
SD	■ DSP NPCs ■ define for DDS/X.50 Subrate ■ ISX only
Virtual	■ implied, not created by DND ■ DACS II only

NPC Types (Continued)

NPC Types Table The NPC **Types** are correlated in Table 8-2.

Table 8-2. NPC Provisioning Types

	<i>PB</i>	<i>PC</i>	<i>PA</i>	<i>DE</i>	<i>TE</i>	<i>TH</i>	<i>DA</i>	<i>TA</i>	<i>MB</i>	<i>MJ</i>	Vir- tual	CB	SP	SR
DACS II before Release 6.0	X	X		X	X				X	X	X			
DACS II, R6.0 and higher	X	X	X	X	X		X	X	X	X	X	X		X
DACS II, R8.0 and higher	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DACS II ISX Release 1.1 and higher			X				X						X	

NPC Availability

The NPCs available are dependent on the type of units that are grown on a particular DACS. Therefore, not every type of NPC is available for every DACS. For example, if there are no DS3 units grown, there cannot be a DS3 NPC in that DACS. For additional information on growing units on a DACS, refer to the *DACS II* and *DACS II ISX Operation and Maintenance Guides*.

DND Supported NPC Addressing

NPC Specifiers

There are three ways to specify an NPC. The choices are:

- **ID** - The name used to identify the NPC. This is defined when performing the *CREATE Action*.
- **Hier** - A logical hierarchical numbering scheme; it identifies the unit identifier, module identifier, and the NPC number all in one 5-digit number. Figure 8-1 illustrates an example of a hierarchical number.

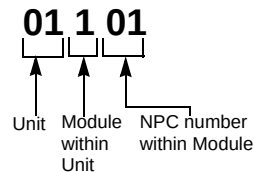


Figure 8-1. Hierarchical Number Example

- **Extended** - A sequential 3-digit or 4-digit numbering scheme of NPCs in the DACS.

The DACS II can be set to recognize either numbering scheme. This is described in the *Chapter 5, NE Provisioning*.

Specifying New or Existing NPCs

When specifying a new NPC, you must:

- Know the number of the NPC you are going to use (**Hier** or **Extd**)
- Give the NPC a name (**ID**)

When specifying a previously created NPC, you must:

- Know either the NPC name (**ID**) or number (**Hier** or **Extd**), or...
 - Specify the NPC identifier in the **NPC:** field
-

DND Supported NPC Addressing (Continued)

DND GUI: Specifying Conditions

When specifying NPCs, note the following conditions:

- If **Hier** - All five digits of the hierarchical NPC number are relevant and it is necessary to enter all five. Leading and trailing spaces are not allowed.
- If **Extd** - Lead zeros are not necessary to enter for extended NPC numbers. Enter the significant extended digits and the DND will fill in the other digits once Continue... is clicked. Trailing spaces are not allowed.
- If **ID** - The **ID** field is case-sensitive. ID characters must match exactly. A large number of characters are available and spaces between letters are allowed. Leading and trailing spaces are not allowed.

DND GUI: NPC Number Display

Once an NPC number has been entered and the form has been transitional (Continue... is clicked), the DND will display all three formats (**Hier**, **Extd** and **ID**). When one number scheme is selected, the other is generated and displayed by the DND. The conversion algorithm depends on the NPC type. The NPC Number equivalents are illustrated in the following three tables.

DND Supported NPC Addressing (Continued)

NPC Number Conversion

Table 8-3. NPC Number Equivalents for DACS II FTU Type Units

Extended	Hierarchical	Extended	Hierarchical
0001 to 0160	01101 to 01440	1761 to 1920	12101 to 12440
0161 to 0320	02101 to 02440	1921 to 2080	13101 to 13440
0321 to 0480	03101 to 03440	2081 to 2240	14101 to 14440
0481 to 0640	04101 to 04440	2241 to 2400	15101 to 15440
0641 to 0800	05101 to 05440	2401 to 2560	16101 to 16440
0801 to 0960	06101 to 06440	9961	99101
0961 to 1120	07101 to 07440	9962	99102
1121 to 1280	08101 to 08440	9963	99103
1281 to 1440	09101 to 09440	9964	00104
1441 to 1600	10101 to 10440	9965	99105
1601 to 1760	11101 to 11440	9966	99106

Table 8-4. NPC Number Equivalents for DACS II DSPU Type Units

Extended	Hierarchical	Extended	Hierarchical
0001 to 0002	01101 to 01102	...	...
0021 to 0022	01201 to 01202	0301 to 0302	02801 to 02802
...	...	...	...
0141 to 0142	01801 to 01802	2401 to 2402	16101 to 16102
0161 to 0162	02101 to 02102	...	...
0181 to 0182	02201 to 02202	2541 to 2542	16801 to 16802

(Continued on next page)

DND Supported NPC Addressing (Continued)

NPC Number Conversion, Continued

Table 8-5. NPC Number Equivalents for DACS II DS3U Type Units

Extended	Hierarchical	Extended	Hierarchical
0001 to 0160	01101 to 01620	...	...
016A to 016H	01621 to 01628	2401 to 2560	16101 to 16620
0161 to 0320	02101 to 02620	256A to 256H	16621 to 16628
032A to 032H	02621 to 02628		

NPC Numbering for TH-type NPCs on HMXR cards

NPC Numbering for the TH-type NPCs on a Hybrid DS3 HMXR card is slightly different from other MXR cards. The range of TH-type NPCs (1 through 28) is the same as other MXR types, however, every 4th NPC on the HMXR does not exist (i.e. cannot be provisioned). This means that NPCs 4, 8, 12, 16, 20, 24, and 28 on the HMXR card cannot be provisioned at the DACS II. If attempted, a denial will be issued by the DACS II.

Performance Monitoring

Description

In the DND GUI, the PERFORMANCE MONITORING SPECIFICATION form is displayed when the **Specify PM Options** button is clicked on the NPC PROVISIONING form. The PERFORMANCE MONITORING SPECIFICATION form allows you to set the thresholds for generating various types of facility performance alarms. These fields are available for PA/PB/PC/DE/TE/TH NPC Types. For all other NPC types, the **Specify PM Options** button is inactive. A DACS II does not send a facility performance alarm message until a parameter error rate has exceeded a stored threshold.

Data Sets

For North American Standard (NAS) type NPCs (DA/DE/TE) PM thresholds for each parameter are defined in terms of data sets 0,1,2, and 3. Data set 0 is defined at the DACS by default. The other optional data sets must be provisioned directly at the DACS using the ED-OPT-T1 command.

For CEPT type NPCs (PA/PB/PC/TH) PM thresholds are defined in terms of an alarm severity and a data set. The alarm severities are Informational, Minor, Major or Critical. The data sets are defined in terms of Default (D), 1,2 and 3. Additionally, the PM monitoring for a PM attribute can also be turned off (defined as NONE). The default data set defined by the DACS is D (e.g. Default Informational, Default Minor, etc.). The other optional data sets must be provisioned directly at the DACS using the ED-OPT-T1 command.

**NOTE:**

If a data set is *not* defined in the DACS, it will reject requests for a data set value.

CEPT Threshold Setting

To choose a threshold setting for a CEPT NPC, use the following format:

n ccc

where:

n	is 1, 2, 3, or D, referring to data set 1, data set 2, data set 3 or the default data set.
ccc	is <i>Cri</i> , <i>Maj</i> , <i>Min</i> , or <i>Inf</i> , referring to alarm severities of Critical, Major, Minor or Informational. <i>D Inf</i> is the default.

To disable performance monitoring for an attribute, choose NONE.

Performance Monitoring (Continued)

CEPT Performance Parameters

For example, an entry of *D Inf* in the **15 Minute Count** of **Degraded Minutes** means use the threshold of the default data set for a **DM1H** alarm and send the alarm with informational severity when the threshold is exceeded.

Example: If the default threshold on errored seconds is 5, you enter *D Maj* under the **15 Minute Count** for **Errored Seconds**. If during any 15-minute period the number of errored seconds detected by the NPC exceeds 5 seconds, an *ERS15M* alarm of severity *MAJ* is asserted and is reported on DND terminals connected to the DACS. After the next 15-minute interval with less than 5 errored seconds, the DACS will clear the alarm and send a message to the DND indicating that the performance alarm has been cleared.

Table 8-6. Alarms for CEPT NPC Performance Parameters for PB/PC Types

	Near End 15 Minute Count	Near End 24 Hour Count
Slips	SLIP15M alarm	SLIP24H alarm
Unavailable Seconds	US15M alarm	US24H alarm
Errored Seconds	ERS15M alarm	ERS24H alarm
Severly Errored Seconds	SERS15M alarm	SERS24H alarm
Degraded Minutes	DM1H alarm	DM24H alarm

Performance Monitoring (Continued)

CEPT Performance Parameters, PA/TH-Type NPCs

The performance monitoring capabilities of Type PA/TH NPCs is more sophisticated. These parameters along with the alarms resulting from their thresholds being exceeded are shown in the next table, organized by near end (NE) and far end (FE).

Table 8-7. Alarms For CEPT NPC Performance Parameters For Type PA/TH

	Near End 24 Hour Count	Far End 24 End Count	Near End 15 Minute Count	Far End 15 Minute Count
CRC Block Errors	CRCDAILY	FEBEDAILY	CRC15MIN	FEBE15MIN
Errored Seconds	ESDAILY	FESDAILY	ES15MIN	FES15MIN
Severely Errored Seconds	SESDAILY	FSESDAILY	SES15MIN	FSES15MIN
Unavailable Seconds	UASDAILY	FUASDAILY	UAS15MIN	FUAS15MIN
Framing Errors	FRERDAILY		FRER15MIN	
Out-of-Frame Seconds	OFSDAILY		OFS15MIN	
Controlled Slip Seconds	CSSDAILY		CSS15MIN	
Coding Violations	CVDAILY		CV15MIN	
Unavailable Time Count	UATCDAILY		UATC15MIN	
Multiframe Errors	MERDAILY		MER15MIN	



NOTE:

Not all options will appear for all PA-Type NPCs.

Performance Monitoring (Continued)

NAS Threshold Setting

The possible selections of field values for an NAS NPC are: **n**

where: **n** is 0, 1, 2, or 3, referring to data sets 0, 1, 2, or 3. The default is 0.

The types of performance parameters are classified in Table 8-8.

Table 8-8. Alarms For NAS NPC Performance Parameters

	Minor Alarm Option	Major Alarm Option
Slips	SLIP, severity Minor	SLIP, severity Major
Bit Error Rate	BER, severity Minor	BER, severity Major
Frame Alignment	COFA, severity Minor	COFA, severity Major
Errored Seconds		severity Major
Severe Errored Seconds		severity Major

A severity of *Minor* is not defined for **Errored Seconds** and **Severe Errored Seconds** for NAS NPCs.

DND GUI: The NPC Provisioning Form

NPC Provisioning Form

This is an example of the NPC PROVISIONING form after it has been filled in. On this form, the NPC to **CREATE** is identified. The DND displays a default value for the **NPC Type**. You can click **Continue...** to accept the default, or click **Specify XYZ Detail** to change the NPC Type.

Far End Site is automatically filled in if the Site has an intertie

New NPC can be based on Profile ID

Current Service State of NPC

An NPC name or number must be entered

Enter/Select DACS Provisioning Options

Enter/Select DND Processing Options

Enter Profile ID and Availability and click Save to create a profile

Select to perform the Restore NPC Action using the same form

Unsigned Java Applet Window

The screenshot shows the 'NPC PROVISIONING' form with the following fields and options:

- Site Name:** CEF2
- Profile ID:** (no profile)
- Far End Site:** (empty)
- Action:** CREATE
- NPC ID:** np02301
- Hier:** 02301
- Extd:** 0241
- NPC Range:** 2
- NPC Type:** PB100
- Service State:** UNEQ
- DACS Provisioning Options:**
 - Insertion Word (IW):
 - Alarm Indication Signal (AIS): Inf, Min, Maj, Crit
 - Intervention Level: 1, 2, 3, 4, 5, 6
- DND Provisioning Options:**
 - Alarm Age: 0000
 - Disable Alarm Reporting:
- Control Options:**
 - Reconcile Mode: DND and DACS, DND only, DACS only
 - Execution Mode: Immediate, Schedule
 - Additional Action: Restore NPC (checked)
- Profile:**
 - Save, Delete buttons
 - Profile ID: (no profile)
 - Availability: Private, Public

Buttons at the bottom: Back, Start, Close.

Footer: ? The name of the profile. Press Start button to start the requested action.

Figure 8-2. DND GUI: NPC Provisioning Form, Section 1: CREATE Action

DND GUI: The NPC Provisioning Form (Continued)

NPC XYZ Options Form

This is an auxiliary form to the NPC PROVISIONING form. Use this form to specify the NPC Type and parameters. To display this form, click **Specify XYZ Details** on the NPC PROVISIONING form. When this form is completed, the original NPC PROVISIONING form will appear with **Specify XYZ Details** inactive and **Specify PM Options** active.

Select XYZ Options using the **Common Choices** field, the **XYZ Value** fields, the **Next XYZ** buttons, or the explanation field below it

These fields will automatically change according to the selected X,Y, or Z values (read-only)

Figure 8-3. DND GUI: NPC Provisioning Form, Section 2: NPC XYZ Options (PB/PC Type)

When all XYZ options have been selected, click **Continue...** to display all fields in read-only mode. Click **Apply** to apply these changes to the NPC PROVISIONING form.

If you click **Close**, you will lose all information entered on the form.

DND GUI: The NPC Provisioning Form (Continued)

Performance Monitoring Specification Form

This is another auxiliary form to the NPC PROVISIONING form. Use this form to specify the performance monitoring options. To display this form, click **Specify PM Options** on the NPC PROVISIONING form. When completed, the original NPC PROVISIONING form will appear with both the **Specify XYZ Details** and **Specify PM Options** buttons inactive.

The screenshot shows the "PERFORMANCE MONITORING SPECIFICATION" window. At the top, it displays "NPC Type: PA100" and "DACS CMM Number: 31363". Below this, there are fields for "ID: npc02401", "Hier: 02401", and "Ext: 0281". A label "Select alarm level here" points to the "alarm level" dropdown menu, which is currently set to "Inf - (Maintenance Informational)".

Under the "Define PM threshold/alarm settings" section, there is a "data set" dropdown menu set to "D - (Default)". An annotation "Select data set here" points to this dropdown. Below the dropdown are two buttons: "Apply to Selected" and "Select all Parameters". An annotation "Click to apply the selected options to the data set" points to the "Apply to Selected" button. Another annotation "Click to Select all Parameters to the data set" points to the "Select all Parameters" button.

The form is divided into four sections for threshold settings, each with a list of metrics and a "D Inf" button. The "Near End 15 Minute Counts" section includes: CRC Block Errors, Errored Seconds, Severely Errored Seconds, Unavailable Seconds, Framing Errors, Out-of-Frame Seconds, Controlled Slip Seconds, Coding Violations, Unavailable Time Count, and Multiframe Errors. The "Near End 24 Hour Counts" section includes the same metrics. The "Far End 15 Minute Counts" section includes: CRC Block Errors, Errored Seconds, Severely Errored Seconds, and Unavailable Seconds. The "Far End 24 Hour Counts" section includes the same metrics. An annotation "Data set threshold options" points to the "D Inf" buttons in the "Near End 15 Minute Counts" section.

At the bottom, there are "Continue..." and "Close" buttons. A note at the bottom states: "? The data set at the DACS which defines the thresholds". The window title bar indicates it is an "Unsigned Java Applet Window".

Figure 8-4. DND GUI: NPC Provisioning Form, Section 3: Performance Monitoring Options (PA Type)

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Performance Monitoring Specification Form, Continued

After **Apply to Selected** is clicked, click **Continue...** and then **Apply** to return back to the NPC PROVISIONING form.

If you click **Close** on the NPC PROVISIONING form while the PERFORMANCE MONITORING SPECIFICATION form active, when **Apply** is clicked, the NPC PROVISIONING form will reappear with the same information it contained when the PERFORMANCE MONITORING SPECIFICATION form was initially displayed.

**NOTE:**

To change the defaults that are selectable for the NPC Provisioning form, the NPC XYZ OPTIONS form, and the PERFORMANCE MONITORING OPTIONS form, use the `ui_dval.ini` environment variable. For additional information, refer to *Chapter 2, Getting Started*.

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions The field values for the NPC PROVISIONING form are described in Table 8-9.

Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form

Field	Description
Site Name	(Combo box) Mandatory. Select the name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically.
Profile ID (top of form)	(Combo box) Optional. For the <i>CREATE</i> Action only, select an NPC profile that will be used as a basis for a new NPC. The profile and the new NPC must have the same NPC Type .
Alarm State	(Read-only field) The status of an alarm currently being received or asserted by this NPC. This field is under software control of the DND and cannot be changed by the user. The possible values are: ■ <i>OOS</i> - The NPC has been removed from service autonomously. ■ <i>CGA</i> - The alarm is a carrier group alarm (NAS). ■ <i>PBA</i> - The alarm is a primary block alarm (CEPT). ■ <i>PERF</i> - The alarm is a performance alarm of major severity. ■ <i>MAJ</i> - The alarm is of major severity and is not a performance alarm. ■ <i>MINR</i> - The alarm is of minor severity. ■ <i>NONE</i> - No alarm is asserted.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Service State	(Read-only field) The status of the NPC. This field cannot be changed by the user except as the result of an Action. Possible values: ■ <i>UEQD</i> - Unequipped. The NPC referenced by the NPC ID is not currently recorded in the DND and/or DACS databases (equipped). To place it there, use the <i>CREATE Action</i>. ■ <i>OOS</i> - Out of service. The NPC is currently equipped, but is not operable. To place it in service, use the <i>RESTORE Action</i>. To unequip it, use the <i>DELETE Action</i>. ■ <i>IS</i> - In service. The NPC is equipped and operable (ready for CIRCUIT PROVISIONING). To remove it from service, use the <i>REMOVE Action</i>. On currently unmapped channels in an NPC that is <i>IS</i>, the disconnect channel code is asserted repeatedly if there is one; otherwise, the NPC's Insertion Word is used as the default disconnect code. ■ <i>0 IS</i> - With reference to DSPU NPCs (DMB, CB102 circuit pack, and subrate NPCs), side 0 is in service and side 1 is out of service. ■ <i>1 IS</i> - With reference to DMB, CB102 circuit pack, and subrate NPCs, side 1 is in service and side 0 is out of service.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Adds a new NPC. ■ <i>RESTORE</i> - Places the specified NPC in service. An NPC must be in service before it can be used for CIRCUIT PROVISIONING. ■ <i>MODIFY</i> - Changes allowed combinations of fields for the specified NPC. These combinations are stated under "NPC Types" on Page 8-8. Constraints on possible new values of NPC Type are also stated there. ⇒ NOTE: If OOS is selected, changing the Type or Insertion Word of an <i>IS</i> NPC results in the DND placing the NPC in OOS Service State before making the change and then doing a <i>RESTORE</i> after the change. However, if OOS is unselected, the <i>MODIFY</i> is denied. ⇒ NOTE: Only those fields whose specification on the form differs from the DND database cause changes to be sent to the DACS. In particular, if the value is correct in the DND but is not correct in the DACS, a <i>MODIFY</i>, even in <i>DACS Only</i> mode, will not correct the value in the DACS.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form, (Continued)

Field	Description
Action (Continued)	■ <i>REMOVE</i> - Removes the specified NPC from service. ⇒ NOTE: Removing an NPC with active circuits may result in transmission loss for those circuits. An NPC carrying red-lined circuits cannot be removed unless Unconditional (INCL) (the "inclusive" keyword) is selected. ■ <i>DELETE</i> - Deletes the specified NPC. An NPC must be removed from service before it can be deleted. ■ <i>LOOPBACK</i> - Allows you to start, change, and stop the loopback setting on an NPC. You can select <i>LOOPBACK</i> for NPCs that are out of service (<i>OOS</i>), or in service (<i>IS</i>). In addition these actions can also be applied to a traffic-carrying NPC.
NPC Specifier	(Radio buttons) Choose a method for identifying the NPC. The choices are: ■ <i>ID</i> - NPC ID ■ <i>Hier</i> - hierarchical number ■ <i>Extd</i> - extended number.
NPC	(Text field) Based on your selection in the NPC Specifier field, enter the NPC's identifier in this field. Enter one of the following: an NPC ID, a hierarchical number, or an extended number.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
NPC Type	(Text field) Mandatory. The NPC Types are: ■ <i>PA</i> - For DACS II, Generic 6.0 and higher, and DACS II ISX Release 1.0, the hardware is a TG192 enhanced dual primary circuit (EDPC) supporting a CEPT 75/120-ohm NPC with enhanced functionality. <i>PA100</i> is the default value for ISX systems. Type <i>PAxCz</i> provides clear, framed E1 cross-connections and <i>PxDz</i> provides clear, unframed E1 cross-connections. Support of <i>PA</i>-Type NPCs is expanded to include the setting, modifying and querying of performance monitoring thresholds. And finally, you can provision and query the TS0 receive (NFS) spare bit manipulation settings. ■ <i>DE</i> - The hardware is a dual digroup card (DDC) supporting a NAS NPC for channelized DS1 signals or a TG80 Card for clear unframed DS1 signals (<i>DE9y9</i>). ■ <i>TA</i> - For DACS II, release 6.0 only, the hardware is a KCR5 and 6 within a DS3 card. Type <i>TAxy9</i> provides clear unframed cross-connections.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form, (Continued)

Field	Description
NPC Type (Continued)	■ <i>TE</i> - The hardware is a DS3 card for channelized or clear unframed DS1 (<i>TE9y9</i>). ■ <i>TH</i> - The hardware is a Hybrid DS3U. ■ <i>MB</i> - The hardware is a DMB card for DMB multipoint cross-connections. <i>xyz</i> must be <i>100</i>. ■ <i>MJ</i> - Multipoint Junction Unit (supported for NPC PROVISIONING, but not for CIRCUIT PROVISIONING). ■ <i>SR</i> - Subrate (supported for NPC PROVISIONING, but not for CIRCUIT PROVISIONING). ■ <i>SD</i> - For subrate provisioning for X.50 and X.57. The only supported option for this type is <i>SD111</i>. For <i>PA</i>, <i>PB</i>, <i>PC</i>, <i>DA/TA</i> and <i>DE</i> types, the <i>xyz</i> defines facility characteristics. For example, for <i>DE</i> types, <i>xyz</i> defines the framing format (<i>x</i> is 1-3), the line and signaling format (<i>y</i> is 0, 1, 2, 4), and the channel-counting sequence (<i>z</i> is 0 or 4). See the DACS I/O manuals.
New ID	(Text field) Appears for the MODIFY Action only. Specify the new name (if desired) for the NPC.
NPC Range	(Combo box) Optional. Select an NPC Range value if provisioning more than one NPC. The maximum range number is dependent on the module type. The provisioning action will be repeated on <i>n</i> NPCs, where <i>n</i> is the range given here. The default, <i>n=1</i> , denotes the NPC given by the NPC Specifier .

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
Side	(Radio buttons) Appears for types <i>MB</i> , <i>MJ</i> , and <i>SR</i> only. Specifies the side when the Action will change the Service Status of a duplex DSPU NPC. The choices are <i>0</i> or <i>1</i> . A value is required when the Action is <i>REMOVE</i> or <i>RESTORE</i> .
Alarm Age	(Text field) The number of seconds after a <i>CGA</i> or <i>PBA</i> message has been received or asserted, before action is taken by the DND. The choices are: ■ <i>x</i> - Age the alarm <i>x</i> seconds, where <i>x</i> is <i>1</i> through <i>9999</i> ■ <i>0</i> - Do not age the alarm, but act immediately (default)
Disable Alarm Reporting	(Checkbox) When selected, the DND will not display when new alarms have entered the system (no New Alarm Indicator). This corresponds to an Alarm Aging value of <i>-1</i> at the DND Forms Interface.
Insertion Word	(Text field) Two hex digits for NAS, 3 for CEPT, [<i>0-9</i> , <i>A-F/a-f</i>]. Specifies the 8-bit code transmitted by an <i>IS</i> NPC on unassigned channels. The third digit of a CEPT Insertion Word contains signaling-channel data. The default for NAS NPCs is <i>7F</i> and for CEPT is <i>D5D</i> . ➡ NOTE: On DACS II, Release 6.0, and DACS II ISX Release 1.0 frames, a <i>0</i> in the 7th bit (from the right) position generates a D4 yellow alarm for the NPC when the Insertion Word is transmitted

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Alarm Indication Signal (AIS)	(Radio buttons) The user-defined severity of an AIS alarm on this NPC. The choices are: ■ <i>Inf</i> - An AIS alarm is to be an Informational alarm ■ <i>Min</i> - An AIS alarm is to be a Minor alarm ■ <i>Maj</i> - An AIS alarm is to be a Major alarm ■ <i>Crit</i> - An AIS alarm is to be a Critical alarm. Available only for CEPT NPCs in DACS II Release 7.1 and higher, and DACS II ISX Release 2.1 and higher.
Intervention Level	(Available only for CEPT NPCs in DACS II R8.2.3 and higher/DACS II ISX R3.1 and higher.) This field appears if alarm intervention on the DACS and DND is turned ON. Set the alarm intervention level. Valid choices are: ■ 1 (Highest level) ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 (Lowest level).

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Far End Site	(Read-only field) Displays the name of the DACS/End User which is at the far end of the intertie, as entered by INTERTIE PROVISIONING. If this NPC is not assigned to an intertie, then this field is blank.
(NPC 2) ID	(Text field) Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name used to identify the second NPC of a DMB board. DMB NPCs must be grown in pairs. The <i>CREATE Action</i> associates the name and number. Only one ID can be associated with an NPC number within a DACS, and also, an ID can be associated with only one NPC. An ID uniquely identifies an NPC.
(NPC 2) Hier/Extd	(Read-only fields) Appears for NPC Type MB only. Hier indicates the hierarchical NPC 2 number. Extd indicates the extended NPC 2 number.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
TS0	(Text field) Time slot 0 transmit. Eight characters. Appears for CEPT NPCs only, and is accessible via the MODIFY Action. Describes how to process bits in time slot 0 for transmission. A single character is entered for each bit. The bit values are: ■ <i>P</i> - Cross-connect this bit position unchanged. ■ <i>0</i> - Overwrite the incoming bit with a <i>0</i> for this position. ■ <i>1</i> - Overwrite the incoming bit with a <i>1</i> for this position. ■ <i>V</i> - For NPC Type PA only, invert the value of this bit. ■ “-” - Leave setting for this bit unchanged. If either of the two rightmost bits is <i>P</i>, both must be <i>P</i>. Use either upper or lower case for <i>P</i> or <i>V</i>. The default is <i>11011111</i>.
TS0M	(Text field) Time slot 0 monitor. Eight characters. The field appears for CEPT NPCs only, and is accessible via the MODIFY Action. Describes what Time Slot 0 bits are to be monitored by the DACS. A single character is entered for each bit. The bit values are: ■ <i>0</i> - Stop monitoring the signal in this bit position. ■ <i>1</i> - Start monitoring the signal in this bit position. Whenever the DACS detects a change in a monitored TS0 bit, it generates an autonomous message. The default is <i>00000000</i>.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
NFS	(Text field) Non-frame word setting. Nine characters. This field appears for Type <i>PA</i> only, and is accessible by the <i>MODIFY Action</i>. Specifies how the spare bits in timeslot 0 are to be handled when they are cross-connected to a timeslot other than 0. This is a special case of the spare bit manipulation feature. Refer to the discussion of TS0 to non-TS0 cross-connects in the "Introduction" in <i>Chapter 9, Circuit Provisioning</i>. The field format is: <i>abcdefghi</i> where: ■ <i>a</i> - Is bit 1 of the FW ■ <i>bcdefghi</i> - Are bits 1-8 of the NFW Enter a single character for each bit. The bit values are: ■ <i>P</i> - Pass unchanged. ■ <i>V</i> - Pass inverted, except for bit <i>c</i>. ■ <i>0</i> - Set output to 0, except for bit <i>c</i>. ■ <i>1</i> - Set output to 1, except for bit <i>c</i>. ■ <i>"-"</i> - Leave setting for this bit unchanged. Bit <i>c</i> is passed unchanged in every case. If <i>h</i> or <i>i</i> are set to <i>P</i>, then the other of the two must be set to <i>P</i>. The creation default is <i>PPPPPPPP</i>.

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)**

Field	Description
Inclusive (INCL)	(Checkbox) Appears for the REMOVE Action only. It is parallel to the INCL selection of the Circuit Options field on the CIRCUIT PROVISIONING form; however, where the CIRCUIT PROVISIONING option applies to disconnecting or deactivating a circuit. When selected on the NPC PROVISIONING form, it allows the DND to REMOVE an NPC that is carrying a red-lined circuit.
Remove NPC (OOS)	(Checkbox) Appears for the MODIFY Action only. When selected, the DND will REMOVE an NPC if it is necessary, make the selected modifications, and RESTORE the NPC using the same form.
Delete NPC	(Checkbox) Appears for the REMOVE Action only. When selected, the DND will REMOVE and DELETE an NPC using the same form.
Restore NPC	(Checkbox) Appears for the CREATE Action only. When selected, the DND will CREATE and RESTORE an NPC using the same form.
Loopback Transmission	(Radio buttons) This option can be changed while a loopback is active to change the loopback signal transmission or the Performance Monitoring options. The choices are: ■ A - Starts looping the signals. Also sends AIS downstream or upstream, turns off facility Performance Monitoring, freezes alarm and parameter counts for the NPC

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued **Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form, (Continued)**

Field	Description
Loopback Transmission (Continued)	■ <i>B</i> - (PA type NPCs only) Starts looping the signals. Also sends AIS downstream or upstream and continues normal Performance Monitoring and alarm processing for the NPC ■ <i>C</i> - (PA type NPCs only) Starts looping the signal and transparently passes through the received signal. Turns off facility Performance Monitoring and freezes alarm and parameter counts for the NPC ■ <i>T</i> - Starts looping the signal and transparently passes through the received signal. Continues facility Performance Monitoring and alarm processing for the NPC ■ <i>N</i> - Stops looping the signal
Loopback Direction	(Radio buttons) This is a one character field to indicate the direction of the loopback. This is a mandatory field when the action selected is <i>LOOPBACK</i> and the NPC is a <i>PA</i> type. ■ <i>F</i> - Facility Loopback. This loops the incoming 2 Mbit/s bipolar signal back to the facility ■ <i>E</i> - Equipment loopback. This loops the outgoing 2 Mbit/s signal back to the DACS II equipment. This option is not applicable to PB/PC type NPCs ■ <i>N</i> - Stop loopback

(Continued on next page)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Reconcile Mode	(Radio buttons) Select the database where the current Action will take place. The choices are: ■ <i>DND and DACS</i> - Perform the Action to both the DND and DACS databases (default) ■ <i>DND only</i> - Perform the Action to the DND database only ■ <i>DACS only</i> - Perform the Action to the DACS database only
Execution Mode	(Radio buttons/Combo boxes and Text fields also if <i>Schedule</i> is selected) Select when the current Action should take place. The choices are: ■ <i>Immediate</i> - Executes the Action as soon as Execute is clicked ■ <i>Schedule</i> - Executes the Action at a time and frequency selected by the user. After selecting <i>Schedule</i>, click Continue... to display the following combo box fields: — DATE fields: Day: (01 thru 31) Month: (Jan thru Dec) Year: (1990 thru 2037) — TIME fields: Hour: (00 thru 23) Minute: (00 thru 59) — REPEAT fields: Number of times (enter any number) If number of times is set to "00", then the task repeats an infinite number of times (forever). Interval (enter any number) Scale: (None/Minutes/Hours/Days)

DND GUI: The NPC Provisioning Form (Continued)

Field Descriptions, Continued Table 8-9. DND GUI: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Profile ID (bottom of form)	(Text field) Specify a Profile ID to be saved or deleted. The Profile ID can include 11 alphanumeric characters. Spaces are not allowed.
Availability	(Radio buttons) For a new profile, indicate if the profile should be available to: ■ <i>PUBLIC</i> - all DND users ■ <i>PRIVATE</i> - Only your login.

DND GUI: NPC Profiles

Description

Specify field values once in a profile and save the profile to the database. Later, re-use the profile to *CREATE* new NPCs.

The NPC PROVISIONING form allows you to define profiles based on NPC Type and use them to create new NPCs with the same NPC Type.

A profile is identified by a **Profile ID** and contains all NPC provisioning information, including XYZ Detail and PM Options. Control Options are not saved as part of a profile. Each profile is marked as available for public use by all DND users, or for private use by your own login.

Profiles are based on NPC Type and can only be used to create NPCs of the same type. When you create a new NPC based on a profile, you can modify any of the provisioning information except NPC Type.

Actions for NPC Profiles

From the NPC PROVISIONING form, you can perform these NPC Profile Actions:

- To create a profile:

Specify **Action**: *CREATE* and supply all NPC parameters including NPC Type. In the **Profile** box at the bottom of the NPC PROVISIONING form, enter a **Profile ID**, specify the profile's availability, then click **Save**. If you also want to execute the form and create a new NPC, click **Execute**.

- To create a new NPC from a profile:

Specify **Action**: *CREATE*, select a **Profile ID**, enter NPC Number and NPC ID, modify data fields if necessary, select Control Options, and click **Execute**.

- To delete a profile:

In the **Profile** box at the bottom of the NPC PROVISIONING form, type a **Profile ID** and click **Delete**.

Figure 8-5 displays the **Profile** box.



The screenshot shows a dark-themed window titled "Profile". Inside, there are two buttons: "Save" (green) and "Delete" (red). To the right of these buttons is a text input field labeled "Profile ID:" containing the text "pb-prof". Further right is a section labeled "Availability:" containing two radio buttons: "Private" (which is checked) and "Public" (which is unchecked).

Figure 8-5. DND GUI: NPC PROVISIONING Form - Profile Box

DND GUI: NPC Range

Description

The NPC PROVISIONING form allows you to specify a range of NPCs to provision at a time. Once the first **NPC** in the range and the **NPC Range** is specified, the DND computes the NPCs within the range accessing the next available NPCs in the NPC Module (NPM). The number of NPCs available in the range is dependent on the module type. Figure 8-6 displays the **NPC Range** field.

The **NPC Range** specifies a number n where the **Action** is repeated on n consecutive NPCs, if possible. Refer to "Rules for NPC Ranges" on Page 8-41.

⇒ **NOTE:**
DND will specify consecutive blocks of available NPCs, beginning with the NPC number entered.

The screenshot shows the 'NPC PROVISIONING' window. At the top, there's a 'dnd' logo and an 'Alarms' button. Below, there are fields for 'Site Name' (WashingtonDC-CEF), 'Profile ID' (no profile), and 'Action' (CREATE). A section for 'NPC' contains 'ID' (npc-CustomerA), 'Hier' (01111), 'Extd' (0011), and 'NPC Range' (1). A dropdown menu for 'NPC Range' is open, showing a list from 1 to 12, with '1' selected. A label 'Select NPC Range here' with an arrow points to the dropdown. Below the NPC fields are 'NPC Type' (PB100), 'Specify XYZ Detail', 'Specify PM Options', and 'Service State' (UNE). At the bottom are buttons for 'Back', 'Continue...', 'Restart', and 'Close'. A warning message at the bottom states: 'WARNING: The NPC PM threshold options have been reset to default values'. The window title bar says 'Unsigned Java Applet Window'.

Figure 8-6. DND GUI: NPC PROVISIONING Form - NPC Range: Field

DND GUI: NPC Range (Continued)

NPC RANGE SPECIFICATION Form

The NPC RANGE SPECIFICATION form is automatically displayed on the screen when the **NPC Range:** is selected. This form, shown in Figure 8-7, displays the NPCs selected for the range, and allows the user to enter an **ID:** name for each NPC in the range for the **CREATE Action**.

Hier:	Ext:	ID:	Service State:
02401	0281	npc02401	UNEQ
02402	0282	npc02402	UNEQ
02403	0283	npc02403	UNEQ
02404	0284		UNEQ
02405	0285		UNEQ
02406	0286		UNEQ
02407	0287		UNEQ
02408	0288		UNEQ
02409	0289		UNEQ
02410	0290		UNEQ
02411	0291		UNEQ
02412	0292		UNEQ

Continue ... Restart Close

? The name of the NPC

Unsigned Java Applet Window

Figure 8-7. DND GUI: NPC RANGE SPECIFICATION Form - CREATE Action



NOTE:

The NPC **ID:** fields are “editable” for the **CREATE Action**, and read-only for other NPC provisioning actions.

DND GUI: NPC Range (Continued)

NPC Types Allowed

The NPC Range feature applies only to all DS1/E1 NPC types within a module and DS1 within a DS3 NPC types (TA/TE/TH).

Using Profiles

Profiles can be applied to a range of NPCs. Since all NPCs in the range will have the same attributes, profiles will speed up the provisioning process.

Rules for NPC Ranges

The following rules apply when provisioning a range of NPCs:

- If any NPC IDs (**ID:** field) are not entered on the NPC RANGE SPECIFICATION form, DND will provision the NPCs in the range with assigned **ID:** names and bypass the NPCs with empty **ID:** fields.

For example, if an **NPC Range:** of 10 is entered, and only the first 5 NPCs and the 10th NPC have names entered on the NPC RANGE SPECIFICATION form, then only the first 5 and the 10th NPC will be provisioned.

- DND will only restore NPCs which are OOS. If a range of NPCs are restored, DND will restore the NPCs in the range with a **Service State:** of OOS, and bypass the NPCs with other service states.

This concept also applies to the *GROW*, *DELETE*, and *REMOVE* actions. If the DND detects a conflict in **Service State:** with particular NPCs, those NPCs will be bypassed.

- When an **NPC Range:** is specified, DND will not allow the modification of **ID:** names. To change an NPC **ID:**, an NPC must be modified individually.
 - A provisioning action cannot be scheduled for a range of NPCs.
-

DND Forms: NPC Provisioning Form

Overview

When you use the DND Forms interface for NPC Provisioning, the fields that appear on the screen are dependent on the entries in the **Type:** and the **Action:** fields. The following screen examples show the variations of the NPC PROVISIONING form that can appear for the **CREATE Action**.

CEPT NPC Provisioning Form (Types PB/PC)

The CEPT NPC Provisioning form appears by default. Default values provided by the DACS appear in the **Type:**, **IW:**, **TSO:**, and **TSOM:** fields.

DND USER INTERFACE

12:16 17 Dec 1999
Status:
Alarms:

NPC PROVISIONING

Site Name: CEF2 Alarm State: NONE Service State: IS
 Action: CREATE NPC ID: npc02111
 Type: PB100 Number (Hier): 02111 (Ext): 0171 Alarm Aging: 0000 IW: D5D AIS: MJ
 FE Site: TSO: 11011111 TSOM: 00000000
 Lpbk Trans: N Interv. Level: 3

	Short Interval Option	Long Interval Option
Slips	<u>D Inf</u>	<u>D Inf</u>
Degraded Minutes	<u>D Inf</u>	<u>D Inf</u>
Unavailable Seconds	<u>D Inf</u>	<u>D Inf</u>
Errored Seconds	<u>D Inf</u>	<u>D Inf</u>
Sev Errored Seconds	<u>D Inf</u>	<u>D Inf</u>

Enter the site name. _____

garfield: UI-01

HELP CHOICES NEXTPAGE QUIT RECNCILE TOP MENU PRINT EXECUTE

Figure 8-8. DND Forms: CEPT NPC Provisioning Form (Types PB/PC)

DND Forms: NPC Provisioning Form (Continued)

Substrate NPC Provisioning Form (Type SD) The Substrate NPC Provisioning form appears if an SD111 is entered for the NPC Type.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following text:

```
13:32 23 Oct 1998
Status:
Alarms:

NPC PROVISIONING

Site Name: DACSWest-X25 Alarm State:___ Service State:___
Action: CREATE NPC ID: DSPP-1
Type: SD111 Number (Hier): 02201 (Ext): 0181

Enter the site name.

snoopy: UI-00
HELP CHOICES NEXTPAGE QUIT RECNCILE TOP MENU PRINT EXECUTE
```

Figure 8-9. DND Forms: Substrate NPC Provisioning Form (Type SD)

DND Forms: NPC Provisioning Form (Continued)

Enhanced CEPT NPC Provisioning Form (Type PA/TH)

The Enhanced CEPT NPC Provisioning form appears if a PA or TH type NPC is entered for the NPC Type.

The screenshot displays the 'DND USER INTERFACE' window. At the top left, it shows the date '17:06 17 Dec 1999' and 'Status: Alarms:'. The main title is 'NPC PROVISIONING'. Below this, the form contains the following fields and values:

- Site Name: **CEF2**
- Alarm State: Service State:
- Action: **CREATE** NPC ID: **npc02201**
- Type: **PA100** Number (Hier): **02201** (Ext): **0201** Alarm Aging: **0000** IW: AIS: **MJ**
- FE Site: TS0: **11011111** TS0M: **00000000** NFS: **PPPPPPPP**
- Lpbk Trans:** **N** **Dir:** **N** Interv. Level: **2**

Below these fields is a table of error statistics:

	Daily NE	Daily FE	15-Min NE	15-Min FE
CRC Block Errors	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Errored Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Sev Errored Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Unavailable Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Framing Errors	<u>D Inf</u>		<u>D Inf</u>	
Out-of-Frame Seconds	<u>D Inf</u>		<u>D Inf</u>	
Controlled Slip Seconds	<u>D Inf</u>		<u>D Inf</u>	
Coding Violations	<u>D Inf</u>		<u>D Inf</u>	
Unavailable Time Count	<u>D Inf</u>		<u>D Inf</u>	
Multiframe Errors	<u>D Inf</u>		<u>D Inf</u>	

Below the table, it says 'Enter the Intervention Level. '. At the bottom right, it says 'garfield: UI-02'. The bottom of the window contains a row of buttons: **HELP**, **CHOICES**, **NEXTPAGE**, **QUIT**, **RECNCILE**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 8-10. DND Forms: Enhanced CEPT NPC Provisioning Form (Type PA or TH)

NAS NPC Provisioning Form (Type DE/TE)	The NAS NPC Provisioning form appears if a DE or TE type NPC is entered for the NPC Type .

```

DND USER INTERFACE
13:40 23 Oct 1998
Status:
Alarms:

NPC PROVISIONING

Site Name: DACSEast-SNIDER Alarm State:      Service State:     
Action: CREATE NPC ID: testnpc2
Type: DE100 Number (Hier): 02201 (Ext): 0201 Alarm Aging: 0000 IW:      AIS: MJ
FE Site: DACSCentral-SNIDER

Minor Alarm Option      Major Alarm Option
Slips                   0
Bit Error Rate          0
Frame Alignment         0
Errored Seconds         0
Sev Errored Seconds     0

Enter the far-end site name.

snoopy: UI-00
HELP NEXTPAGE QUIT RECNCILE TOP MENU PRINT EXECUTE

```

Figure 8-11. DND Forms: NAS NPC Provisioning Form (Type DE/TE)

DND Forms: NPC Provisioning Form (Continued)

Enhanced NAS NPC Provisioning Form (Type DA/ TA)

The Enhanced NAS NPC NPC Provisioning form appears if a DA or TA type NPC is entered for the NPC **Type**.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following text:

```
13:42 23 Oct 1998
Status:
Alarms:
NPC PROVISIONING
Site Name: DACSWest-X25 Alarm State:      Service State: UEQD
Action: CREATE NPC ID: testnpc2
Type: DA100 Number (Hier): 02201 (Ext): 0201 Alarm Aging: 0000 IW:      AIS: MJ
FE Site: DACSEast-X25
Enter the far-end site name.
snoopy: UI-00
HELP NEXTPAGE QUIT RECNCILE TOP MENU PRINT EXECUTE
```

**Figure 8-12. DND Forms: Enhanced NAS NPC Provisioning Form
(Type DA/TA)**

DND Forms: NPC Provisioning Form (Continued)

Clear DS1 NAS NPC Provisioning Form (Type DE9y9)

The Clear DS1 NAS NPC NPC Provisioning form appears if a DE9y9 type NPC is entered for the NPC Type.

The screenshot displays the 'DND USER INTERFACE' window. At the top left, it shows the date and time '13:45 23 Oct 1998', followed by 'Status:' and 'Alarms:'. The main section is titled 'NPC PROVISIONING'. It contains several fields: 'Site Name' (DACSnest-X25), 'Alarm State' (blank), 'Service State' (blank), 'Action' (CREATE), 'NPC ID' (testnpc10), 'Type' (DE919), 'Number (Hier)' (03301), '(Ext)' (0401), 'Alarm Aging' (0000), and 'AIS' (MJ). Below these, 'FE Site' is set to DACSCentral-X25. A table-like section shows 'Slips' and 'Bit Error Rate' with 'Minor Alarm Option' and 'Major Alarm Option' columns, all containing the value '0'. At the bottom, there is a prompt 'Enter the site name.' and a 'snoopy: UI-00' status. A row of buttons at the very bottom includes HELP, CHOICES, NEXTPAGE, QUIT, RECNCILE, TOP MENU, PRINT, and EXECUTE.

NPC PROVISIONING												
Site Name:	DACSnest-X25	Alarm State:	Service State:									
Action:	CREATE	NPC ID:	testnpc10									
Type:	DE919	Number (Hier):	03301 (Ext): 0401									
Alarm Aging:	0000	AIS:	MJ									
FE Site:	DACSCentral-X25											
<table border="1"><thead><tr><th></th><th>Minor Alarm Option</th><th>Major Alarm Option</th></tr></thead><tbody><tr><td>Slips</td><td>0</td><td>0</td></tr><tr><td>Bit Error Rate</td><td>0</td><td>0</td></tr></tbody></table>					Minor Alarm Option	Major Alarm Option	Slips	0	0	Bit Error Rate	0	0
	Minor Alarm Option	Major Alarm Option										
Slips	0	0										
Bit Error Rate	0	0										
Enter the site name.												
snoopy: UI-00												
[HELP] [CHOICES] [NEXTPAGE] [QUIT] [RECNCILE] [TOP MENU] [PRINT] [EXECUTE]												

Figure 8-13. DND Forms: DS1 NAS NPC Provisioning Form (Type DE9y9)

DND Forms: NPC Provisioning Form (Continued)

Clear DS1 through DS3 NAS NPC Provisioning Form (Type TE9y9) The Clear DS1 through DS3 NAS NPC Provisioning form appears if a TE9y9 type NPC is entered for the NPC **Type**.

The screenshot displays the 'DND USER INTERFACE' window. At the top left, it shows the date and time '13:47 23 Oct 1998', followed by 'Status:' and 'Alarms:'. The main section is titled 'NPC PROVISIONING' and contains the following fields:

- Site Name: **DACSHest-X25**
- Alarm State: _____ Service State: _____
- Action: **CREATE** NPC ID: **testnpc10**
- Type: **TE919** Number (Hier): **01108** (Ext): **0008** Alarm Aging: **0000** AIS: **MJ**
- FE Site: **DACSCentral-X25**

Below these fields, there are three columns: 'Slips', 'Minor Alarm Option', and 'Major Alarm Option'. The 'Minor Alarm Option' and 'Major Alarm Option' columns have a value of **0** in the first row, with vertical dots indicating further rows. At the bottom of the form, there is a text entry field labeled 'Enter the far-end site name.' and a status indicator 'snoopy: UI-00'. The bottom of the window features a series of buttons: **HELP**, **NEXTPAGE**, **QUIT**, **RECNCILE**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 8-14. DND Forms: DS1 NAS NPC Provisioning Form (Type TE9y9)

DND Forms: NPC Provisioning Form (Continued)

DMB NPC Provisioning Form (Type MB)

The DMB NPC Provisioning form appears if a MB type NPC is entered for the NPC Type.

DND USER INTERFACE

13:51 23 Oct 1998
Status:
Alarms:

NPC PROVISIONING

Site Name: SXCentral-SNIDER Alarm State: Service State:
Action: CREATE NPC ID: DMB-1
Type: MB100 Number (Hier): 01101 (Ext): 0001

The NPC number is required
Enter the site name.

snoopy: UI-00

HELP CHOICES NEXTPAGE QUIT RECNCILE TOP MENU PRINT EXECUTE

Figure 8-15. DND Forms: DMB NPC Provisioning Form (Type MB)

DND Forms: NPC Provisioning Form (Continued)

Field Descriptions The field values for the NPC PROVISIONING form are described in Table 8-10.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See <i>Chapter 5, NE Provisioning</i> for more details.
Alarm State	The status of an alarm currently being received or asserted by this NPC. This field is under software control of the DND and cannot be changed by the user. The possible values are: ■ <i>OOS</i> - The NPC has been removed from service autonomously. ■ <i>LOS</i> - The alarm is a loss-of-signal alarm. ■ <i>CGA</i> - The alarm is a carrier group alarm (NAS). ■ <i>PBA</i> - The alarm is a primary block alarm (CEPT). ■ <i>PERF</i> - The alarm is a performance alarm of major severity. ■ <i>CRIT</i> - The alarm is of critical severity. ■ <i>MAJ</i> - The alarm is of major severity and is not a performance alarm. ■ <i>MINR</i> - The alarm is of minor severity. ■ <i>INFO</i> - The alarm is an informational alarm. ■ <i>NONE</i> - No alarm is asserted. ■ <i>blanks</i> - The NPC is not yet registered in the DND database.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Service State	The status of the NPC. This field cannot be changed by the user except as the result of an Action. Possible values: ■ <i>UEQD</i> - Unequipped. The NPC referenced by the NPC ID is not currently recorded in the DND and/or DACS databases (equipped). To place it there, use the <i>CREATE Action</i>. ■ <i>OOS</i> - Out of service. The NPC is currently equipped, but is not operable. To place it in service, use the <i>RESTORE</i> command. To unequip it, use the <i>DELETE</i> command. ■ <i>IS</i> - In service. The NPC is equipped and operable (ready for CIRCUIT PROVISIONING). To remove it from service, use the <i>REMOVE Action</i>. On currently unmapped channels in an NPC that is <i>IS</i>, the disconnect channel code (DCC of the cross-connect disconnect command) is asserted if there is one; otherwise, the NPC's IW is used as the default disconnect code. ■ <i>0 IS</i> - With reference to DMB, CB102 circuit pack, and subrate NPCs, side 0 is in service and side 1 is out of service. ■ <i>1 IS</i> - With reference to DMB, CB102 circuit pack, and subrate NPCs, side 1 is in service and side 0 is out of service.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Action	■ <i>CREATE</i> - Adds a new NPC. ■ <i>DELETE</i> - Deletes the specified NPC. An NPC must be removed from service before it can be deleted. ■ <i>MODIFY</i> - Changes allowed combinations of fields for the specified NPC. These combinations are stated under "NPC Types" on Page 8-8. Constraints on possible new values of Type are also stated there. ⇒ NOTE: If OOS is set to <i>Yes</i>, changing the Type or IW of an <i>IS</i> NPC results in the DND placing the NPC in OOS Service State before making the change and in doing a <i>RESTORE</i> after the change. However, if OOS is set to <i>No</i>, the <i>MODIFY</i> is denied. ⇒ NOTE: Only those fields whose specification on the form differs from the DND database cause changes to be sent to the DACS. In particular, if the value is correct in the DND but is not correct in the DACS, a <i>MODIFY</i>, even in <i>Site Only</i> mode, will not correct the value in the DACS. ■ <i>RESTORE</i> - Places the specified NPC in service. An NPC must be in service before it can be used for CIRCUITPROVISIONING. ■ <i>QUERY</i> - Requests the current state of the NPC from the DACS and displays the data received upon successful completion of the <i>QUERY</i>. This is especially useful for displaying the current performance monitoring counts on the NPC.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Action (Continued)	■ <i>REMOVE</i> - Removes the specified NPC from service. ⇒ NOTE: Removing an NPC with active circuits may result in transmission loss for those circuits. - An NPC carrying red-lined circuits cannot be removed unless INCL is <i>YES</i>. ■ <i>BROWSE</i> - Gives you read-only access to the DND database for retrieving and scrolling NPC records. You can use wild-card characters (*?), in the NPC ID field only, to match any character or set of characters. ■ <i>LOOPBACK</i> - Allows you to start, change, and stop the loopback setting on an NPC. You can select <i>LOOPBACK</i> for NPCs that are out of service (<i>OOS</i>), or in service (<i>IS</i>). In addition this actions can also be applied to a traffic-carrying NPC.
NPC ID	Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name, associated with the specified Number. The <i>CREATE Action</i> associates the name and number. Only one NPC ID can be associated with a Number within a DACS, and also, an NPC ID can be associated with only one NPC. An NPC ID uniquely identifies an NPC.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Type	■ <i>PA</i> - For DACS II, Generic 6.0 and higher, and DACS II ISX Release 1.0, the hardware is a TG192 enhanced dual primary circuit (EDPC) supporting a CEPT 75/120-ohm NPC with enhanced functionality. <i>PA100</i> is the default value for ISX systems. Type <i>PACz</i> provides clear, framed E1 cross-connections and <i>PADz</i> provides clear, unframed E1 cross-connections. Support of PA-Type NPCs is expanded to include the setting, modifying and querying of performance monitoring thresholds. And finally, you can provision and query the TS0 receive (NFS) spare bit manipulation settings. ■ <i>PB/PC</i> - The hardware is a TG182, TG185, TG187, or TG192 dual primary circuit (DPC) supporting a CEPT 75-ohm (PC-type) or 120-ohm (PB-type) NPC with the following PA-type capabilities: — Setting, modifying and querying of performance monitoring thresholds. — Provision and query the TS0 receive (NFS) spare bit manipulation settings. ■ <i>DE</i> - The hardware is a dual digroup card (DDC) supporting a NAS NPC for channelized DS1 signals or a TG80 Card for clear unframed DS1 signals (<i>DE9y9</i>). ■ <i>TA</i> - For DACS II, release 6.0 only, the hardware is a KCR5 and 6 within a DS3 card. Type <i>TAXy9</i> provides clear unframed cross-connections. ■ <i>TE</i> - The hardware is a DS3 card for channelized or clear unframed DS1 (<i>TE9y9</i>). ■ <i>TH</i> - The hardware is a HMXR card for channelized or clear E1. ■ <i>MB</i> - The hardware is a DMB card for DMB multipoint cross-connections. xyz must be <i>100</i>.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Type , Continued	■ <i>MJ</i> - Not available. ■ <i>SR</i> - Not available. ■ <i>SD</i> - For substrate provisioning for X.50 and X.57. The only option for this type is <i>SD111</i>. For <i>PA</i>, <i>PB</i>, <i>PC</i>, <i>DATA</i>, <i>DE</i> and <i>TH</i> types, the <i>xyz</i> defines facility characteristics. For example, for <i>DE</i> types, <i>xyz</i> defines the framing format (<i>x</i> is 1-3), the line and signaling format (<i>y</i> is 0, 1, 2, 4), and the channel-counting sequence (<i>z</i> is 0 or 4). See the DACS I/O manuals.
Number (Hier)	For <i>CREATE</i>, either this field or (Ext) must be entered. The DND converts and fills in the other. The number of the NPC in hierarchical (hier) numbering. Hierarchical numbers have the following format: <i>xyzz</i> where: <i>xx</i> Is the shelf or unit number in the range 01 to 16. For units less than 10, the leading 0 is required. <i>y</i> Is the module number in the range 1 to 8. <i>zz</i> Is the NPC within the module, ranging from 01 through 40. Not all units are allowed in all frames, nor all positions in all units and modules. A module or shelf of a certain type is associated with a definite range of numbers. If you enter a number within that range, the Type field must be compatible with the type of NPC belonging to the number. If it is not, an error message is displayed: <i>NPC type is inconsistent with FTMI type</i>
(Ext)	The number of the NPC in extended numbering. The range is 1 through 256H. (A through H apply to TE/TA NPCs within a DS3.) Some NPC numbers may not be allowed in a frame, depending on the frame's equipage.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
SIDE	This field appears for types <i>MB</i> , <i>MJ</i> , and <i>SR</i> only. Specifies the side when the Action will change the Service Status of a duplex NPC. Values are <i>0</i> or <i>1</i> . A value is required when the Action is <i>REMOVE</i> or <i>RESTORE</i> .
Alarm Aging	The number of seconds after a <i>CGA</i> or <i>PBA</i> message has been received or asserted, before action is taken by the DND. The default is <i>0</i> . ■ <i>x</i> - Age the alarm <i>x</i> seconds, where <i>x</i> is <i>1</i> through <i>9999</i>. ■ <i>0</i> - Do not age the alarm, but act immediately. ■ <i>-1</i> - Ignore the alarm.
IW	Insertion Word. 2 hex digits for NAS, 3 for CEPT, [<i>0-9, A-F/a-f</i>]. Specifies the 8-bit code transmitted by an <i>IS</i> NPC on unassigned channels. The third digit of a CEPT IW contains signaling-channel data. The default for NAS NPCs is <i>7F</i> and for CEPT is <i>D5D</i>. This is an open field and the DND lets you enter any 2- or 3-character IW. But for NAS (<i>DE</i>) NPCs only, two characters are allowed, and entering three sends a <i>bad syntax</i> message to the DACS and also displays it on the DND prompt line. If this happens, correct the IW and execute again. For CEPT NPCs, if you do not enter a third digit, it is supplied by the DND. On DACS II, Release 6.0, and DACS II ISX Release 1.0 frames, a <i>0</i> in the 7th bit (from the right) position generates a D4 yellow alarm for the NPC when the IW is transmitted on a NAS NPC.
AIS	The user-defined severity of an AIS alarm on this NPC. ■ <i>MJ</i> - An AIS alarm is to be major. ■ <i>MN</i> - Minor. ■ <i>MI</i> - A maintenance information alarm. ■ <i>CR</i> - A critical alarm. (Applies to CEPT NPCs for DACS II Release 7.1 and higher and DACS II ISX Release 2.1 and higher.)

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
FE Site	Far end site. 1-24 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %. Blanks are allowed in the name, but leading and trailing blanks are ignored. The name of the DACS at the far end of the facility terminating on the specified NPC. This field appears only for types <i>PA</i>, <i>PB</i>, <i>PC</i>, <i>DA/TA</i> and <i>TE/DE</i>, and is informational.
Upper NPC ID	Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name, associated with the specified Number. The <i>CREATE Action</i> associates the name and number. Only one NPC ID can be associated with a Number within a DACS, and also, an NPC ID can be associated with only one NPC. An NPC ID uniquely identifies an NPC.
Upper NPC No (Hier)	This field appears for type <i>MB</i> only. A number in hierarchical format automatically assigned to the NPC specified in Upper NPC ID .
(Ext)	This field appears for type <i>MB</i> only. A number in extended format automatically assigned to the NPC specified in Upper NPC ID .

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
TS0	Time slot 0 transmit. Eight characters. The field appears for CEPT NPCs only, and is accessible via the <i>MODIFY Action</i>. Describes how to process bits in time slot 0 for transmission. A single character is entered for each bit. The bit values are: ■ <i>P</i> - Cross-connect this bit position unchanged. ■ <i>0</i> - Overwrite the incoming bit with a 0 for this position. ■ <i>1</i> - Overwrite the incoming bit with a 1 for this position. ■ <i>V</i> - For Type PA only, invert the value of this bit. If either of the two rightmost bits is <i>P</i>, both must be <i>P</i>. Use either upper or lower case for <i>P</i> or <i>V</i>. The default is <i>11011111</i>.
TS0M	Time slot 0 monitor. Eight characters. The field appears for CEPT NPCs only, and is accessible via the <i>MODIFY Action</i>. Describes what Time Slot 0 bits are to be monitored by the DACS. A single character is entered for each bit. The bit values are: ■ <i>0</i> - Stop monitoring the signal in this bit position. ■ <i>1</i> - Start monitoring the signal in this bit position. Whenever the DACS detects a change in a monitored TS0 bit, it generates an autonomous message. The default is <i>00000000</i>.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
NFS	Non-frame word setting. Nine characters. This field appears for Type PA only, and is accessible by the MODIFY Action. Specifies how the spare bits in timeslot 0 are to be handled when they are cross-connected to a timeslot other than 0. This is a special case of the spare bit manipulation feature. Refer to the description of TS0 to non-TS0 cross-connects in <i>Chapter 9, Circuit Provisioning</i>. The field format is: abcdefghi where: a is bit 1 of the FW bcdefghi are bits 1-8 of the NFW Enter a single character for each bit. The bit values are: ■ <i>P</i> - Pass unchanged. ■ <i>V</i> - Pass inverted, except for bit c. ■ <i>0</i> - Set output to 0, except for bit c. ■ <i>1</i> - Set output to 1, except for bit c. Bit c is passed unchanged in every case. If h or i are set to <i>P</i>, then the other of the two must be set to <i>P</i>. The creation default is <i>PPPPPPPP</i>.
INCL	This field appears for the REMOVE Action only. It is analogous to the INCL selection of the Options field on the CIRCUIT PROVISIONING form; however, where the CIRCUIT PROVISIONING option applies to disconnecting or deactivating a circuit, this INCL field applies to removing an NPC. ■ <i>YES</i> - Allow an NPC that is carrying a red-lined circuit to be removed. ■ <i>NO</i> - Deny removal of an NPC that is carrying a red-lined circuit.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
OOS	This field appears for the <i>MODIFY Action</i> only. ■ <i>YES</i> - Allow the NPC to be taken out of service if the modification requires. ■ <i>NO</i> - Deny any modification that would result in the NPC being taken out of service.
Lpbk Trans	This option can be changed while a loopback is active to change the loopback signal transmission or the Performance Monitoring options. ■ <i>A</i> - Starts looping the signals. Also sends AIS downstream or upstream, turns off facility Performance Monitoring, freezes alarm and parameter counts for the NPC. ■ <i>B - (PA type NPCs only)</i> Starts looping the signals. Also sends AIS downstream or upstream and continues normal Performance Monitoring and alarm processing for the NPC. ■ <i>C - (PA type NPCs only)</i> Starts looping the signal and transparently passes through the received signal. Turns off facility Performance Monitoring and freezes alarm and parameter counts for the NPC. ■ <i>T</i> - Starts looping the signal and transparently passes through the received signal. Continues facility Performance Monitoring and alarm processing for the NPC. ■ <i>N</i> - Stops looping the signal.

Table 8-10. DND Forms: Field Descriptions for the NPC PROVISIONING Form (Continued)

Field	Description
Interv. Level	(Available only for CEPT NPCs in DACS II R8.2.3 and higher/DACS II ISX R3.1 and higher.) This field appears if alarm intervention on the DACS is turned ON. Set the alarm intervention level. Valid choices are: ■ 1 (Highest level) ■ 2 ■ 3 ■ 4 ■ 5 ■ 6 (Lowest level).
Dir	Direction. This is a one character field to indicate the direction of the loopback. This is a mandatory field when the action selected is <i>LOOPBACK</i> and the NPC is a <i>PA</i> type. ■ <i>F</i> - Facility Loopback. This loops the incoming 2 Mbit/s bipolar signal back to the facility. ■ <i>E</i> - Equipment loopback. This loops the outgoing 2 Mbit/s signal back to the DACS II equipment. This option is not applicable to PB/PC type NPCs. ■ <i>N</i> - Stop loopback.

DND Forms: NPC Query Action

NPC Query Action The *QUERY Action* retrieves provisioning and performance monitoring status information for an NPC from the DACS and displays it on the screen. Figure 8-16 shows a sample page 1 for an NPC query.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows the date '18:10 17 Dec 1999', status 'CEF2/Failure: CHANGE No.: 11-6 ID: UNEQUIPPED', and 'Alarms:'. Below this is a section titled 'NPC PROVISIONING'. The data displayed includes: Site Name: CEF, Alarm State: INFO, Service State: QOS, Action: QUERY, NPC ID: 02211NPC001, Type: PA100, Number (Hier): 02211 (Ext): 0211, Alarm Aging: 0000, IW: D5D, AIS: MJ, FE Site: , TS0: 11011111, TS0M: 00000000, NFS: P, Lpbk Trans: N, Dir: N, Interv. Level: 2. At the bottom, there is a prompt 'Enter the NPC Identifier.' and a 'garfield: UI-02' label. A row of buttons at the very bottom includes HELP, NEXT, NEXTPAGE, QUIT, RECNCILE, TOP MENU, PRINT, and EXECUTE.

Figure 8-16. DND Forms: NPC Query Action

For PA type NPCs only, an NPC query produces two pages of information.



NOTE:

A <<MISMATCH>> message may appear if there is a mismatch between the data obtained from the DACS and the data in the DND database. In that case, all information on the form reflects the DACS values.

DND Forms: NPC Browse Action

NPC Browse Action

Use the **BROWSE Action** to retrieve a range of NPCs or NPCs that match the criteria you specify. Figure 8-17 shows an example of the results of a BROWSE Action.

DND USER INTERFACE

18:08 17 Dec 1999
 Status: CEF2/Failure: CHANGE No.: 11-6 ID: UNEQUIPPED
 Alarms:

NPC PROVISIONING

Site Name: CEF Alarm State: INFO Service State: OOS
 Action: BROWSE NPC ID: 02211NPC001
 Type: PA100 Number (Hier): 02211 (Ext): 0211 Alarm Aging: 0000 IW: D5D AIS: MJ
 FE Site: _____ TS0: 11011111 TS0M: 00000000 NFS: PPPPPPPP
 Lpbk Trans: N Dir: N Interv. Level: 2

	Daily NE	Daily FE	15-Min NE	15-Min FE
CRC Block Errors	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Errored Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Sev Errored Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Unavailable Seconds	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>	<u>D Inf</u>
Framing Errors	<u>D Inf</u>		<u>D Inf</u>	
Out-of-Frame Seconds	<u>D Inf</u>		<u>D Inf</u>	
Controlled Slip Seconds	<u>D Inf</u>		<u>D Inf</u>	
Coding Violations	<u>D Inf</u>		<u>D Inf</u>	
Unavailable Time Count	<u>D Inf</u>		<u>D Inf</u>	
Multiframe Errors	<u>D Inf</u>		<u>D Inf</u>	

Enter the NPC number in extended format. _____
 garfield: UI-02

HELP **NEXTPAGE** **QUIT** **RECNCILE** **TOP MENU** **PRINT** **EXECUTE**

Figure 8-17. DND Forms: NPC Browse Action

NPC Provisioning ERP

Description

An echoed response is a message that is sent from a DACS to the DND when the DND does not expect a response; for example, when a change in NPC Provisioning is entered through the DACS console, through a passthrough command to the DACS, or by some other means not initiated by a DND form. Such provisioning would cause the DACS and DND databases to differ if the DND did not respond to the echoed response message.

The DND, therefore, is designed to process the echoed messages from the DACS. For example, if it receives a message that the DACS has created an NPC, DND creates an NPC in the local database. Likewise, the DND also executes a *RESTORE*, *REMOVE*, *MODIFY*, or *DELETE* when specified by the message.

Controlling ERP

You can partially control the DND response to a message of this type. Under DACS Administration, if the **Conditional ERP** is set to *YES*, the DND database does not create the NPC. DND processes echoed response messages only if the NPC is already in the DND database. The database is updated and event messages are posted on the Status Line of the DND Forms User Interface (Status Summary Window for GUI). If the NPC is not in the DND database, the message is not processed and no action of any kind is taken.

When **Conditional ERP** is set to *No*, the DND responds to every echoed response message, (i.e. will create NPCs if it receives a DACS echoed response message).

Notification of ERP Messages

When the DND processes an echoed response message, event messages are posted on the Status Line of the DND Forms User Interface.

In addition, details about the echoed response message are logged in the DND database. To retrieve these details, from the DND Forms Main Menu, select **REPORT OPERATIONS**, then select **ECHOED RESPONSE PROCESSING**.

NPC Provisioning ERP (Continued)

NPC ID ERP Assignment

If the DND must create an NPC that is not in the DND database at all, it automatically assigns an **NPC ID** in the following format:

nnnnn**NPC00**m

where:

nnnnn	Is the NPC number as represented at the DACS. The nnnnn is in hierarchical format if the DACS is provisioned for hierarchical format, or in extended format if provisioned for extended numbering.
m	Is a sequence number assigned to this NPC record. The number is incremented with each new NPC activated by this method.

The default values used by the *CREATE Action* are the same as those specified under "Field Descriptions." They are displayed on the screens.



CAUTION:

*You **SHOULD AVOID** creating **NPC IDs** from the **NPC PROVISIONING** form according to the **ERP** scheme.*

NPC Provisioning ERP (Continued)

ERP Messages

With any other DND **Action**, an action generated in ERP can succeed or fail. The result of the attempt is reported in the Status Summary Window Line at the bottom top of the DND Main Window in the following format:

database/result:action explanation

where:

database	Is the Site Name field value for this frame.
result	Is one of these values: <i>SUCCESS</i> The action succeeded. <i>ERROR</i> The action failed.
action	Is a terse English description of the attempted action.
explanation	Is the NPC ID field value or an error message.

More detailed information can be obtained with the Echoed Response Processing Report which can be run from the GUI and the DND Forms User Interface.

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Background

Introduction

Circuit provisioning is the process of establishing cross-connections between external facility terminations (EFTs) in the DACS. A cross-connection can be established either as an elementary circuit (a single-channel cross-connection) or as multiple-channel cross-connection (combined cross-connections into complex, high-bandwidth circuits).

Prior to circuit provisioning, you must use the NPC PROVISIONING form to *CREATE* and *RESTORE* the NPCs which will be used to establish the circuit. The NPC **Type**, specified during *CREATE*, is an important element in determining the type of circuit it will be used in. Attempts to *ACTIVATE* circuits between NPCs that are inappropriate to the type of circuit are rejected.

Objectives

This chapter provides background information to help you perform the following:

1. Activate New Full Duplex, Half Duplex, Digital Multipoint Bridge, and Virtual Circuits
 2. Pend a New Circuit
 3. Modify a Circuit
 4. Combine Multiple Circuits
 5. Create an Alternate Route for a Circuit (with or without circuit preemption)
 6. Normalize a Circuit
 7. Add a Leg to a BCON Circuit
 8. Delete a Leg from a BCON Circuit
 9. Change the Return Path for a BCON Circuit
 10. Provision TS0 to Non-TS0 Circuits
 11. Deactivate a Circuit
 12. Delete a Circuit
 13. Perform a Circuit Trace
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

- Activating or Pending a New Circuit, Full or Half Duplex GT 9.1G
- Activating or Pending a New Circuit, Digital Multipoint Bridge GT 9.2G
- Modifying a Circuit GT 9.3G
- Combining Multiple Circuits GT 9.4G
- Adding a Leg to a Broadcast Circuit (BCON) GT 9.5G
- Deleting a Leg from a Broadcast Circuit (BCON) GT 9.6G
- Changing the Return Path of a Broadcast Circuit (BCON) GT 9.7G
- Creating an Alternate Route Cross-connection GT 9.8G
- Normalizing a Circuit GT 9.9G
- Deactivating a Circuit GT 9.10G
- Deleting a Circuit GT 9.11G
- Performing a Circuit Trace GT 9.12G

DND Forms:

- Activating a New Circuit, Full Duplex or Full Duplex Loopback GT 9.1U
 - Activating a New Circuit, Clear DS1 Full Duplex or Half Duplex GT 9.2U
 - Activating a New Circuit, Half Duplex or Half Duplex Loopback GT 9.3U
 - Activating a New Circuit, Full-Duplex Random or Full-Duplex Random Loopback GT 9.4U
 - Combining Multiple Circuits GT 9.5U
 - Activating a Circuit, Virtual Multipoint Circuit GT 9.6U
 - Activating a Circuit, DMB Multipoint Symmetrical Circuits GT 9.7U
 - Activating a Circuit, DMB Multipoint Polling Data Circuit GT 9.8U
 - Adding a BCON LEG to a Full-Duplex Contiguous Circuit GT 9.9U
 - Adding a BCON LEG to a Full-Duplex Random Circuit GT 9.10U
-

Background (Continued)

Related information

For related information see:

- *DACS II and DACS II ISX Operation and Maintenance Manuals.*
-

General Information

Channels

The unit of cross-connection is typically the channel. The 1.544 megabits per second (Mbps) of a Digital Signal 1 (DS1) signal becomes 24 channels of 64 kilobits per second (Kbps) under the North American Standard (NAS). Likewise, the 2.048 Mbps of an E1 signal becomes 32 channels of 64 Kbps under the CEPT Standard. The channel has a width of 8 bits, or one byte. All 8000 bytes per second being transmitted over this channel belong to the same customer.

Channels are identified by channel numbers within an NPC -- 0 through 23 for NAS, and 0 through 31 for CEPT.

Bandwidth

The circuit **Bandwidth** refers to the number of 64 Kbps channels constituting a high-rate circuit (any circuit larger than one channel). For example, a 256 Kbps data channel consists of four 64 Kbps channels.

For NAS NPCs, the available bandwidth is 1-24 channels; for CEPT NPCs, the available bandwidth is 1 through 31 channels.

Bandwidth Type

The **Bandwidth Type** indicates how bandwidth is allocated on the two NPCs used on the circuit. The three bandwidth types are:

- *C: Contiguous*
- *A: Alternating*
- *R: Random.*

Contiguous bandwidth is allocated on consecutive channels (i.e. 1, 2, 3, etc.). Alternating bandwidth is allocated on alternate channels (i.e. 2, 4, 6, etc.). In the **Channel:** field, enter the first channel number in the sequence for either Contiguous or Alternating bandwidth types, and the DND will compute the other channel numbers in the sequence. Random bandwidth permits allocation of channels in a random fashion. In the **Channel:** field, enter a list of channels separated by a comma (i.e. 2, 3, 5, 6, etc.).

General Information (Continued)

TO and FROM Sides

A circuit is considered to go from one external facility termination (EFT) to another, or from one set of EFTs to another (high-rate). One side is, therefore, considered the FROM side, and the other is considered the TO side. The transmitting side of the circuit is typically denoted the FROM side. These conventions apply to all circuits established with one CIRCUIT PROVISIONING form.

Locating Available Channels Using the Find Button

The **Find** button locates the first available channels on an NPC based on the selected **Bandwidth Type** and **Bandwidth**. For example, assume channels 3, 4, and 6 are the only channels used on an NPC. If the **Bandwidth** is 3 and the **Bandwidth Type** is *Contiguous*, clicking **Find** will return channels 7, 8, and 9. If the **Bandwidth Type** is *Alternating*, clicking **Find** will return channels 5, 7, and 9. If the **Bandwidth Type** is *Random*, clicking **Find** will return channels 1, 2, and 5.

If the FROM NPC and TO NPC are the same, the **Find** button will not consider channels on the other side of the circuit being created. So, in the above example, if only 3, 4, and 6 are being used and we are creating a *Random* circuit with a **Bandwidth** of 3, and FROM NPC and TO NPC are the same, clicking **Find** for the FROM NPC will return 1, 2, and 5. Clicking **Find** for the TO NPC will return 7, 8, and 9.

Establishing a Circuit

The most important characteristic of any circuit is its operating status. When you enter a **Ckt ID** for a circuit that is not on record in the DND database, the **Ckt Status** field on the screen is assigned a *NULL*. Any other **Ckt Status** means that a circuit of that ID is on record.

To successfully *ACTIVATE* a circuit means to establish it as a successful, traffic-bearing* circuit. In that case, the **Ckt Status** is *ACTIVE*. However, you do not have to *ACTIVATE* a circuit to place it on record; a *PEND Action* places it on record in *PENDING Ckt Status*.

If an *ACTIVATE Action* fails, the DND will attempt to undo any connection it has already put up. In the case of a timeout, the DND sends a disconnect command.

* Traffic-bearing refers to the fact that the circuit is marked as cross-connected and, in theory, is capable of supporting customer traffic. However, the **Service State** of the NPC (In Service or Out of Service), as well as external parameters beyond control of the DND, will affect the ability of the cross-connect to actually carry customer traffic.

General Information (Continued)

Disconnecting a Circuit

When a circuit is disconnected, it does not always disappear. It may remain in the database as *DEACTIVATED*, *ALTROUTED*, or *PREEMPTED*, depending on how it was disconnected. These **Ckt Statuses** are covered in greater detail in this and the following chapters. To return a circuit to *NULL*; for example, to delete it, enter an **Action** of *DELETE*.

The **ACTIVATE Action** sends a command to connect EFTs that are *IS*. If the NPC of an EFT should go *OOS* after the circuit is in **ACTIVE Ckt Status**, the circuit remains *ACTIVE*. You can disconnect it immediately by selecting the *OOS* option from the **DELETE Action**. If you neglect to do that and attempt to *DEACTIVATE* or *DELETE* the circuit, the DND would need to send two commands before disconnection would be successful.

Red-lining Circuits

You can red-line the circuit as not to be disconnected without authorization, through the RDLD and INCL **Options**.

High Rate Circuits

High rate circuits are FDX circuits, HDX circuits, or multipoint circuit legs which are established with a bandwidth of 2 or greater. High rate circuits are established to support the transmission capacity of larger traffic customers.

Using the Reconcile Mode

By specifying a **Reconcile Mode**, you can have the circuit recorded in one of the following ways:

- Both the DND and DACS databases
- In the DND database only, where no DACS cross-connection is made
- In the DACS database only, in which case no data is changed in the DND database.



WARNING:

Using Reconcile should be done with care. It can create discrepancies between the DND and DACS databases.

For more information, refer to *Chapter 3, DND Screens and Form Navigation*.

General Information (Continued)

Combining Multiple Circuits

Using the *COMBINE Action*, multiple circuits are combined to create high-rate, complex circuits. These circuits are useful for customers requiring larger bandwidths to transfer data. Depending on bandwidth size needed, the building of a multiple circuit may require a number of *COMBINE Actions*.

When combining multiple circuits to a create larger bandwidth, complex circuit, the following must hold:

- The multiple circuits must all be of the same Bandwidth Type
- No circuits can be of the Random bandwidth type

Testing Circuits

Once a circuit is *ACTIVATED*, you may want to test it. *Chapter 18, Test Ports and Test Access* describes test access capabilities and how to connect test circuits.

TS0 Circuit Feature

Description

A TS0 circuit feature is supported by DND NPC and CIRCUIT PROVISIONING, for CEPT circuits of **Type PA** NPCs and **Bandwidth 1** only. In the CEPT standard, channel 0 (time slot 0) is used to transmit the framing pattern and other data channel information. For various reasons, you may want to utilize channel 0 for other purposes, such as transmitting alarm information, or for testing, and therefore you may want to connect it to some channel other than 0 in some other CEPT NPC. This is a special case, and requires a value in the **Framing** field.

Framing Example

Figure 9-1 shows two sequential time frames in one direction for two different NPCs. Channel 0 (time slot 0) is to be connected to channel 1 (time slot 1). The last 7 bits of the first time frame's channel 0 contain an arbitrary pattern, the framing word (FW), which is used to identify the beginning of a pair of time frames. Channel 0 of the alternate time frame contains the non-framing word (NFW), consisting of 8 bits used to transmit various signals.

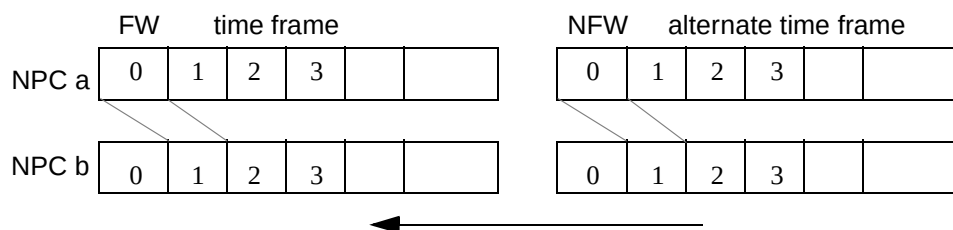


Figure 9-1. Circuit Provisioning Example—Two Sequential Time Frames

(Continued on next page)

TS0 Circuit Feature (Continued)

Framing Example, Continued

If you connected channel 0 unmodified to channel 1, the FW would appear twice within the pair of time frames on NPC b, and therefore would destroy the framing sequence. The **Framing** field allows you to insert another arbitrary pattern, the pseudo-FW, into the stream of frames on NPC b. Alternatively, you can communicate the NFW of NPC a to both frames of NPC b. In either case, the NFW is used to transmit the channel data you want to transmit.

Spare Bits

The FW and the NFW each consist of 8 bits. Bit 1 of the FW and bits 1 through 8 of the NFW are not used for framing purposes and therefore are called the spare bits. Spare bit manipulation also is supported. To access these bits, however, use the **NFS** field on the NPC PROVISIONING form.

Circuit Types

Overview

The type of circuit is determined mainly by **Ckt Class**, **Bandwidth**, **Options**, and the EFT identifiers.

- **Ckt Class** is the most significant. Through it you can specify two-way or, one-way, DMB multipoint, virtual multipoint, and BCON circuits.
- The EFT identifiers determine whether the connections are entirely NAS, entirely CEPT, or gateway.
- However, if you connect NAS with CEPT EFTs, you need to make sure the **NAM** keyword option is unselected; for example, that A-to-mu law conversion is in effect.

The DND supports a variety of circuit types, depending on what hardware is present on the DACS. Hardware and NPC types are described in *Chapter 8, NPC Provisioning*. This section provides brief summaries of various circuit types. For more complete details on circuit types, refer to the *DACS II and DACS II ISX Operation and Maintenance Manuals*.

High-rate circuits in the DND are implemented in the DACS as a range command or individual one- or two-way circuits, depending on the **Bandwidth Type** chosen (*CONTIGUOUS*, *ALTERNATING* or *RANDOM*). To the DACS operator, the complex process of building circuits by individual MML commands and selection form a large variety of types with many possible parameters; becomes a much simpler process using DND by entering information into the forms.

Circuit Types (Continued)

Full Duplex

A full-duplex circuit provides a two-point, two-way transmission path. Data is sent from the FROM to the TO sides, as well as from the TO to the FROM sides. The **Ckt Class** is indicated by *FDX: FULL DUPLEX*.

One CIRCUIT PROVISIONING form is required to provision a full-duplex circuit. Figure 9-2 shows a sample of a full duplex circuit.

⇒ NOTE:
Selection of the NPC determines whether the DS0 channels are provided by NAS E/DDCs, CEPT E/DPCs, or DS3 Cards (channelized configuration). The procedure is the same in each case.

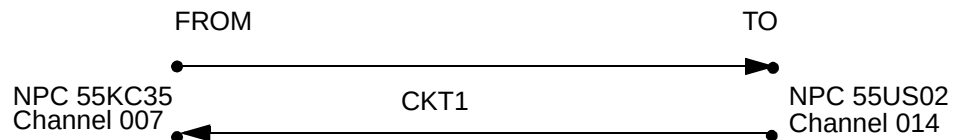


Figure 9-2. Sample Full-duplex Circuit

Circuit Types (Continued)

Half Duplex

A half-duplex circuit provides a two-point, one-way transmission path. For one-way circuits (half duplex), the transmitting side must be considered FROM. The **Ckt Class** is indicated by *HDX: HALF DUPLEX*.

One CIRCUIT PROVISIONING form is required to provision a half duplex circuit. Figure 9-3 shows an example of a half duplex circuit.



Figure 9-3. Sample Half-duplex Circuit

Circuit Types (Continued)

Clear DS1/E1

A clear DS1/E1 circuit provides a two-point, one- or two-way transmission path using all channels on the FROM and TO NPCs. The **Ckt Class** is indicated by *HDX: HALF DUPLEX* or *FDX: FULL DUPLEX*.

One CIRCUIT PROVISIONING form is required to provision a clear DS1/E1 circuit. Figure 9-4 shows a sample of a clear, full-duplex DS1 circuit.

NOTE:
A clear DS1/E1 NPC can only connect to another clear DS1/E1 NPC. They are provisioned as such during NPC Provisioning.

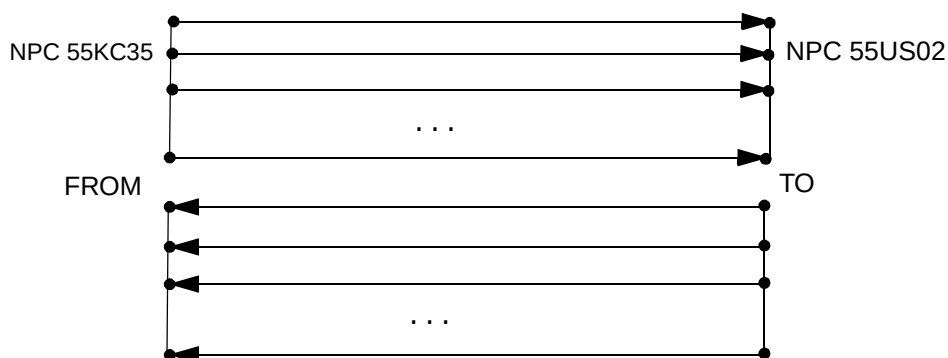


Figure 9-4. Sample Clear DS1 Full-duplex Circuit

Circuit Types (Continued)

BCON Circuits

BCON circuits provide the capability to provision multipoint circuits. There are two types of BCON circuit classes:

- *Backbone circuits (BKB)* - BKB circuits are used as the backbone circuit in BCON provisioning.
- *Tributary circuits (LEG)* - LEG circuits are used as the tributary circuit in BCON provisioning.

To create a BCON circuit through the DND user interface, create a Full Duplex circuit and add a LEG. The Full Duplex circuit will be converted into a BCON backbone with the new leg. Similarly, when the last LEG of a BCON circuit is deleted through the DND user interface, the remaining backbone will be converted back to a Full Duplex circuit automatically. The Circuit ID of a LEG circuit is automatically generated during execution of the *ADDLEG* action, and is displayed after the action completes. Figure 9-5 illustrates an example of a BCON circuit.

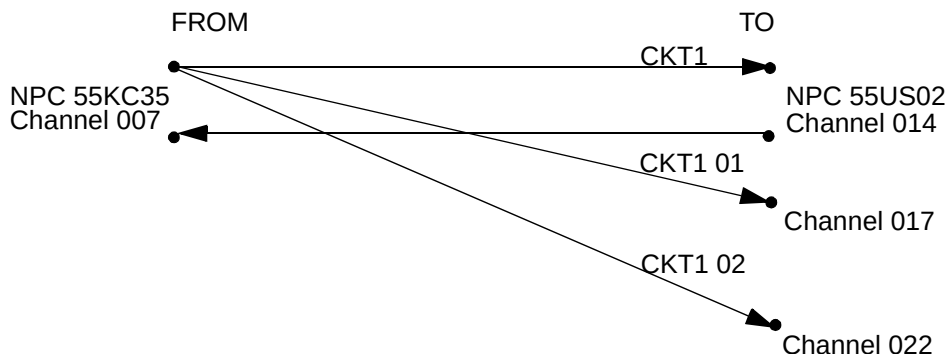


Figure 9-5. Sample BCON Circuit

You can modify a BCON circuit by adding a leg (*ADDLEG*), deleting an existing leg (*DELLEG*), or by changing the base name (*MODIFY* of BKB). BCON circuits cannot be *DEACTIVATED*, *ALTROUTED*, *PREEMPTED*, or *COMBINED*.

You can use the *CHGRPATH* Action to change the return path to another leg. The leg must already be connected in the BCON.

For additional information on BCON circuits, refer to the *DACS II and DACS II ISX Operation and Maintenance Manuals*.

Circuit Types (Continued)

Half-Duplex Loopback Circuits

One CIRCUIT PROVISIONING form is required to provision a half-duplex loopback circuit. The FROM and TO sides must be the same channel of the same NPC. The **Ckt Class** must be *HDX*. The Tx then loops around to the Rx of the same channel, as shown in Figure 9-6.



Figure 9-6. Sample Half-Duplex Loopback Circuit

Full-Duplex Loopback Circuits

One CIRCUIT PROVISIONING form is required to provision a full-duplex loopback circuit. The FROM and TO sides must be the same channel of the same NPC. The circuit class must be *FDX*. The Tx then loops around to the Rx of the same channel, as shown in Figure 9-7.

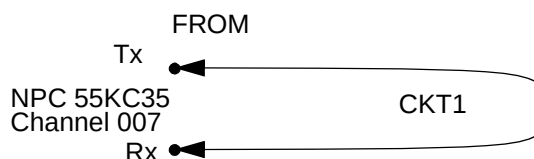


Figure 9-7. Sample Full-Duplex Loopback Circuit



NOTE:

The full-duplex loopback circuit is *only* available when the environment variable *FDX_LOOP_CKT* is set to 1. For more information on environment variables, refer to "Environment Variables" in *Chapter 2, Getting Started*.

Circuit Types (Continued)

Virtual Circuits

You can provision virtual multipoint, one-way, receive-only broadcast circuits of bandwidth 1 through 24 for NAS or 1 through 32 for CEPT. Gateway circuits are allowed, with a bandwidth up to 24.

To visualize the virtual multipoint, broadcast model, imagine a black box with one input and multiple outputs, as shown in Figure 9-8.



Figure 9-8. Ideal Broadcast Circuit

What happens inside the box is a matter of design. The DND design is shown in the exhibit for the *BBL* and *BRD* values of **Ckt Class** under the preceding table in “Field Descriptions.”

In the single-channel bandwidth case, the initial FROM side and the final TO sides are single directions of one channel each on an NPC. In the high-rate case, the FROM and the TO points must be represented by multichannel circuits.

Internally, within the black box, branching is accomplished by means of a virtual node. This node is a logical channel that is both the TO side of the input FROM side and the FROM side of the output TO sides. In effect, DND sets up an input one-way, two-point circuit and one such output circuit for each broadcast point.

Ordinarily the channel for this virtual node is system-selected from the 1-500 range, but you can select one yourself, as is explained under **Ckt Class**. Such a procedure is unusual. The connection through the node is handled by the DND software once you enter a **Ckt Class** of *BBL* or *BRD*.

Circuit Types (Continued)

Provisioning Virtual Circuits

To provision a virtual circuit, a CIRCUIT PROVISIONING form is required for each leg.

Each form must have a different **Ckt ID**. High-rate circuits count as one leg and take one form to specify. In that case, channels are displayed on the real EFT line only.

There are a few conditions:

- All legs must have the same **Bandwidth**, and the **Bandwidth Type** must be *C* (contiguous).
- You must establish the backbone leg first. The broadcast legs cannot exist without it; if you try to create a BRD before a BBL, your attempt is denied.
- The NPCs must not be *UEQD*. If they are *OOS*, DND accepts the form, but the frame does not accept the command. A successful circuit must contain NPCs that are all *IS*.

**NOTE:**

The DND GUI does not support virtual circuits. All virtual circuits must be provisioned through the DND Forms interface.

Circuit Types (Continued)

DMB Circuits

The model for a DMB multipoint circuit is similar to that of the virtual multipoint circuit, except that a DMB multipoint circuit is two-way, and, therefore, the concept of FROM and TO sides becomes arbitrary. Either direction of a circuit can be the FROM or the TO. Also, DMB multipoint circuits require the selection of a DMB NPC and channel as a branch point.

The two specific types of DMB circuits are:

- Symmetric Voice Bridge - two or more symmetric legs
- Polling Data Bridge - one backbone leg and one or more branches



NOTE:

DMB multipoint is supported *only* for DACS II.



NOTE:

The DMB NPC number must be in the range supported by the DMB circuit pack. If it is not, the NPC is not a DMB NPC. If you do not know the ranges of each type of NPC, consult your system administrator.

Circuit Types (Continued)

Symmetrical Voice Circuits

Figure 9-9 shows an example of a symmetric voice circuit.

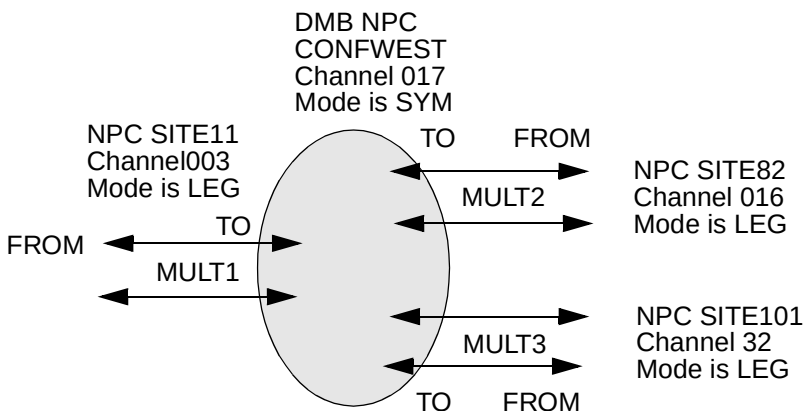


Figure 9-9. Sample Symmetric Voice Circuit

In this example, three **CIRCUIT PROVISIONING Actions** are required. Each form must have a different **Ckt ID**.

When implemented, the circuit resembles the illustration in Figure 9-10. Each leg can hear the traffic from all of the other legs.

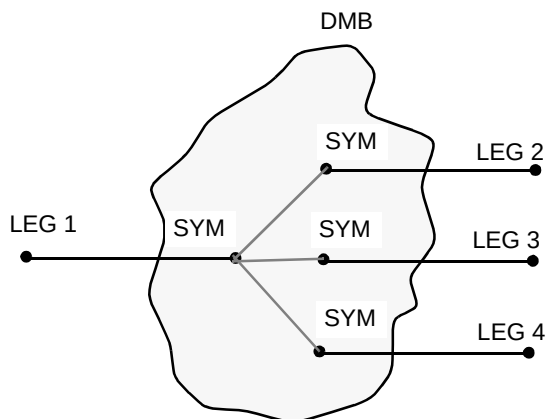


Figure 9-10. Implemented Symmetric Voice Circuit

Circuit Types (Continued)

Polling Data Circuits

Figure 9-11 shows an example of a polling data circuit. This figure is essentially the same as Figure 9-10; however, it is strictly conventional. The Tx direction of the backbone does not really go through the DMB NPC.

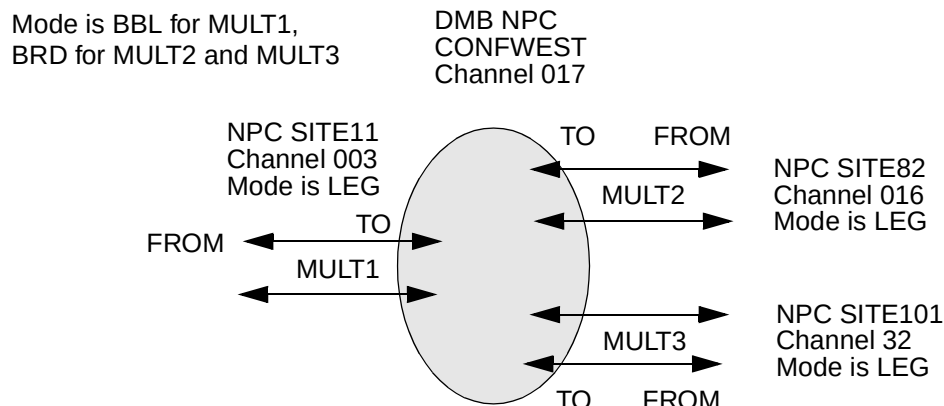


Figure 9-11. Sample Polling Data Circuit

In this example, three CIRCUIT PROVISIONING **Actions** are required. Each form must have a different **Ckt ID**.

When implemented, the circuit resembles the illustration in Figure 9-12. LEG 1 hears traffic for all LEGS, however, LEGS 2, 3, and 4 only hear traffic from LEG 1.

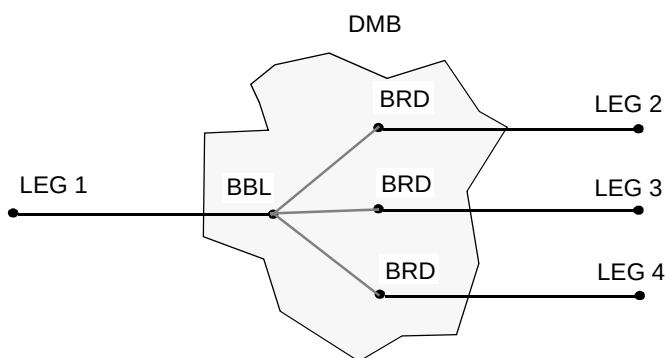


Figure 9-12. Implemented Polling Data Circuit

Circuit Types (Continued)

Cascaded DMB Circuits

The number of legs that can be hung from one branch point in a DMB multipoint circuit is limited by the number of time slots in a DMB circuit pack. Some limits are stated for the DACS II, as shown in Table 9-1.

Table 9-1. DMB Conference Information

Machine	DMB Conference Number Range	Maximum Number of DMB Conferences Per Frame	Maximum Number of DMB Conference Legs Per Pack
DACS II	1-85 (170 per pack)	2720	512
DACS II (CEF)	1-85 (170 per pack)	10880	512

⇒ **NOTE:**
If you assume eight DMB packs per DSPU per frame, and two DSPUs per frame, the maximum number of conferences is 170x8x2, or 2720.

The above limitations can be overcome for multipoint circuits by a configuration called cascading, in which two or more conferences are included in the same network of DMB multipoint circuits.

⇒ **NOTE:**
The representations shown in this section are not to be taken as circuit diagrams. They graphically represent the relations between the circuits to be entered on the various CIRCUIT PROVISIONING forms required by the cascade.

Circuit Types (Continued)

Cascaded Symmetric Voice Circuit

Figure 9-13 represents a cascaded symmetric voice circuit where each LEG can hear traffic from all of the other LEGS.

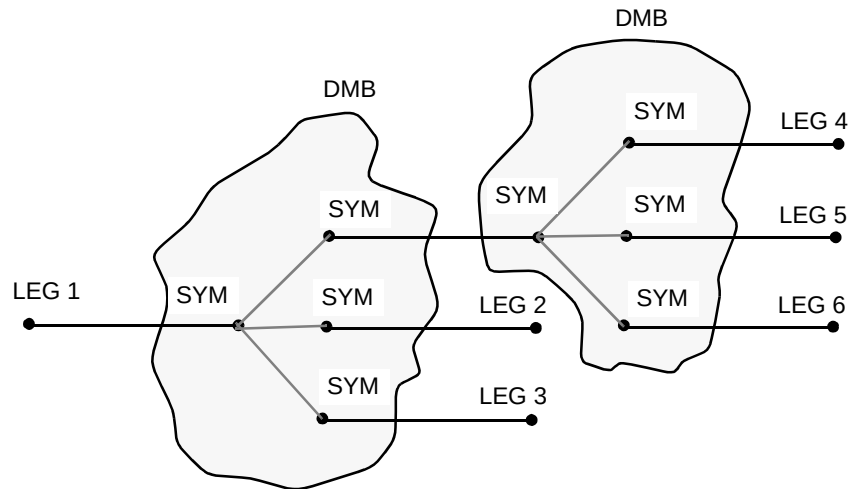


Figure 9-13. Cascaded Symmetric Voice Circuit

Using Figure 9-13 as an example, the following rules are evident:

- LEG always connects to SYM.
- Clusters of SYM must be the same NPC and channel, and it must be a DMB NPC.
- The number of SYM-to-SYM circuits is equal to one less than the number of DMB conferences in the circuit.

In the illustration, seven circuits are shown, requiring seven CIRCUIT PROVISIONING **Actions**. Whether a channel is TO or FROM has no bearing, except, of course, that a FROM and a TO have to appear in every cross-connect.

Circuit Types (Continued)

Cascaded BBL-to-BBL Polling Data Circuit

Notice that the same DMB NPC and channel are labeled BBL in one form and BRD in three forms.

Figure 9-14 shows two polling data circuits cascaded through the backbone LEGS. LEGS 1, 2, and 3 hear traffic from 4, 5, and 6, but they do not hear each other. Similarly, LEGS 4, 5, and 6 cannot hear each other, but they can hear the traffic from LEGS 1, 2 and 3.

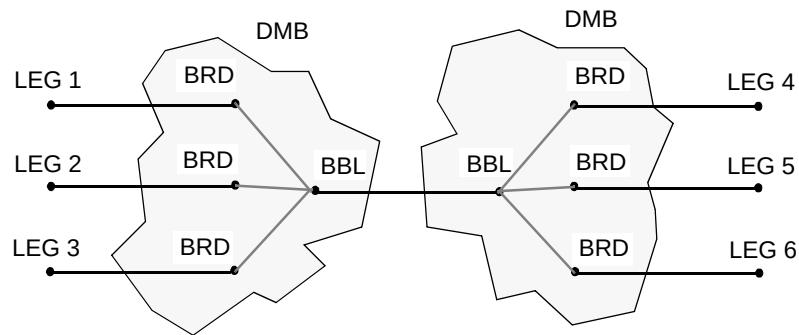


Figure 9-14. BBL-to-BBL Cascaded Polling Data Circuit

Notice that the LEG to BBL cross-connects of a single circuit have been replaced by a common BBL to BBL cross-connect. Seven CIRCUIT PROVISIONING **Actions** are required.

Circuit Types (Continued)

Cascaded BBL-to-BRD Polling Data Circuit

Figure 9-15 shows an example of a BBL to BRD cross-connect. LEG 1 can hear the traffic from everyone; all other legs only hear traffic from LEG 1.

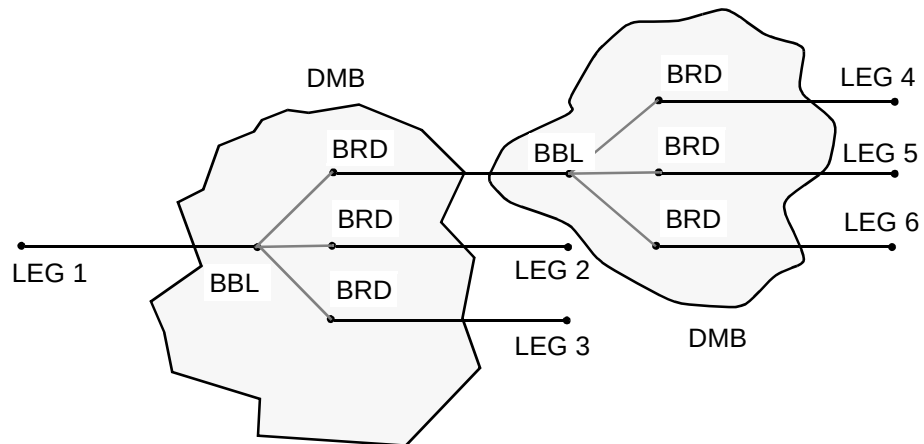


Figure 9-15. BBL-to-BRD Cascaded Polling Data Circuit

From this figure, the following rules are evident

- LEG always connects to BBL or BRD.
- A cluster of points representing one DMB and channel must include one BBL with the rest being BRD.
- As many BRD to BBL circuits are required as one less than the number of DMB conferences in the circuit.

Circuit Packs and Related Circuit Types

E/DDC and E/DPC Circuit Packs

Standard E/DDC and E/DPC circuit packs can support the following circuit types:

- Single-channel, two-point, one-way or two-way circuits.
 - Single-channel, two-point, one-way or two-way circuits between NAS NPCs and CEPT NPCs (gateway circuits).
 - High-rate, or high bandwidth (multichannel), NAS, CEPT, or gateway two-point, one-way or two-way circuits. The maximum bandwidth for NAS and gateway is 24 channels per circuit; for CEPT, 32.
 - Virtual multipoint, one-way, receive-only broadcast circuits of bandwidth 1 through 24 for NAS or 1 through 32 for CEPT. Gateway circuits are allowed, with a bandwidth up to 24.
 - BCON circuits of bandwidth 1 through 24 for NAS or 1 through 32 for CEPT. Gateway circuits are allowed, with a bandwidth up to 24.
-

DMB Circuit Packs

If DMB circuit packs are installed in the DACS, the following DMB multipoint two-way circuits are supported in single-channel bandwidth only:

- Symmetric voice circuits. Each station can communicate both ways at all times, but the DND allows disabling of transmission in one direction (**NTR** field).
 - Polling data circuits. Equipment is polled one way and the replies are sent the other. Again, the DND allows disabling of transmission in one direction.
-

TG 80 Circuit Packs

If TG80/TG 80B circuit packs are installed in the DACS, the following circuits are supported, NAS only:

- 193-bit, clear DS1, half-duplex, full-duplex, or BCON.
-

TG 192 Circuit Packs

If TG192 circuit packs are installed in the DACS, the following circuit types are supported, CEPT only:

- 256-bit, clear E1, half-duplex, full-duplex, or BCON.
-

Circuit Packs and Related Circuit Types (Continued)

DS3 Circuit Packs If a regular DS3 shelf containing DS3 circuit packs is installed in the DACS, the following circuit types are supported, NAS only:

- Channelized DS3; such as 28 channelized DS1 signals per DS3 circuit pack. Each DS1 signal becomes 24 NAS-only DS0 channels, which can be connected in bandwidths of up to 24. There are no CEPT DS3s; however, gateway circuits with other NPCs that are CEPT are supported.
- DS3 with 28 clear DS1s, full- or half-duplex only.

If a hybrid DS3 shelf is installed in the DACS, the following circuit types are supported:

- The EMXR/MXR cards support all types of NAS NPCs and circuits.
 - The HMXR card supports all types of CEPT NPCs and circuits.
-

Alternate Routing

Introduction

When a transmission facility fails, it may be necessary for the DND operator to switch circuits connected to that facility to an alternate route. This section describes how to use the **ALTROUTE Action** to execute alternate routing, or altrouting, from the DND, and how the DND handles circuit preempting and normalizing of altrouted circuits.

Constraints

The following constraints apply to altrouting:

- A circuit in any **Circuit Status** can be altrouted (rerouted to an alternate route), except circuits that are already in the *ALTROUTED* or *DEROUTED* **Circuit Status**. You can even create a new circuit in the *ALTROUTED* **Circuit Status**.
 - You can only *ALTROUTE* a circuit once. Before altrouting a second time, you must first *DEACTIVATE* or *NORMALIZE* (return it to its primary route).
 - An *ALTROUTED* circuit is not available for being preempted (bumped from a channel assignment) until it has been deactivated or normalized.
 - An *ALTROUTED* circuit can only be deactivated, normalized, or deleted. It can be activated in *local only* mode, but any circuit that it preempted will be deactivated.
-

High Rate Circuits

For high-rate circuits:

- When you *ALTROUTE* a multichannel circuit, all the channels on that side of the circuit get altrouted, possibly requiring the preempting of multiple circuits (see "Preempting Conditions" later on Page 9-34).
 - Random circuits cannot be altrouted.
-

Multipoint Circuits

For multipoint circuits, only the EFTs can be altrouted; the virtual node of a broadcast circuit or the DMB channel of a symmetric voice circuit or of a polling data circuit cannot be altrouted. Multipoint altrouting means that you change the EFTs of the legs, but not the branch point.

Alternate Routing (Continued)

BCON Circuits

BCON circuits cannot be altrouted.

Real vs. Psuedo Altrouting

Most altrouting occurs when you use the DND to route a circuit that is connected in the DACS (**ACTIVE Circuit Status**) through another DACS channel. This is a “real” **ALTROUTE Action**.

However, an **ALTROUTE** in which all channel ends are altrouted to themselves is called a “pseudo-”**ALTROUTE**. The pseudo-**ALTROUTE** allows you to put up a temporary circuit, in **ALTROUTE Ckt Status**, that becomes deactivated on normalization, without special action to deactivate it.

Alternate Routing Fields

The Altrouting fields appear on the CIRCUIT PROVISIONING form. When performing the **ALTROUTE Action** on an existing circuit, the original circuit information will appear on the form in read-only mode. The **ALTROUTE CIRCUIT ENDPOINTS** box appears to allow you to enter NPC and channel information to the FROM and TO sides of the new alternate route.

When the **ALTROUTE** is completed, the **New Circuit Status:** field will indicate the new circuit status as **ALTROUTED**.

ALTROUTE CIRCUIT ENDPOINTS

FROM NPC

ID: NPC2

NPC Type: PB100 Hier: 01102 Extd: 0002

TO NPC

ID: NPC3

NPC Type: PB100 Hier: 01103 Extd: 0003

FROM Channel: 01 Find

TO Channel: 04 Find

Figure 9-16. ALTROUTE CIRCUIT ENDPOINTS Box

Preempting Conditions

Description

A circuit can be altrouted to a spare, unused channel (which is preferable but may be unavailable), or to a channel already in use by other circuits. In this latter case, the other circuit is *PREEMPTED*; that is, they are temporarily bumped off their channel assignment.

All Circuits

The following conditions apply to preempting:

- Preempted circuits stay in the *PREEMPTED Ckt Status* until they are normalized or you manually change them to another *Ckt Status*.
 - Once you manually change the *Ckt Status* of a *PREEMPTED* circuit, it can no longer be automatically normalized to its primary channel assignment; you would have to do this via a **CIRCUIT PROVISIONING Action**.
 - An NPC and channel cannot be preempted twice. A second attempt is denied.
 - Some channels on a *PREEMPTED* circuit may not be required for the *ALTROUTED* circuit. They are still available for preemption by other circuits.
 - Once any channels on a circuit are preempted, that circuit is in the *PREEMPTED Ckt Status* and cannot be activated to carry traffic until all preempted channels on the circuit are normalized.
 - You can place a *PREEMPTED* circuit in service on other channels with an **ALTROUTE Action**. This **Action** will remove it from the preemption list of its original preempting circuit. You can return it to its original path with a **NORMALIZE Action** when the original channels are available. If they are not, the normalization will leave the circuit in the *DEACTIVATED* status.
 - If more than one circuit preempts the channels on a *PREEMPTED* circuit, the *PREEMPTED* circuit cannot be reactivated until all the preemption has been removed from its channels. The normalizing of the last preempted channel reactivates the *PREEMPTED* circuit.
-

High Rate Circuits

For high-rate circuits, random circuits can be *PREEMPTED*, although they cannot be *ALTROUTED*.

Preempting Conditions (Continued)

Multipoint Circuits

For multipoint circuits, any or all of the EFTs can be preempted. For DMB, the EFT of a leg can be preempted. For both virtual and DMB, the corresponding legs are then placed in *PREEMPTED Ckt Status*. However, the virtual node or DMB channel remains *ACTIVE*, meaning that additional legs can be attached to it at any time.

BCON Circuits

BCON circuits cannot be preempted.

Preempting Table and Fields

When you specify an altrouting operation that preempts *ACTIVE* circuits using the DND GUI, the DND displays a separate Netscape window with a table of circuits that need to be preempted to perform the altrouting. The CIRCUIT PROVISIONING form displays a message field asking you to verify the preempting procedure. Select the **Verified:** check box to proceed. If you decide not to proceed with the procedure, click [Back](#) to enter different *ALTROUTE* endpoints.

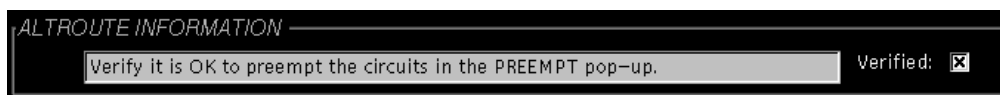
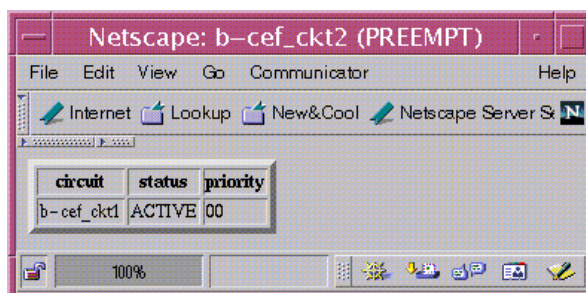


Figure 9-17. DND GUI: Preempting Table and Fields

If the DND Forms interface is used, it will prompt for manual verification to preempt each circuit.

Normalizing

Description

When you *NORMALIZE* an *ALTROUTED* circuit, the circuit is rerouted from its temporary channel to the original channel for which it was provisioned and is returned to its pre-*ALTROUTED* connection. Any *PREEMPTED* circuits are reactivated.

Conditions

Normalizing has the following conditions:

- When you *NORMALIZE* a real *ALTROUTED* circuit, the original circuit is restored to **ACTIVE Ckt Status**.
 - When you *NORMALIZE* a pseudo-*ALTROUTED* circuit, the original circuit is restored to **DEACTIVATED Ckt Status**.
 - *DEACTIVATE* also performs a *NORMALIZE* and leaves the original circuit in the **DEACTIVATED Ckt Status**, whether it was a real or a pseudo-*ALTROUTE*.
 - If another circuit was preempted by the *ALTROUTED* circuit, the DND attempts to reactivate the *PREEMPTED* circuit, provided that the circuit just returned to *ACTIVE* was the only one preempting it.
 - Circuits which cannot be reactivated for any reason (such as a conflict arises during a normalization) are put in **DEACTIVATED Ckt Status** so that the user can work on them when conditions permit.
-

Circuit Trace

Overview

The buttons and fields in the CIRCUIT NETWORK INFORMATION box allow you to provision additional circuits connected to either the FROM or TO side of the current circuit (depending on which is available) and display a circuit trace of the connecting circuits throughout your DACS network. When a circuit trace is displayed, the whole circuit path is displayed. The circuit trace is not dependent upon a user's assigned partition.

The Circuit Trace Navigation Buttons

The **FROM NPC**, **TO NPC**, and **TRACE MAP DISPLAY** buttons appear in the CIRCUIT NETWORK INFORMATION box to help continue building a network circuit or to trace a network circuit. Click **FROM NPC** or **TO NPC** to trace the circuit through an intertie (on either the FROM to TO side) to the next site.

A matching circuit must adhere to the following conditions:

- The Far End NPC is created and In-Service (IS)
- There is an active circuit (status of *ACTIVE*, *ALTROUTED*, or *P_ACTIVE*) on the Far End NPC with a matching **Ckt Class** and matching **Channels**.

If there is no matching circuit on the next site and the current **Action** is *ACTIVATE*, *ALTROUTE*, or *PEND*, the form will transition to the next site and allow creation of the next circuit. The matching side of the circuit will automatically be filled in. The form transition will be denied for all other circuit **Actions**.

If there is a matching circuit on the next site, the form will transition to the next site and display the matching circuit.

If the Far End of an intertie is a not a DACS II or DACS II ISX, the button for that side will not be displayed, since a circuit cannot be traced through the other types of nodes (End User, DACS II AX, AAC, IMACS, Other).

Read-only Fields

The read-only fields next to the buttons indicate the port (hierarchical NPC number or Mux Port) of the FROM or TO side, the **Site Name** it is associated with, and (if applicable) the port it is connected to on the other side of the intertie. The latter field will be missing if the site is not a DACS II or DACS II ISX.

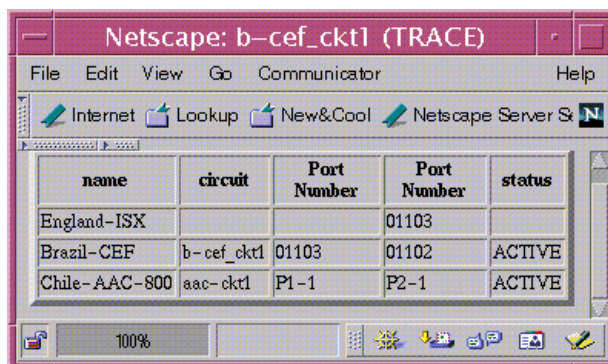
Circuit Trace (Continued)

Displaying a Circuit Trace

A circuit trace can be displayed from any **Action** of the CIRCUIT PROVISIONING form, before or after the current **Action** is executed.

The CIRCUIT PROVISIONING form also offers the **TRACE Action** to quickly display a circuit trace map. Click **TRACE MAP DISPLAY** to display the following:

- A circuit trace table (See Figure 9-18), indicating the Site Names and circuits connected throughout the DACS network.
- A circuit trace map (See Figure 9-19) on a greyed out background, illustrating the circuit path throughout the DACS network. Only the network elements and interties and groups which are associated with the network circuit are displayed in the circuit trace diagram.



name	circuit	Port Number	Port Number	status
England-ISX			01103	
Brazil-CEF	b-cef_ckt1	01103	01102	ACTIVE
Chile-AAC-800	aac-ckt1	P1-1	P2-1	ACTIVE

Figure 9-18. A Sample Circuit Trace Table

(Continued on next page)

Circuit Trace (Continued)

Displaying a Circuit Trace, Continued

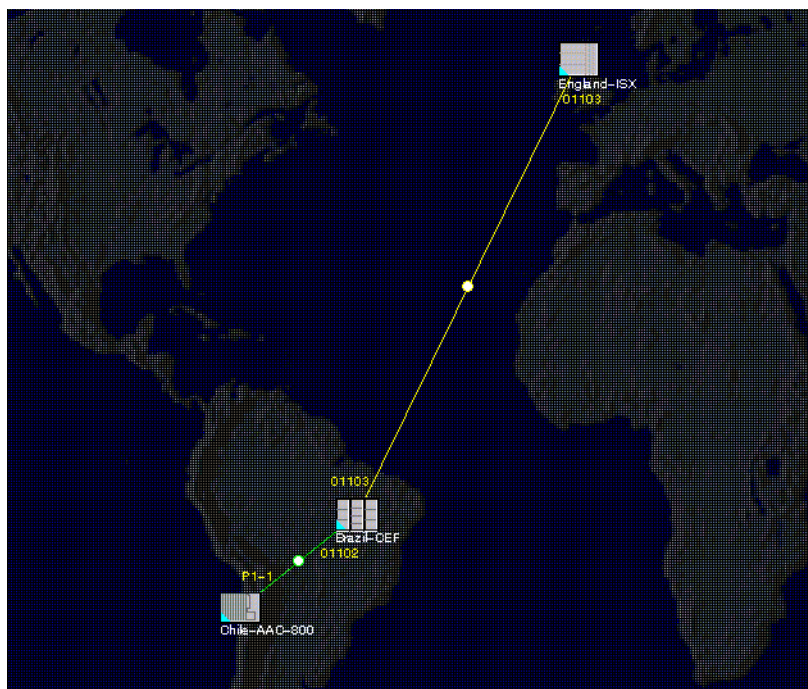


Figure 9-19. A Sample Circuit Trace Map

Circuit Trace (Continued)

Characteristics of a Circuit Trace Map

The characteristics of a circuit trace map are:

- The sites will always display in grey - there is no service state information provided for the sites on a circuit trace map.
- The interties cannot be clicked.
- The color of the interties on the circuit trace may not match that on the DND Workspace network map; it will ONLY indicate the highest alarm severity of the NPCs and ports that are part of the network circuit.
- The NPC and port numbers of the intertie that are part of the circuit are displayed at either end of the intertie. If the circuit loops back through the intertie, up to two sets of NPCs and ports can be displayed per intertie. If there are more than two passes through the intertie, the ports are replaced with "*****".

Actions on a Circuit Trace Map

On a circuit trace map, you can: move network elements and groups, zoom in and unzoom an area, expand and condense groups. No other network map actions are available.

To expand, or condense an individual group, use the Group Icon Menu.

To zoom in on an area:

- **Workstation:** Hold down right mouse button and drag diagonally. Release when outline appears around desired area.
- **PC:** Double-click either mouse button and drag diagonally. Release when outline appears around desired area.

(Continued on next page)

Circuit Trace (Continued)

Actions on a Circuit Trace Map, Continued

To unzoom, condense or expand all groups on a circuit trace map, use the circuit trace map pull-down menu:

1. Right-click and release on an empty spot on the circuit trace map.
A pop-up menu will appear on the circuit trace map.
2. Select the choice from the pop-up menu.



Figure 9-20. Circuit Trace Pop-Up Menu

Closing the Circuit Trace Table and Map

To close the circuit trace table, double-click on the window menu button. To close the circuit trace map, click **Close**.

Circuit Profiles

Description

Specify field values once in a profile and re-use the profile to create new circuits. The CIRCUIT PROVISIONING form allows you to define profiles based on the NPC types and use them to create new circuits using the same or similar NPC types.

Profiles and Circuit Types

A circuit profile is used to create circuits using the same or similar NPC types. This is true for both the FROM NPC and TO NPC. There are six categories of NPC types:

- DMB
- Clear DS1
- Clear E1
- Domestic
- CEPT CAS
- CEPT NSA.

When you use a profile as a basis for a new circuit, you can change all field entries, except **Circuit Class** and **Bandwidth Type**. **Control Options** are not saved as part of a profile. Each profile is marked as available for public use by all DND users, or for private use by your own login.

Profile ID Field

Use the **Profile ID** field located near the top of the screen to select an existing profile as a basis for a new circuit.

Circuit Profiles (Continued)

Profile Box

The **Profile Box** located at the bottom of the CIRCUIT PROVISIONING form is used to create and delete circuit profiles. You can save or delete a profile from any circuit **Action**.



Profile

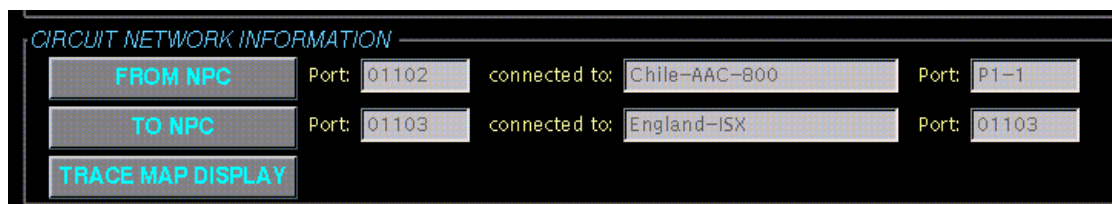
Save Delete Profile ID: pb-prof Availability: ☒ Private ☐ Public

Figure 9-21. DND GUI: Profile Box

Profiles and Network A-Z Circuit Creation

Using a circuit profile, you can easily create a network A-Z circuit with a minimum of new field entries and mouse clicks.

When the NPC is in an intertie to another DACS, the **FROM NPC** and **TO NPC** buttons appear in the CIRCUIT NETWORK INFORMATION box on the CIRCUIT PROVISIONING form. The **FROM NPC** and **TO NPC** buttons enable you to slide through the intertie to the next part of the circuit. This is very useful when creating or modifying a network A-Z circuit.



CIRCUIT NETWORK INFORMATION

FROM NPC Port: 01102 connected to: Chile-AAC-800 Port: P1-1

TO NPC Port: 01103 connected to: England-ISX Port: 01103

TRACE MAP DISPLAY

Figure 9-22. CIRCUIT NETWORK INFORMATION Box

Circuit Profiles (Continued)

**Example: Network
A-Z Circuit and
Circuit Profile**

This example shows how a profile can be used to create a network A-Z circuit.

Assume there are interties between DACS#1, DACS#2, and DACS#3.

1. Create a circuit on DACS#1 using a profile.
 2. Click **TO NPC**. The form transitions to DACS#2 with the same profile and the FROM Side of the circuit filled in.
 3. Specify the TO NPC information and execute the form.
 4. Click **TO NPC**. The form transitions to DACS#3 with the same profile and the FROM Side of the circuit filled in.
 5. Specify the TO NPC information and execute the form.
-

DND GUI: CIRCUIT PROVISIONING Form

Overview

The execution of a properly filled out CIRCUIT PROVISIONING form sends the appropriate MML commands (i.e., CONN, DISC, etc.) to the DACS to physically establish the cross-connection. The DND records the circuit information in the DND and DACS databases.

CIRCUIT PROVISIONING

Site Name: A-CEF-01-NJ-MANAL Profile ID: (no profile) Action: ACTIVATE

Ckt Class: FDX: FULL DUPLEX

Circuit ID: m-ckt-01

Initial status: NULL — Initial status for circuit

— New Circuit can be based on Profile ID

CIRCUIT ENDPOINTS

FROM NPC

ID: mfc211 NPC Type: DE100 Hier: 02211 Extd: 0211

TO NPC

ID: mfc212 NPC Type: DE100 Hier: 02212 Extd: 0212

Bandwidth Type: A: ALTERNATING Bandwidth: 1

FROM Channel: 01 TO Channel: 01 — Enter FROM and TO Channel numbers

CIRCUIT INFORMATION

Circuit Options

NAM: ☐ AIS ☐ RDLN ☐ OOS ☐ INCL ☐ DCC ☐ TLA

Channel Options

Trunk Conditioning: TRSP Insertion Word: FF Signaling Conversion:

Circuit Data

Location A: Location Z: Customer Name: Priority: 00

Remarks:

Service Date

Day: 05 Month: Jan Year: 2000 — Select the beginning Service Date for the circuit (default = present date)

CIRCUIT NETWORK INFORMATION

FROM NPC Port: 02211 connected to: A-CEF-05-TX-DALLA Port: 02211

TRACE MAP DISPLAY

Control Options

Reconcile

Mode: ☒ DND and DACS ☐ DND only ☐ DACS only

Execution Mode

Mode: ☒ Immediate ☐ Schedule

Profile

Save Delete Profile ID: (no profile) Availability: ☒ Private ☐ Public

Back Execute Restart Close

Unsigned Java Applet Window

Annotations:

- FROM NPC and TO NPC Identifiers
- Bandwidth Information
- Select the appropriate Circuit Options
- Select Channel Options
- The Circuit Data fields are optional; for the user's information only
- Select the beginning Service Date for the circuit (default = present date)

Figure 9-23. The CIRCUIT PROVISIONING Form, ACTIVATE Action

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions The field values for the CIRCUIT PROVISIONING form are described in Table 9-2.

Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form

Field	Description
Site Name	(Combo box) Mandatory. Select the name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically. To change the sorting order, modify the setting for the SORT_NAME_BY variable.
Profile ID	(Combo box) Optional. For creating new circuits, select a circuit profile that will be used as a basis for a new circuit. The profile and the new circuit must have similar NPC types. Valid for <i>ACTIVATE</i> , <i>ALTROUTE</i> , <i>PEND</i> , and <i>COMBINE</i> .
Action	(Combo box) Specifies the CIRCUIT PROVISIONING operation. The valid actions are: ■ <i>ACTIVATE</i> - Enters the circuit specified by Ckt ID in the DND database (if it does not yet exist) and cross-connects it in the frame, making it an existing, traffic-carrying circuit. <i>ACTIVATE</i> also changes the New Status of already existing circuits from <i>PENDING</i>, <i>PREEMPTED</i>, or <i>DEACTIVATED</i> to <i>ACTIVE</i> and from <i>ALTROUTED</i> to <i>ACTIVE</i> in <i>DACS only</i> mode. <i>ACTIVATE</i> is the default Action. ■ <i>DELETE</i> - Removes the specified circuit from the DND and DACS databases, changing the New Status to <i>NULL</i>.  NOTE: Deletion of an <i>ACTIVE</i> or <i>ALTROUTED</i> circuit results in disconnection of the circuit in the DACS before the record is deleted in the DND.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)**

Field	Description
Action, Continued	Deletion of a circuit that is listed in a Reconfiguration Plan is not allowed (except in <i>DACS only</i> mode). First, delete it from the plan. ■ MODIFY - Retrieves the specified circuit from the DND database for purposes of altering circuit attributes or Ckt ID. MODIFY does not change the New Status. You can MODIFY any user-accessible field for circuits in the <i>PENDING</i> or <i>DEACTIVATED Ckt Status</i>. You can MODIFY the following fields for circuits in the <i>ACTIVE</i> or, <i>PREEMPTED</i> or <i>ALTROUTED Initial Status</i>. Non-service affecting fields: Circuit ID, Customer Name, Service Date, Priority, Location A, Location Z, Remarks, Circuit Options: OOS, INCL, DCC. Service affecting fields: Trunk Conditioning, Insertion Word, Signaling Conversion, Framing, No Transmit (NTR), Circuit Options: NAM, AIS, RDLD.  CAUTION: <i>Changes to service affecting fields will interrupt traffic.</i>

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)**

Field	Description
Action, Continued	■ <i>PEND</i> - Enters the specified circuit (including <i>DEACTIVATED</i> ones) in the DND database as <i>PENDING</i>, to indicate it may soon be made <i>ACTIVE</i>. Activation of <i>PENDING</i> circuits may be dependent on equipment installation or on other sections of the circuit being established. ■ <i>DEACTIVATE</i> - Enters the specified circuit in the DND database as <i>DEACTIVATED</i> and disconnects it in the frame. ■ <i>COMBINE</i> - Combines multiple circuits that exist over either an alternate or a contiguous range of channels into a single, new high-rate circuit in the DND database. The source circuits must be <i>ACTIVE</i> and the combined circuit is made <i>ACTIVE</i>. Remember, high-rate circuits are implemented in the frame as single-channel circuits; thus, they are already in the frame. After the source circuits have been deleted in the DND database, the combined circuit is created there. At no time during the process is a command sent to the frame. The Ckt Classes of the source circuits must be all <i>HDX</i> or all <i>FDX</i> only. Use of channel 0 and of test circuits is prohibited. ■ <i>ALTROUTE</i> - Enters the specified circuit in the DND database as <i>ALTROUTED</i>. The DND may reroute the specified circuit over a path involving the preemption of other circuits. The operator will be informed of each preemption and will be required to confirm it. A circuit can be altrouted only once, and an <i>ALTROUTED</i> circuit cannot be preempted.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Action, Continued	■ NORMALIZE - Tries to place a real altrouted circuit in ACTIVE New Status or a pseudo-altrouted circuit in DEACTIVATED New Status. If the circuit returns to ACTIVE, it is cross-connected in the frame over its normal path. If the circuit returns to DEACTIVATED, it is not cross-connected in the frame. During the altrouting, one or more circuits may have been placed in the PREEMPTED New Status. If the circuit now being normalized is the only circuit preempting a PREEMPTED circuit, NORMALIZE attempts to return the PREEMPTED circuit to ACTIVE. Otherwise, NORMALIZE does not make the attempt. ■ ADDLEG - Adds a LEG to an existing BKB circuit. This action can also convert an existing FDX circuit to a BKB and add the first LEG Circuit ID (automatically populated and displayed) when this action is completed successfully. ■ DELLEG - Deletes a LEG from an existing BKB circuit. If it is the last LEG in the remaining backbone (BKB) circuit, it will be automatically converted to a FDX circuit. ■ CHGRPATH - Changes the return path for a BCON circuit to the specified LEG. It has the effect of swapping the BKB and LEG circuit. ■ TRACE - Allows you to trace a network circuit by displaying a circuit trace map and table.

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Initial Status/New Status	(Read-only field) A display-only field indicating the initial or new operating status of the circuit, after the form has been executed. Values are: ■ NULL - The circuit has not been defined and, therefore, is not in the DND database. To define the circuit, use the ACTIVATE Action ■ PENDING - The circuit is in the DND database, but is not cross-connected in the frame. The circuit has been noted as PENDING with the PEND Action. It is ready to be made ACTIVE on user request. To cross-connect the circuit, use the ACTIVATE Action ■ DEACTIVATED - The circuit is in the DND database but is not cross-connected in the frame. The DND record is marked DEACTIVATED. To cross-connect the circuit, use the ACTIVATE Action ■ ALTROUTED - The circuit is present in the frame and DND databases and is cross-connected in the DACS. However, it was temporarily rerouted over an alternate path with an ALTROUTE Action. If any part of the alternate path was in use by another circuit, that circuit was placed in PREEMPTED Ckt Status. A NORMALIZE Action is required to return the ALTROUTED circuit to its original path ■ PREEMPTED - The circuit was ACTIVE in the frame but has been temporarily disconnected so that one or more of its channels can be used by one or more ALTROUTED circuits. The circuit is in the DND database only. The NORMALIZE commands that return the ALTROUTED circuits to normal also return the PREEMPTED circuits to normal.

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Initial Status/New Status, Continued	■ ACTIVE - The circuit is present in the frame and DND databases and is cross-connected in the DACS. A circuit that exists in the frame is in both the frame and DND databases (unless there is a discrepancy) ■ P_ACTIVE - The P_ACTIVE status will be applied to partially connected n x 64 Kbps BCON circuits created through the echoed response process (ERP). P_ACTIVE status marks the n x 64 Kbps circuit when there is at least one disconnected cross-connect in the LEG circuit from ERP. The bandwidth in a P_ACTIVE LEG circuit is the number of 64 Kbps cross-connects in that circuit. ■ DEROUTED - The circuit was in ALTROUTED New Status but was placed in DEROUTED New Status at the beginning of an NPC ROLL (using the DND Forms Interface), and the system failed during the roll. You can DELETE, DEACTIVATE, or NORMALIZE a DEROUTED circuit. If the roll completes successfully, you will never observe the circuit in DEROUTED New Status. The Initial Status field reflects the last successful Action.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Circuit ID	(Text field) Mandatory. must be unique. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. Associates the name entered in this field with the circuit described by this form.
Ckt Class	(Combo box) Specify the type of circuit. The choices are: ■ <i>FDX: FULL-DUPLEX</i> - Applies to single-channel or high-rate DS0 cross-connections between NAS or CEPT NPCs, and to gateway circuits. Specifies a two-way, two-point circuit. ■ <i>HDX: HALF-DUPLEX</i> - Applies to single-channel or high-rate DS0 cross-connections between NAS or CEPT NPCs, and to gateway circuits. Specifies a one-way, two-point circuit. ■ <i>DMB: DIGITAL MPT BRIDGE</i> - Applies to single-channel, two-way, multipoint circuits. These circuits are complex; for example, are composed of multiple cross-connections requiring multiple CIRCUIT PROVISIONING forms. A Ckt Class of <i>DMB</i> identifies this cross-connection as a unit in a DMB circuit. The two types of DMB multipoint circuits are the symmetric voice circuit and the polling data circuit. Provision the backbone first and the branches subsequently. Use a Mode of <i>LEG</i> to identify an EFT, but a Mode of <i>BBL</i> or <i>BRD</i> on the opposite side of each leg to identify its use as a backbone or branch.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Ckt Class, Continued	Be sure to read the operating examples for DMB. The examples also cover cascading, the building of still more complex circuits using DMB circuits as units. ■ BKB: BCON BACKBONE - A circuit is classified as a BKB class if it is being used as the backbone circuit in BCON provisioning ■ LEG: BCON TRIBUTARY - A circuit is classified as a LEG class if it is being used as the tributary circuit in BCON provisioning. LEG circuits have the same parameters as the BKB circuit that it belongs to except for the following: Circuit ID Circuit status Circuit class Service date If a LEG circuit is classified as P_ACTIVE, its bandwidth will be smaller than the bandwidth of its BKB circuit.
(FROM or TO) NPC Type/Hier/Extd	(Read-only fields) These fields are displayed when the DND has recognized the NPC Specifier information previously entered. NPC Type indicates the circuit pack type. Hier indicates the FROM or TO NPC's hierarchical number. Extd indicates the FROM or TO NPC's extended number.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Direction	(Radio buttons) Optional. This field appears only when the Action is <i>ADDLEG</i>. This field defines which side of the backbone is the source broadcast side, FROM or TO. Mandatory. This field is mandatory when the first leg is added to a <i>FDX</i> circuit which will become the BKB. After at least one leg has been added, the field is read-only.
New Circuit ID	(Text field) 1-41 characters. Appears only when the Action is <i>MODIFY</i>. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. New name for the circuit ID.
Bandwidth Type	(Radio buttons) Mandatory. Indicates how bandwidth is allocated in an NPC. The choices are: ■ <i>C: Contiguous</i> ■ <i>A: Alternating</i> ■ <i>R: Random</i> Alternating bandwidth is allocated on alternate channels. A maximum of 12 channels are available for NAS; 16 for CEPT. Contiguous bandwidth is allocated on consecutive channels. For example, starting with Channel 5, a Bandwidth of 3 allocates 5, 6, and 7 for contiguous; 5, 7, and 9 for alternating.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Bandwidth Type, Continued	Random permits allocation of channels between two NPCs in a random fashion; for example, channel 1 to channel 10, 2 to 5, 3 to 7, etc. The value is set to <i>Contiguous</i> for a Ckt Class of <i>DMB</i>. If the Bandwidth of the circuit is greater than 1, then the circuit is a high-rate circuit. This field does not appear for clear DS1/E1 connections.
NPC Specifier/NPC	(Radio buttons and Text field) Mandatory. Fields for specifying the FROM and TO NPC. The three choices for entering NPC data are: ■ <i>ID</i> - If selected, Enter the NPC name in the NPC: field. ■ <i>Hier</i> - If selected, enter the NPC's hierarchical number in the NPC: field ■ <i>Extd</i> - If selected, enter the NPC's extended number in the NPC: field.
FROM Channel/ TO Channel	(Text field) The FROM or TO channel number, 0-31 for CEPT or 1-24 for NAS. DMB channel numbers can range from 1 to 85. This field is displayed for <i>Contiguous</i> or <i>Alternating</i> circuits. Use Find on either the FROM or TO side to locate available channels for creating a new circuit. For the ADDLEG Action there is an identifier for the LEG channel.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Mode	(Radio buttons) Appears only when the Ckt Class is <i>DMB</i>. Specifies the use of the preceding FROM and TO Channel in a DMB multipoint circuit. ■ <i>SYM</i> - The associated channel is to be used as the DMB side of a leg in a symmetric voice circuit. ■ <i>BRD</i> - The associated channel is to be used as the DMB side of a broadcast, or branch, leg of a polling data circuit. ■ <i>BBL</i> - The associated channel is to be used as the DMB side of the backbone leg of a polling data circuit. ■ <i>LEG</i> - The associated channel is to be used as an EFT in any leg of the circuit. A DMB channel must be in a DMB NPC.
Bandwidth	(Combo box) Mandatory. Indicates the number of 64 Kbps channels constituting a high-rate circuit. For example, a 128 Kbps data channel consists of two 64 Kbps channels. For NAS NPCs, the available bandwidth is 1-24 channels; for CEPT NPCs, the available bandwidth is 1 through 32 channels. Bandwidth defaults to 1 channel for a Ckt Class of <i>DMB</i>. The bandwidth of a random circuit must be greater than 1. This field disappears for clear DS1/E1 connections.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
(ALTROUTE INFORMATION) Verified	(Checkbox) For the ALTROUTE Action only. When selected, this option allows the DND to preempt a circuit. If unselected, the DND will deny the Action and display the following message in the Command Response field: <i>Verify it is OK to preempt the circuits in the preempt pop-up.</i>
Circuit Options	(Checkboxes) Names options for activating or deactivating the circuit. ⇒ NOTE: Only <i>RDLD</i>, <i>OOS</i>, and <i>INCL</i> are available for clear DS1/E1 circuits. ■ <i>NAM</i> - No A-to-mu law conversion is to be applied to the circuit if it is CEPT only; for example, if it is not a gateway ■ <i>AIS</i> - Alarm Indication Signal (all 1s, including the framing bit) is to be asserted on the downstream NPC when it is detected on the upstream NPC or when the upstream NPC asserts a CGA. Applies to NAS, <i>FDX</i>, high-rate circuits of bandwidth 24 only ■ <i>RDLD</i> - Red-lined. The circuit is to require specific authorization to disconnect; the <i>INCL</i> keyword must be set For DMB circuits, if one leg of a conference is designated as <i>RDLD</i>, all legs must be. This condition applies only to DACS II.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Circuit Options, Continued	■ <i>OOS</i> - Out of service. A disconnect is to be effected when the NPC at one or both ends of the circuit are <i>OOS</i> ■ <i>INCL</i> - Included. Authorizes disconnects of <i>RDLD</i> circuits. This <i>INCL</i> keyword applies to a DACS II disconnect only. The <i>INCL</i> keyword (like the <i>CUS</i> keyword) from a DACS II connect is not supported. ■ <i>DCC</i> - Disconnect channel code. Causes the frame to assert the user-defined disconnect code (specified in the Insertion Word field) on disconnected channels ■ <i>TLA</i> - Terminate and Leave Activated. If it is unselected, <i>TLR</i>, Terminate and Leave Released is to be in effect for this circuit ⇒ NOTE: <i>TLR</i> is the normal state for traffic-carrying circuits. It means that the circuit is not terminated. (Terminate and Leave released. Refer to this chapter and <i>Chapter 18, Test Ports and Test Access</i>) <i>TLA</i> is a state generally used only for initial testing from end to end. If you make a circuit <i>ACTIVE</i> (or <i>ALTROUTED</i>) on the frame in the <i>TLA</i> state, the DND system automatically reverses this state to <i>TLR</i> in the DND database once the command has been sent. To change the termination state of the circuit on the frame back to <i>TLR</i>, send the command again. You would have to reset this field manually to <i>TLA</i> to override this automatic reversal.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Circuit Options, Continued	 NOTE: The unassigned Insertion Word , specified under NPC PROVISIONING for the NPC, is transmitted in the terminated direction(s).
No Transmit (NTR)	(Radio buttons) Appears only when Ckt Class is <i>DMB</i>. Specifies whether the leg is one-way or two-way. The choices are: ■ <i>FROM</i> - Transmission is shut off toward the FROM direction. ■ <i>TO</i> - Transmission is shut off toward the TO direction.  NOTE: The NTR capability applies only to DACS II.
FROM Channel/ TO Channel/ Leg Channel	(Text field) Appear for RANDOM Bandwidths only. ■ FROM Channel indicates the listing of channels on the FROM side (up to 32 channel entries) ■ TO Channel indicates the listing of channels on the TO side (up to 32 channel entries) Use Find on either the FROM or TO side to locate available channels for creating a new circuit. ■ Leg Channel indicates the listing of channels for the Leg (up to 32 channel entries). Appears for the ADDLEG Action only Enter a comma after each channel in the list.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description									
Trunk Conditioning	(Text field) Trunk conditioning specifies whether A/B-robbled-bit signaling is to be used to signal failure on the specified circuit.									
	This information will only be used during failure of either an incoming signal or an NPC. When the NPC can no longer frame on the signal, it initiates trunk conditioning on all DS0 channels of the NPC. The signaling bits sent during failure are intended to disconnect active calls and hold the circuits busy (if appropriate) for the duration of the failure.									
	DDC circuits require a Trunk Conditioning of <i>TRSP</i> and an Insertion Word of <i>MUX</i> , which inserts <i>MUX</i> for the duration of the failure, and does not send the signaling bits. The value of Trunk Conditioning also is set at <i>TRSP</i> for a Ckt Class of <i>DMB</i> .									
	The TC field disappears for clear DS1/E1 connections; trunk conditioning is not supported for them. The trunk-conditioning code is:									
	<i>0011, 0011</i> . Indicates the circuit will use A/B signaling. The A/B bits sent upon detection of a failure condition are:									
	<table><tr><td>Duration of failure</td><td>FROM Facility</td><td>TO Facility</td></tr><tr><td>First 2.5 sec</td><td><i>00</i></td><td><i>00</i></td></tr><tr><td>Remainder</td><td><i>11</i></td><td><i>11</i></td></tr></table>	Duration of failure	FROM Facility	TO Facility	First 2.5 sec	<i>00</i>	<i>00</i>	Remainder	<i>11</i>	<i>11</i>
Duration of failure	FROM Facility	TO Facility								
First 2.5 sec	<i>00</i>	<i>00</i>								
Remainder	<i>11</i>	<i>11</i>								

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Trunk Conditioning, Continued	Logic 0 is an on-hook (idle). Logic 1 is an off-hook (busy). Circuits that use A/B signaling must always have an Insertion Word specified. ⇒ NOTE: The TC-value format shown is for <i>FDX</i>, full duplex. For <i>HDX</i>, replace the FROM side's number with hyphens. For an <i>FDX</i> version of <i>X-05,X-63</i> the <i>HDX</i> result would be <i>X---,X-63</i>. ⇒ NOTE: It is important to remember that with <i>HDX</i>, you must put hyphens on one side. Virtual multipoint circuits also are <i>HDX</i>. <i>0101,0101</i> <i>----,0011</i> The previous value is used in connection with four-state signaling only. <i>TRSP</i> Transparent. Indicates the circuit will not use A/B signaling. <i>X-FF,X-FF</i> <i>X-99,X-99</i> <i>X---,X-FF</i>

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Trunk Conditioning, Continued	The previous two values are used in connection with 16-state signaling only. <i>11111111,11111111</i> <i>-----,11111111</i> See the DACS I/O manual for other valid TC codes and for more information about trunk conditioning.
Insertion Word	(Text field) Insertion Word. Specifies the 8-bit alternate code to be inserted into the DS0 outgoing time slots of mapped channels of an NPC during OOS conditions, including carrier failure and removal of an NPC. The DDC is still sent toward both DS1 lines on unmapped channels. A yellow alarm is sent toward the failed DS1. The selections are: ■ <i>TRB</i> - Insert the standard trouble code, Hex E4, or 11100100. You can also enter <i>X-E4</i>. ■ <i>MUX</i> - Insert the MUX out-of-sync code, Hex 1A, or 00011010. You can also enter <i>1A</i>. When DS0 channels of DDS lines are cross-connected in the CCN, <i>TRSP</i> is used for Trunk Conditioning and <i>MUX</i> for Insertion Word. The latter is inserted in the mapped DS0 channels of the outgoing DS1 line away from the failure. UMC is still inserted on unmapped channels. ■ <i>nn</i> - Insert an 8-bit pattern specified by Hex <i>nn</i>. Currently <i>7F</i>, <i>FF</i>, and <i>BF</i> are selections

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Signaling Conversion	(Text field) Optional. Signaling conversion is used in CEPT and GATEWAY cross-connections in conjunction with CAS signaling. If the Signaling Conversion field is not specified, all four signaling bits will be cross-connected unchanged. The Signaling Conversion field is defined as: <i>xxxx,yyyy</i> where the first four bits, <i>xxxx</i>, represent the FROM side and the last four bits, <i>yyyy</i> represent the TO side. The comma separator is mandatory. All eight bits can be controlled independently. The valid values for these bits are: ■ <i>P</i> - Pass unchanged ■ <i>V</i> - Pass inverted ■ <i>0</i> - Set output to 0 ■ <i>1</i> - Set output to 1 ■ <i>-</i> - 0 value, the circuit is one-way All 8 bits are used only for <i>FDX</i>, full duplex. For <i>HDX</i>, replace the FROM side's number with hyphens. For example: <i>0011,0011</i> in <i>FDX</i> would become <i>----,0011</i> in <i>HDX</i>. If <i>-</i> is used, all four characters in the group must be <i>-</i>. If they are not, the frame may deny the command. This field disappears for clear DS1/E1 connections.

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued **Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued**

Field	Description
Framing	(Text field) The value of the framing bits in the FW in cases where a CEPT channel 0 (time slot 0) is being connected to some other CEPT channel (non-TS0). ■ <i>abcdefg, hijklmn</i> - An arbitrary bit pattern of 0s and 1s, where <i>abcdefg</i> is the pseudo-FW in the TO-FROM direction and <i>hijklmn</i> is the pseudo-FW in the FROM-TO direction. Make sure that the pseudo-FW can in no case be the same as the FW or the NFW. ■ <i>NFW</i> - Use the NFW in channel 0 of all time frames.
Location A	(Text field) Optional. Up to 24 characters. The Station ID of the FROM side of the circuit being provisioned. This field is informational only.
Location Z	(Text field) Optional. Up to 24 characters. The Station ID of the TO side of the circuit being provisioned. This field is informational only.
Customer Name	(Text field) Optional. Up to 12 characters. An informational field only. The name of the customer to be associated with the current circuit. An automatically supplied value of <i>ERP</i> identifies circuits created by the ERP feature.
Service Date	(Combo boxes) Optional. Select the date the circuit is first placed into service. The fields are: ■ Day: (01 thru 31) ■ Month: (Jan thru Dec) ■ Year: (1990 thru 2037)

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Priority	(Text field) Mandatory. Informational only, one or two alphanumeric characters. Indicates to the user the relative importance of the circuit for restoral actions. Regardless of its use, a circuit can not be assigned more than one CP. The default is <i>00</i> .
Remarks	(Text field) Optional. 0-72 characters. A user-defined informational field. A DND operator can enter informational comments.
Port/Connected To	(Read-only fields) Appears only if at least ONE port in the circuit is connected to the network circuit. Hier indicates the hierarchical NPC number on either or both the TO or FROM side of the circuit. Connected To indicates the Site Name of the Far End (other side of the intertie).
Reconcile Mode	(Radio buttons) Select the database where the results from the current Action will be saved. The choices are: ■ <i>DND and DACS</i> - Save the results to both the DND and DACS databases (default) ■ <i>DND only</i> - Save the results to the DND database only ■ <i>DACS only</i> - Save the results to the DACS database only

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DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions, Continued Table 9-2. DND GUI: Field Descriptions for the CIRCUIT PROVISIONING Form, Continued

Field	Description
Execution Mode	(Radio buttons/Combo boxes and Text fields also if <i>Schedule</i> is selected) Select when the current Action should take place. The choices are: ■ <i>Immediate</i> - Executes the Action as soon as Execute is clicked ■ <i>Schedule</i> - Executes the Action at a time and frequency selected by the user. After selecting <i>Schedule</i>, click Continue... to display the following combo box fields: — DATE fields: Day: (01 thru 31) Month: (Jan thru Dec) Year: (1990 thru 2037) — TIME fields: Hour: (00 thru 23) Minute: (00 thru 59) — REPEAT fields: Number of times (enter any number) If number of times is set to "00", then the task repeats an infinite number of times (forever). Interval (enter any number) Scale: (None/Minutes/Hours/Days)
Profile ID	(Text field) Specify a Profile ID to be saved or deleted. The Profile ID can include 11 alphanumeric characters. Spaces are not allowed
Availability	(Radio buttons) For a new profile, indicate if the profile should be available to: ■ <i>Public</i> - All DND users ■ <i>Private</i> - Only to your login.

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Value Summary

Table 9-3. DND GUI: Summary of CIRCUIT PROVISIONING Field Values

Field	Size	Values
Site Name*	24	Previously created under NE Provisioning.
Action*	10	<i>ACTIVATE, MODIFY, PEND, DELETE, DEACTIVATE, ALTROUTE, NORMALIZE, COMBINE, ADDLEG, DELLEG, CHGRPATH, and TRACE.</i>
Profile ID		Previously created in Profile Box.
Initial Status/ New Status	11	<i>NULL, PENDING, DEACTIVATED, ALTROUTED, PREEMPTED, ACTIVE, DEROUTED, and P_ACTIVE.</i>
Circuit ID*	41	All printable characters except *, ?, \, [,], ^, ", %, .
New Circuit ID	41	All printable characters except *, ?, \, [,], ^, ", %, .
Ckt Class †	3	<i>FDX, HDX, DMB, BKB, and LEG.</i>
Direction	1	<i>FROM, TO</i>
Hier	5	<i>xyzz, xx is 01-16, y is 1-8, zz is 01-40.</i>
Extd	4	<i>1-x, depending on the frame type and hardware configuration.</i>
NPC ID*	41	All printable characters except *, ?, \, [,], ^, ", %, .
FROM Channel/ TO Channel†	2	<i>00-24 NAS, 00-31 CEPT, 1-85 DMB with DACS II.</i>
Mode†	3	<i>SYM, BRD, BBL, and LEG</i>
Bandwidth†	2	<i>1-24 NAS, 1-31 CEPT.</i>
Bandwidth Type†	1	<i>C: Contiguous, A: Alternating, or R: Random</i>

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Value Summary, Continued

Table 9-3. DND GUI: Summary of CIRCUIT PROVISIONING Field Values, Continued

Field	Size	Values
Circuit Options**	7 Options	<i>NAM, AIS, RDLD, OOS, INCL, DCC, and TLA.</i>
No Transmit (NTR)**	1	<i>FROM, TO</i>
FROM Channel	2 (up to 32 fields)	<i>00-31</i>
TO Channel	2 (up to 32 fields)	<i>00-31</i>
Leg Channel	2 (up to 32 fields)	<i>00-31</i>
Trunk Conditioning†	17	<i>0011,0011 0101,0101 ----,0011 TRSP X-FF,X-FF X-99,X-99 X---,X-FF 11111111,11111111 -----,11111111</i>
Insertion Word**	3	<i>TRB, MUX, 7F, FF, BF.</i>
Signaling Conversion**	9	<i>xxxx,yyyy where x, y = [P,V, 0,1,-].</i>
Framing	15	<i>abcdefg,hijklmn where a letter is 0 or 1. Alternatively, NFW.</i>

(Continued on next page)

DND GUI: CIRCUIT PROVISIONING Form (Continued)

Field Value Summary, Continued

Table 9-3. Summary of CIRCUIT PROVISIONING Field Values, Continued

Field	Size	Values
Location A	24	All printable characters except *, ?, \, [,], ^, ", %, .
Location Z	24	All printable characters except *, ?, \, [,], ^, ", %, .
Customer Name	12	All printable characters except *, ?, \, [,], ^, ", %, .
Service Date	7	dd mmm yy
Priority*	2	a-z, A-Z, 0-9
Remarks	72	All printable characters except (pipe).
Profile ID	12	All printable characters except *, ?, \, [,], ^, ", %, .
Availability		Public or Private

* Mandatory field

** Traffic-affecting field

† Both Mandatory and Traffic-affecting field

DND Forms: CIRCUIT PROVISIONING Form

Sample Circuit Provisioning Form Select CIRCUIT from the PROVISIONING menu. The CIRCUIT PROVISIONING form is displayed, as shown in Figure 9-24.

DND USER INTERFACE

15:54 21 Dec 1999 DND R3.0.1 / DND Forms R8.0.1

Status:

Alarms: **CEF** **CEF2**

CIRCUIT PROVISIONING

Site Name: **Brazil-CEF**

Action: **ACTIVATE**

Ckt ID: **new_ckt-1**

Ckt Status: **NULL**

Ckt Class: **FDX**

Bandwidth Type: **A**

Hier Ext NPC ID Ch

FROM: _____

TO: _____

Bandwidth: **1** Options: _____

TC: **0011.0011** IW: **IRB** SC: _____ Framing: _____

Loc A: _____ Loc Z: _____

Customer Name: _____ Service Date: **DD MMM YY** Ckt Priority: **00**

Rmks: _____

The command completed successfully

Enter the Circuit ID _____

garfield: UI-04

HELP **NEXTPAGE** **QUIT** **RECNCILE** **TOP MENU** **PRINT** **EXECUTE**

Figure 9-24. DND Forms: CIRCUIT PROVISIONING Form

DND Forms: CIRCUIT PROVISIONING Form (Continued)

Browse Circuit Data

You can browse through the circuits stored in the DND database. In that case, you will use the CIRCUIT PROVISIONING SEARCH CRITERIA form, which is displayed after you enter an **Action** of *BROWSE* and press **EXECUTE**. The CIRCUIT PROVISIONING SEARCH CRITERIA form is displayed, as shown in Figure 9-25.

The screenshot shows a terminal window titled "DND USER INTERFACE". The header displays the date and time "15:57 21 Dec 1999" and the version "DND R3.0.1 / DND Forms R8.0.1". Below the header, the "Status:" field is empty, and the "Alarms:" field shows "CEF CEF2". The main form is titled "CIRCUIT PROVISIONING" and contains the following fields:

- Site Name: **Brazil-CEF**
- Action: **BROWSE**
- Ckt ID: **cef_ckt1**
- Ckt Status: **ACTIVE**
- Ckt Class: **FDX**
- Bandwidth Type: **A**

Below these fields is a table with columns "Hier", "Ext", "NPC ID", and "CT".

Hier	Ext	NPC ID	CT
FROM: 01102	0002	NPC2	001
TO: 01103	0003	NPC3	003

Below the table, the "Bandwidth:" field is set to **01** and the "Options:" field is empty. Further down, the "TC:" field is set to **0011,0011**, the "IW:" field is set to **IRB**, the "SC:" field is empty, and the "Framing:" field is set to **001**. The "Loc A:" and "Loc Z:" fields are empty. The "Customer Name:" field is empty, the "Service Date:" field is set to **21 Dec 99**, and the "Ckt Priority:" field is set to **00**. The "Rmks:" field is empty. Below the form, the text "Item 1 of 2. Use NEXT/PREVIOUS keys to scroll." is displayed, followed by "Enter the Circuit ID:". At the bottom, the "garfield: UI-04" text is shown, and a row of buttons includes **HELP**, **NEXT**, **NEXTPAGE**, **QUIT**, **PREVIOUS**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 9-25. DND Forms: CIRCUIT PROVISIONING SEARCH CRITERIA Form

DND Forms: CIRCUIT PROVISIONING Form (Continued)

Field Descriptions Field descriptions for the CIRCUIT PROVISIONING form are described in Table 9-4.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See <i>Chapter 5, NE Provisioning</i> for more details.
Action	Mandatory. Enter the action to be performed with regard to the circuit. ■ ACTIVATE - Enters the circuit specified by Ckt ID in the DND database (if it does not yet exist) and cross-connects it in the frame, making it an existing, traffic-carrying circuit. ACTIVATE also changes the Ckt Status of already existing circuits from <i>PENDING</i>, <i>PREEMPTED</i>, or <i>DEACTIVATED</i> to <i>ACTIVE</i> and from <i>ALTROUTED</i> to <i>ACTIVE</i> in <i>local only</i> mode. ACTIVATE is the default Action. ■ MODIFY - Retrieves the specified circuit from the DND database for purposes of altering circuit attributes or Ckt ID. MODIFY does not change the Ckt Status. You can MODIFY any user-accessible field for circuits in the <i>PENDING</i> or <i>DEACTIVATED</i> Ckt Status. You can MODIFY the following fields for circuits in the <i>ACTIVE</i> or, <i>PREEMPTED</i> or <i>ALTROUTED</i> Ckt Status:

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Action , Continued	Non-service affecting fields: Ckt ID, Customer Name, Service Date, Ckt Priority, Loc A, Loc Z, Rmks, Options: OOS, INC, DCC. Service affecting fields: TC, IW, SC, Framing, NTR, Options: NAM, AIS, RDLD.  CAUTION: <i>Changes to service affecting fields will interrupt traffic.</i> ■ DELETE - Removes the specified circuit from the DND and DACS databases, returning the Ckt Status to NULL.  NOTE: Deletion of an ACTIVE circuit results in deactivation of the circuit in the DACS before the record is deleted in the DND. Deletion of an ALTROUTED circuit results in normalization of the circuit in the DACS before the record is deleted in the DND. Deletion of a circuit that is listed in a Reconfiguration Plan is not allowed (except in <i>local only</i> mode). First delete it from the plan. ■ PEND - Enters the specified circuit (including DEACTIVATED ones) in the DND database as PENDING, to indicate it may soon be made ACTIVE. Activation of PENDING circuits may be dependent on equipment installation or on other sections of the circuit being established.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Action , Continued	■ <i>DEACTIVATE</i> - Enters the specified circuit in the DND database as <i>DEACTIVATED</i> and disconnects it in the frame. ■ <i>ALTRROUTE</i> - Enters the specified circuit in the DND database as <i>ALTRROUTED</i>. The DND may reroute the specified circuit over a path involving the preemption of other circuits. The operator will be informed of each preemption and will be required to confirm it. A circuit can be altrouted only once, and an <i>ALTRROUTED</i> circuit cannot be preempted. ■ <i>NORMALIZE</i> - Tries to place a real altrouted circuit in ACTIVE Ckt Status or a pseudo-altrouted circuit in DEACTIVATED Ckt Status. If the circuit returns to <i>ACTIVE</i>, it is cross-connected in the frame over its normal path. If the circuit returns to <i>DEACTIVATED</i>, it is not cross-connected in the frame. During the altrouting, one or more circuits may have been placed in the PREEMPTED Ckt Status. If the circuit now being normalized is the only circuit preempting a <i>PREEMPTED</i> circuit, <i>NORMALIZE</i> attempts to return the <i>PREEMPTED</i> circuit to <i>ACTIVE</i>. Otherwise, <i>NORMALIZE</i> does not make the attempt. ■ <i>BROWSE</i> - Gives you read-only access to the DND database for retrieving and scrolling circuit records. As soon as you press EXECUTE after entering an Action of <i>BROWSE</i>, the DND displays the CIRCUIT PROVISIONING SEARCH CRITERIA form. Its fields are taken from the CIRCUIT PROVISIONING form. Entering a value in any defined field restricts the search. To initiate the search, press EXECUTE. To return to CIRCUIT PROVISIONING without executing, press QUIT.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Action , Continued	The following rules apply: — You can search on Ckt ID, Ckt Status, Ckt Class, NPC ID, Mode, Bandwidth Type, Options, NTR, TC, IW, SC, Framing, Customer Name, Ckt Priority, Loc A, Loc Z, Rmks. — The default for all fields is all values of the fields. — The wildcard character, *, replaces zero or more characters. The ? replaces any single character. Wildcards are allowed in all alphanumeric fields except Options. — The character, <, followed by a value, in numeric fields: Hier, Ext, Ch, Bandwidth, Service Date, obtains records for values less than the entered value; the character, >, greater. ■ COMBINE - Combines multiple circuits that exist over either an alternate or a contiguous range of channels into a single, new high-rate circuit in the DND database. The source circuits must be ACTIVE and the combined circuit is made ACTIVE. Remember, high-rate circuits are implemented in the frame as single-channel circuits; thus, they are already in the frame. After the source circuits have been deleted in the DND database, the combined circuit is created there. At no time during the process is a command sent to the frame. The Circuit Classes of the source circuits must be all HDX or all FDX only. Use of channel 0 and of test circuits is prohibited.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Action , Continued	Specify the combined circuit characteristics on a single CIRCUIT PROVISIONING form. The channel numbers in the combined circuit are the same as the source circuits'; however, the Bandwidth of the combined circuit must be made equal to the sum of the Bandwidths of the source circuits. Therefore, the source circuits' channels must run contiguously or alternately upward from the combined circuit's starting channel, and the combined Bandwidth Type must be correct for the channels The following fields of the source circuits must have the same values: TC, IW, SC, Circuit Class. Options settings of RDLD and no NAM must be the same throughout. The Ckt ID of the combined circuit can be unique, or it can be one of the source circuits' Ckt IDs. You can reuse the Ckt ID of a <i>DEACTIVATED</i> or <i>PENDING</i> circuit, provided all the channels of that circuit are also in use by the <i>ACTIVE</i> source circuits. No other cases are allowed. ■ ADDLEG - Adds a LEG to an existing BKB circuit. This action can also convert an existing FDX circuit to a BKB and add the first LEG Ckt ID (automatically populated and displayed) when this action is completed successfully. ■ DELLEG - Deletes a LEG from an existing BKB circuit. If it is the last LEG in the remaining backbone (BKB) circuit, it will be automatically converted to a FDX circuit. ■ CHGRPATH - Changes the return path for a BCON circuit to the specified LEG. It has the effect of swapping the BKB and LEG circuit.
Ckt Status	A display only mode indicating the status of the circuit. <i>NULL</i> The circuit has not been defined and, therefore, is not in the frame or DND databases. To define the circuit, use the ACTIVATE Action.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Ckt Status, Continued	
<i>PENDING</i>	The circuit is in the DND database, but is not cross-connected in the frame. The circuit has been noted as <i>PENDING</i> with the <i>PEND Action</i> . It is ready to be made <i>ACTIVE</i> on user request. To cross-connect the circuit, use the <i>ACTIVATE Action</i> .
<i>DEACTIVATED</i>	The circuit is in the DND database but is not cross-connected in the frame. The DND record is marked <i>DEACTIVATED</i> . To cross-connect the circuit, use the <i>ACTIVATE Action</i> .
<i>ALTROUTED</i>	The circuit is present in the frame and DND databases, is cross-connected in the frame, and is carrying transmission. However, it was temporarily rerouted over an alternate path with an <i>ALTROUTE Action</i> . If any part of the alternate path was in use by another circuit, that circuit was placed in <i>PREEMPTED Ckt Status</i> . A <i>NORMALIZE Action</i> is required to return the <i>ALTROUTED</i> circuit to its original path.
<i>PREEMPTED</i>	The circuit was <i>ACTIVE</i> in the frame but has been temporarily disconnected so that one or more of its channels can be used by one or more <i>ALTROUTED</i> circuits. The circuit is in the DND database only and is not carrying transmission. The <i>NORMALIZE</i> commands that return the <i>ALTROUTED</i> circuits to normal also return the <i>PREEMPTED</i> circuits to normal.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Ckt Status (Continued)	■ <i>ACTIVE</i> - The circuit is present in the frame and DND databases, is cross-connected in the frame, and is carrying transmission. A circuit can be defined in the DND database, but if it is not <i>ACTIVE</i>, it is not defined in the frame database. A circuit that exists in the frame is in both the frame and DND databases (unless there is a discrepancy). ■ <i>P_ACTIVE</i> - The <i>P_ACTIVE</i> status will be applied to partially connected n x 64 Kbps circuits through the echoed response process (ERP). <i>P_ACTIVE</i> status marks the n x 64 Kbps circuit when there is at least one disconnected cross-connect in the LEG circuit from ERP. The bandwidth in a <i>P_ACTIVE</i> LEG circuit is the number of <i>ACTIVE</i> (connected) cross-connects in that circuit. ■ <i>DEROUTED</i> - The circuit was in <i>ALTROUTED Ckt Status</i> but was placed in <i>DEROUTED Ckt Status</i> at the beginning of an NPC ROLL, and the system failed during the roll. You can <i>DELETE</i>, <i>DEACTIVATE</i>, or <i>NORMALIZE</i> a <i>DEROUTED</i> circuit. If the roll completes successfully, you will never observe the circuit in <i>DEROUTED Ckt Status</i>.
Ckt ID	Mandatory. must be unique. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. Associates the name entered in this field with the circuit described by this form.
BBL ID	Appears when the Ckt Class is BRD. Mandatory, when activating a new BRD circuit. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
LEG Ckt ID	Appears when the action is <i>ADDLEG</i> , <i>DELLEG</i> , or <i>CHGRPATH</i> . When the Action is <i>ADDLEG</i> , this is a display-only field that is automatically filled in after the action is executed. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.
Ckt Class	■ <i>FDX</i> - Full-duplex. Applies to single-channel or high-rate DS0 cross-connections between NAS or CEPT NPCs, and to gateway circuits. Specifies a two-way, two-point circuit. <i>FDX</i> can be abbreviated to <i>F</i>. ■ <i>HDX</i> - Half-duplex. Applies to single-channel or high-rate DS0 cross-connections between NAS or CEPT NPCs, and to gateway circuits. Specifies a one-way, two-point circuit. <i>HDX</i> can be abbreviated to <i>H</i>. ■ <i>BBL</i> - Backbone leg. Applies to single-channel or high-rate, DS0, virtual multipoint circuits between NAS or CEPT NPCs, and to gateway circuits. These circuits are complex; which are composed of multiple cross-connections requiring multiple CIRCUIT PROVISIONING forms. A Ckt Class of <i>BBL</i> identifies this unit as a one-way backbone leg broadcast circuit. Abbreviation not allowed (not unique). ■ <i>BRD</i> - Broadcast, or branch, leg. Applies to single-channel or high-rate, DS0, virtual multipoint circuits between NAS or CEPT NPCs, and to Gateway circuits. Specifies a one-way branch leg broadcast circuit. Abbreviation not allowed (not unique). In virtual multipoint operations, enter the <i>BBL</i> first. With existing circuits, Ckt Class is known and protected, and the field cannot be changed. In <i>Site and local</i> mode, you can not enter the FROM side NPC of any BRD, such as the virtual node. It is selected by the system. Up to 20 BRDs can be entered for one BBL.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Ckt Class (Continued)	■ <i>DMB</i> - Digital multipoint bridge. Applies to single-channel, two-way, multipoint circuits. These circuits are complex; for example, are composed of multiple cross-connections requiring multiple CIRCUIT PROVISIONING forms. A Ckt Class of <i>DMB</i> identifies this cross-connection as a unit in a DMB circuit. The two types of DMB multipoint circuits are the symmetric voice circuit and the polling data circuit. Provision the backbone first and the branches subsequently. Use a Mode of <i>LEG</i> to identify an EFT, but a Mode of <i>BBL</i> or <i>BRD</i> on the opposite side of each leg to identify its use as a backbone or branch. Be sure to read the operating examples for DMB. The examples also cover cascading, the building of still more complex circuits using DMB circuits as units. ■ <i>BKB</i> - A circuit is classified as a BKB class if it is being used as the backbone circuit in BCON provisioning. ■ <i>LEG</i> - A circuit is classified as a LEG class if it is being used as the tributary circuit in BCON provisioning. LEG circuits have the same parameters as the BKB circuit that it belongs to except for the following: Circuit ID Circuit status Circuit class Service date If a LEG circuit is classified as P_ACTIVE, its bandwidth will be smaller than the bandwidth of its BKB circuit.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Dir	This field appears only when the action is <i>ADDLEG</i> or when browsing a BCON BKB. This field defines which side of the backbone is the source broadcast side, FROM or TO. Mandatory. This field is mandatory when the first leg is added to a <i>FDX</i> circuit which will become the <i>BKB</i>.
NEW ID	New circuit ID. 1-41 characters. Appears only when the Action is <i>MODIFY</i>. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.
Bandwidth Type	Mandatory. Indicates how bandwidth is allocated in an NPC; valid entries are: ■ <i>C</i> Contiguous ■ <i>A</i> Alternating ■ <i>R</i> Random Alternating bandwidth is allocated on alternate channels. A maximum of 12 channels are available for NAS; 16 for CEPT. Contiguous bandwidth is allocated on consecutive channels. For example, starting with Channel 5, a Bandwidth of 3 allocates 5, 6, and 7 for contiguous; 5, 7, and 9 for alternating. Random permits allocation of channels between two NPCs in a random fashion; for example, channel 1 to channel 10, 2 to 5, 3 to 7, etc. The default is <i>A</i>. The value is set to the default for a Ckt Class of <i>DMB</i>. You can scroll through the FROM and TO fields for information on the channel series by pressing [NEXT]. If you do this and find the Bandwidth of the circuit is greater than 1, then the circuit is a high-rate circuit. For example, if the Bandwidth is 5, you can scroll from 1 through 5 and the channels for both the FROM and the TO fields scroll along in synchronization. This field disappears for clear DS1/E1 connections.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Hier	An NPC number in hierarchical format. (See <i>Chapter 8, NPC Provisioning</i> for an explanation of hierarchical and extended formats.) As shown in the diagrams under Ckt Class above, an NPC identifier for the NPC of the FROM channel and another for the NPC of the TO channel are required for one-way and two-way, two-point circuits. For the <i>ADDLEG</i> action, there is an identifier for the NPC of the leg channel. The identifier can be a number in hierarchical format, a number in extended format, or the NPC ID . The NPC must have been provisioned.
Ext	The FROM or TO NPC number in extended format. For the <i>ADDLEG</i> action, there is an identifier for the NPC of the leg channel. Automatically provided if Hier or NPC ID was entered.
NPC ID	The FROM or TO NPC ID . With the entry of a value in Hier , Ext , or NPC ID , the DND automatically performs a database query and displays the corresponding FROM or TO information in each field. For the <i>ADDLEG</i> action, there is an identifier for the NPC of the leg channel.
Ch	The FROM or TO channel number, 0-31 for CEPT or 1-24 for NAS. This field is displayed for contiguous or alternating circuits. Virtual channel numbers can range from 1 to 500; however, one is automatically selected by the system during provisioning of virtual multipoint circuits. For the <i>ADDLEG</i> action there is an identifier for the LEG channel.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Ch , Continued	For DMB circuits, the DMB-side Ch contains the conference number. It can range from <i>1</i> through <i>85</i> for DACS II. If the NPC identifying information (Hier, Ext, NPC ID) indicates that this is a clear DS1/E1 or DS3 configured as clear DS1 Type of NPC (see <i>Chapter 8, NPC Provisioning</i>), then the value, <i>DS1/E1</i>, appears in the FROM Ch field. The TC, IW, SC, Bandwidth, and Bandwidth Type fields disappear. If you attempt to enter a DS0 TO Ch; for example, to cross-connect clear DS1 to DS0, the previously mentioned fields reappear and you get a warning message: WARNING: Non-clear DS1 can not connect to Clear DS1 NPC.
Mode	Appears only when the Ckt Class is <i>DMB</i>. Specifies the use of the preceding Ch in a DMB multipoint circuit. ■ <i>SYM</i> - The associated channel is to be used as the DMB side of a leg in a symmetric voice circuit. ■ <i>BRD</i> - The associated channel is to be used as the DMB side of a broadcast, or branch, leg of a polling data circuit. ■ <i>BBL</i> - The associated channel is to be used as the DMB side of the backbone leg of a polling data circuit. ■ <i>LEG</i> - The associated channel is to be used as an EFT in any leg of the circuit. A DMB channel must be in a DMB NPC.
Bandwidth	Mandatory. Two numeric characters. Indicates the number of 64 Kbps channels constituting a high-rate circuit. For example, a 128 Kbps data channel consists of two 64 Kbps channels. For NAS NPCs, the available bandwidth is <i>1-24</i> channels; for CEPT NPCs, the available bandwidth is <i>1</i> through <i>32</i> channels.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Bandwidth , Continued	If not specified, Bandwidth defaults to 1 channel. It is set to 1 for a Ckt Class of <i>DMB</i>. The bandwidth of a random circuit must be greater than 1. This field disappears for clear DS1/E1 connections.
Options	Optional. 0 through 7 characters. Names options for activating or deactivating the circuit. When you press CHOICES to see the menu of Options, SELECT and UNSELECT function keys appear. The CHOICES menu for this field is a multiselect menu and operates differently from any other DND menu. Pressing Enter does not select the item, as is the case with all other DND menus. Instead, pressing SELECT selects the item. Use SELECT to choose as many options as are appropriate. Press Enter to place them on the screen.  NOTE: Only <i>RDLD</i>, <i>OOS</i>, and <i>INCL</i> are available for clear DS1/E1 circuits. The choices are as follows. If you type into the field, use only the letter. ■ <i>A</i> - NAM. No a-to-mu law conversion is to be applied to the circuit if it is CEPT only; for example, if it is not a gateway. ■ <i>B</i> - AIS. Alarm indication signal (all 1s, including the framing bit) is to be asserted on the downstream NPC when it is detected on the upstream NPC or when the upstream NPC asserts a CGA. Applies to NAS, FDX, high-rate circuits of bandwidth 24 only.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Options, Continued	■ C - RDLD. Red-lined. The circuit is to require specific authorization to disconnect; the INCL keyword must be set. For DMB circuits, if one leg of a conference is designated as <i>RDLD</i>, all legs must be. This condition applies only to DACS II. ■ D - OOS. Out of service. A disconnect is to be effected when the NPC at one or both ends of the circuit are <i>OOS</i>. ■ E - INCL. Included. Authorizes disconnects of <i>RDLD</i> circuits. ⇒ NOTE: This INCL keyword applies to a DACS II disconnect only. The INCL keyword (like the CUS keyword) from a DACS II connect is not supported. ■ F - DCC. Disconnect channel code. Causes the frame to assert the user-defined disconnect code (specified in the IW field) on disconnected channels. ■ G - TLA. Terminate and Leave Activated. If it is unselected, TLR, Terminate and Leave Released is to be in effect for this circuit. ⇒ NOTE: TLR is the normal state for traffic-carrying circuits. It means that the circuit is not terminated. TLA is a state generally used only for initial testing from end to end. If you make a circuit <i>ACTIVE</i> (or <i>ALTROUTED</i>) on the frame in the TLA state, the DND system automatically reverses this state to TLR in the DND database once the command has been sent. To change the termination state of the circuit on the frame back to TLR, send the command again. You would have to reset this field manually to TLA to override this automatic reversal.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Options, Continued	 NOTE: The unassigned IW , specified under NPC PROVISIONING for the NPC, is transmitted in the terminated direction(s).
NTR	No transmit. Appears only when Ckt Class is <i>DMB</i> . Specifies whether the leg is one-way or two-way. The NTR capability applies only to DACS II. <i>F</i> Transmission is shut off toward the FROM direction. <i>T</i> Transmission is shut off toward the TO direction. blanks Transmission is not shut off.
F_CH	Mandatory. These FROM channel fields appear when the bandwidth is Random (up to 32 fields each).
T_CH	Mandatory. These TO channel fields appear when the bandwidth is Random (up to 32 fields each).
L_CH	Mandatory. These LEG channel fields appear when a bandwidth is Random and the action is <i>ADDLEG</i> .

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description									
TC	Trunk conditioning specifies whether A/B-robbed-bit signaling is to be used to signal failure on the specified circuit. This information will only be used during failure of either an incoming signal or an NPC. When the NPC can no longer frame on the signal, it initiates trunk conditioning on all DS0 channels of the NPC. The signaling bits sent during failure are intended to disconnect active calls and hold the circuits busy (if appropriate) for the duration of the failure. DDC circuits require a TC of <i>TRSP</i> and an IW of <i>MUX</i>, which inserts <i>MUX</i> for the duration of the failure, and does not send the signaling bits. The value of TC also is set at <i>TRSP</i> for a Ckt Class of <i>DMB</i>. The TC field disappears for clear DS1/E1 connections; trunk conditioning is not supported for them. The trunk-conditioning code is: <i>0011</i>, <i>0011</i> Default. Indicates the circuit will use A/B signaling. The A/B bits sent upon detection of a failure condition are: <table><tr><td>Duration of failure</td><td>FROM Facility</td><td>TO Facility</td></tr><tr><td>First 2.5 sec</td><td><i>00</i></td><td><i>00</i></td></tr><tr><td>Remainder</td><td><i>11</i></td><td><i>11</i></td></tr></table> Logic 0 is an on-hook (idle). Logic 1 is an off-hook (busy). Circuits that use A/B signaling must always have an IW specified.	Duration of failure	FROM Facility	TO Facility	First 2.5 sec	<i>00</i>	<i>00</i>	Remainder	<i>11</i>	<i>11</i>
Duration of failure	FROM Facility	TO Facility								
First 2.5 sec	<i>00</i>	<i>00</i>								
Remainder	<i>11</i>	<i>11</i>								

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
TC, Continued	⇒ NOTE: The TC-value format shown is for FDX, full duplex. For HDX, replace the FROM side's number with hyphens. For an FDX version of X-05,X-63 the HDX result would be X---,X-63. ⇒ NOTE: It is important to remember that with HDX, you must put hyphens on one side. Virtual multipoint circuits also are HDX. 0101,0101 ----,0011 The previous value is used in connection with four-state signaling only. TRSP Transparent. Indicates the circuit will not use A/B signaling. X-FF,X-FF X-99,X-99 X---,X-FF The previous two values are used in connection with 16-state signaling only. 11111111,11111111 -----,11111111 If your preferred code is not in the list shown in the CHOICES menu, you can type it on the TC line. However, the syntax must be correct or the frame will not accept it. The DND does not correct or complete it for you. If you specify it incorrectly, the MML command line appears toward the screen bottom with = = (equation marks) surrounding the offending string. See the DACS I/O manual for other valid TC codes and for more information about trunk conditioning.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
IW	Insertion Word. Specifies the 8-bit alternate code to be inserted into the DS0 outgoing time slots of mapped channels of an NPC during <i>OOS</i> conditions, including carrier failure and removal of an NPC. The DDC is still sent toward both DS1 lines on unmapped channels. A yellow alarm is sent toward the failed DS1. The selections are: ■ <i>TRB</i> - Insert the standard trouble code, Hex E4, or 11100100. You can also enter <i>X-E4</i>. ■ <i>MUX</i> - Insert the MUX out-of-sync code, Hex 1A, or 00011010. You can also enter <i>1A</i>. When DS0 channels of DDS lines are cross-connected in the CCN, <i>TRSP</i> is used for TC and <i>MUX</i> for IW. The latter is inserted in the mapped DS0 channels of the outgoing DS1 line away from the failure. UMC is still inserted on unmapped channels. ■ <i>nn</i> - Insert an 8-bit pattern specified by Hex <i>nn</i>. Currently <i>7F</i>, <i>FF</i>, and <i>BF</i> are selections.
SC	Optional. Signaling conversion is used in CEPT and GATEWAY cross-connections in conjunction with CAS signaling. If the SC field is not specified, all four signaling bits will be cross-connected unchanged. The SC field is defined as: xxxx,yyyy where the first four bits, <i>xxxx</i>, represent the FROM side and the last four bits, <i>yyyy</i> represent the TO side. The comma separator is mandatory. All eight bits can be controlled independently. The valid values for these bits are: ■ <i>P</i> - Pass unchanged. ■ <i>V</i> - Pass inverted. ■ <i>0</i> - Set output to 0. ■ <i>1</i> - Set output to 1. -No value, the circuit is one-way.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
SC , Continued	All 8 bits are used only for FDX, full duplex. For HDX, replace the FROM side's number with hyphens. For example: <i>0011,0011</i> in FDX would become <i>----,0011</i> in HDX. If - is used, all four characters in the group must be -. If they are not, the frame may deny the command. This field disappears for clear DS1/E1 connections.
Framing	The value of the framing bits in the FW in cases where a CEPT channel 0 (time slot 0) is being connected to some other CEPT channel (non-TS0). abcdefg, hijklmn An arbitrary bit pattern of 0s and 1s, where abcdefg is the pseudo-FW in the TO-FROM direction and hijklmn is the pseudo-FW in the FROM-TO direction. Make sure that the pseudo-FW can in no case be the same as the FW or the NFW. NFW Use the NFW in channel 0 of all time frames.
Loc A	Optional. Up to 24 characters. The Station ID of the FROM side of the circuit being provisioned. This field is informational only.
Loc Z	Optional. Up to 24 characters. The Station ID of the TO side of the circuit being provisioned. This field is informational only.
Customer Name	Optional. Up to 12 characters. An informational field only. The name of the customer to be associated with the circuit of this screen. An automatically supplied value of <i>C2000</i> identifies circuits created by the DACScan-2000 Controller C-Module. An automatically supplied value of <i>ERP</i> identifies circuits created by the ERP feature.

Table 9-4. DND Forms: Field Descriptions for the CIRCUIT PROVISIONING Form (Continued)

Field	Description
Service Date	Three fields. Enter the date the circuit is first placed into service. The format is: dd mmm yy ■ dd - 1 or 2 digits that represent the day. Days 1 through 9 do not have to be entered as 01 through 09. ■ mmm - The first three letters of the month, as in <i>Jan, Feb, Mar, . . . Dec</i>. Upper- or lower-case or any combination is acceptable. ■ yy - The last two digits of the year. Valid entries are 90 through 99. For example, 01 Dec 98 The default date is today's date.
Ckt Priority	Optional. Circuit priority. Informational only, one or two alphanumeric characters. Indicates to the user the relative importance of the circuit for restoral actions. Regardless of its use, a circuit can not be assigned more than one CP. The default is 00.
Rmks	Optional. 0-72 characters. A user-defined informational field. A DND operator can enter informational comments.

DND Forms: CIRCUIT PROVISIONING Form (Continued)

Summary of Fields And Values Field values for CIRCUIT PROVISIONING are described in Table 9-5.

Table 9-5. DND Forms: Summary of CIRCUIT PROVISIONING Field Values

Name	Field Size	Values
Site Name*	24	Previously created under frame administration.
Action*	10	<i>ACTIVATE, MODIFY, PEND,DELETE, DEACTIVATE, ALTROUTE,NORMALIZE, BROWSE, COMBINE, ADDLEG, DELLEG, and CHGRPATH.</i>
Ckt Status	11	<i>NULL, PENDING, DEACTIVATED,ALTROUTED, PRE-EMPTED, ACTIVE, DEROUTED, and P_ACTIVE.</i>
Ckt ID*	41	All printable characters except *, ?, \, [,], ^, ", %, .
BBL ID	41	Previously activated.
NEW ID	41	All printable characters except *, ?, \, [,], ^, ", %, .
LEG Ckt ID	41	All printable characters except *, ?, \, [,], ^, ", %, .
Ckt Class †	3	<i>FDX, HDX, BBL, BRD, DMB, BKB, and LEG.</i>
Dir	1	<i>F, T</i>
Hier	5	<i>xyzz, xx is 01-16, y is 1-8, zz is 01-40.</i>
Ext	4	1 - x, depending on the frame type and hardware configuration.
NPC ID*	41	All printable characters except *, ?, \, [,], ^, ", %, .
Ch†	3	<i>00-24 NAS, 00-31 CEPT, 1-500 virtual, 1-85 DMB with DACS II.</i>
Mode†	3	<i>SYM, BRD, BBL, and LEG</i>
Bandwidth†	2	<i>1-24 NAS, 1-31 CEPT.</i>
Bandwidth Type†	1	<i>A, C, or R</i>
Options**	7	<i>A-G. (applies only to A-C).</i>
NTR**	1	<i>F,T</i>

Table 9-5. DND Forms: Summary of CIRCUIT PROVISIONING Field Values (Continued)

Name	Field Size	Values
F_CH	3 (up to 32 fields)	000-031
T_CH	3 (up to 32 fields)	000-031
L_CH	3 (up to 32 fields)	000-031
TC†	17	0011, 0011 0101, 0101 ----, 0011 TRSP X-FF, X-FF X-99, X-99 X---, X-FF 11111111, 11111111 -----, 11111111
IW**	3	TRB, MUX, 7F, FF, BF.
SC**	9	xxxx,yyyy where x, y = [P,V, 0,1,-].
Framing	15	abcdefg,hijklmn where a letter is 0 or 1. Alternatively, <i>NFW</i> .
Loc A	24	All printable characters except *, ?, \, [,], ^, ", %, .
Loc Z	24	All printable characters except *, ?, \, [,], ^, ", %, .
Customer Name	12	All printable characters except *, ?, \, [,], ^, ", %, .
Service Date	7	dd mmm yy
Ckt Priority	2	a-z, A-Z, 0-9
Rmks	72	All printable characters except (pipe).

* Mandatory field

** Traffic-affecting field

† Both Mandatory and Traffic-affecting fields

Circuit Provisioning ERP

Description

Echoed response processing (ERP) is an autonomous circuit provisioning feature; it is not under menu control. An echoed response is a message that is sent from a frame to the DND when the DND does not expect a response; for example, when a change in frame circuit provisioning has been entered through the frame console or by some other means not initiated on the DND. Such provisioning means that the DACS and DND databases no longer correspond.

The DND automatically activates or deletes one-way, two-way, virtual multipoint, DMB multipoint, or BCON circuits. It searches for the NPCs and channels referenced in the message. If it does not find them in the DND database, it logs the message, but takes no action. If it finds the terminations, but no circuit is active, it activates a circuit.

All actions taken by ERP are logged and the log can be retrieved as a report. For more information, refer to the *Chapter 15, Report Operations*.

Circuit Activation

If the DND must activate a circuit that is not in the DND database at all, it automatically assigns a **Circuit ID** of the following format:

**ERP fromnpc-fromchan tonpc-tochan BW/bw
class**

where:

fromnpc	is the FROM NPC number in hierarchical or extended format, depending on how the frame was provisioned.
fromchan	is the FROM channel number.
tonpc	is the TO NPC number in hierarchical or extended format.
tochan	is the TO channel number.
bw	is the bandwidth, which is either 1 or the number of contiguous channels of a high-rate circuit.
class	is the circuit class

Circuit Provisioning ERP (Continued)

Circuit Deletion If an ERP message indicating a disconnect has occurred, DND will delete the circuit using the same FROM point and TO point. If an ERP circuit or a SYN circuit must be deactivated, it is deleted. Otherwise, a circuit taken out of service is placed in *DEACTIVATED Ckt Status*. This can be controlled by the SYNC_DEACTIVATE_CKTS environment variable.

BCON Activation For BCON ERP messages which result in the addition or modification of LEGs to an existing BCON circuit, the standard LEG circuit naming is used. However, for new BCON circuits that have been created via ERP, the DND assigns a **Circuit ID** of the following format:

BRP fromnpc-fromchan tonpc-tochan **BW**

High Rate Circuits The DACS does not recognize high-rate circuits with an alternating or random type of bandwidth. If the DND receives a deactivation message for a circuit with such a bandwidth, it deletes all the circuits of the bandwidth and reactivates the ones not specified in the message.

Circuit Provisioning ERP (Continued)

ERP Messages

The DND is designed to respond to the following types of DACS output messages:

Table 9-6. ERP Messages

ERP Message Number	Message Description
0.11001	connection of two-way or a range of cross-connect circuits
0.11011	connection of two-way clear DS1/E1 circuits
0.11021	connection of two-way multipoint circuits
0.11101	connection of one-way or a range of cross-connect circuits
0.11121	connection of one-way multipoint or a range of cross-connect circuits
0.11131	connection of one-way clear DS1/E1 circuits
0.13001	addition of up to eight legs for BCON circuits
0.13002	addition of one leg for a BCON circuit
0.13011	addition of up to eight clear legs for BCON circuits
0.13021	addition of one clear leg for a BCON circuit
0.15001	disconnection of a two-way or a range of cross-connect circuits
0.15002	disconnection of two-way or a range of cross-connect circuits
0.15011	disconnection of two-way clear DS1/E1 circuits
0.15101	disconnection of one-way circuits
0.15111	disconnection of one-way clear DS1/E1 circuits
0.15102	disconnection of one-way multipoint or a range of cross-connect circuits
0.15201	disconnection of one leg for a BCON circuit

(Continued on next page)

Circuit Provisioning ERP (Continued)

ERP Messages, Continued

Table 9-6. ERP Messages, Continued

ERP Message Number	Message Description
0.15211	disconnection of up to eight legs for a BCON circuit
0.15221	disconnection of up to eight clear legs for a BCON circuit
0.15231	disconnection of one clear leg for a BCON circuit
0.18001	change the return path for up to eight BCON circuits
0.18011	change the return path for up to eight clear circuits

ERP Control

You can partially control the DND response to a message of this type. On the DACS PROVISIONING form, if the **ERP Control** option is selected, the DND processes echoed response messages only if all point terminations are already in the DND database. The database is updated and event messages are published. If any terminations are missing, the message is not processed and no action of any kind is taken.

If, on the other hand, **ERP Control** option is unselected, the DND responds fully to every message of this type.

Circuit Provisioning ERP (Continued)

DND ERP Response

As with any other DND **Action**, an action generated in ERP can succeed or fail. The result of the attempt is reported in the **Status Summary** field on the DND Workspace window, in the following format:

database/result:action explanation

where:

database Is the **Site Name** field value for this frame.

result Is one of these values:

SUCCESS The action succeeded.
FAILURE The action failed.

action Is a terse English description of the attempted action.

explanation Is the **Circuit ID** field value or an error message.

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Background

Introduction

A Multiplexer-Multiplexer Interface Unit Functional Group (MMFG) in a DS3 can consist of one Multiplexer (MXR) and one Multiplexer interface Unit (MIU). The (H)DS3U is supported on DACS II network elements only.

**NOTE:**

The Hybrid DS3 Unit does not currently support an MIU.

The MXR can be created, restored, modified, removed or deleted with the MMFG Provisioning form. If an MIU is present on the MMFG, it can be created, restored, modified, removed or deleted with the MXR, or separately, using the **Modify** action.

**NOTE:**

MMFG Provisioning can be performed only from the DND GUI. The MMFG Provisioning Form can be retrieved from the Provisioning Menu or from an MMFG slot on an Equipment View.

Objectives

This chapter provides background information to help you perform the following:

1. Create MMFGs
 2. Restore an MMFG
 3. Modify an MMFG
 4. Remove an MMFG
 5. Delete an MMFG.
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Creating an MMFG	GT 10.1G
■ Modifying an MMFG	GT 10.2G
■ Restoring an MMFG on a DACS	GT 10.3G
■ Removing an MMFG from a DACS	GT 10.4G
■ Deleting an MMFG from a DACS	GT 10.5G
-

Related information

For related information see:

- *DACS II and DACS II ISX Operation and Maintenance Manual*
 - *DACS II Network Director Installation Manual.*
-

General Information

Major Actions

The major MMFG provisioning actions are *CREATE*, *RESTORE*, *REMOVE*, and *DELETE*. These actions are based on the DACS concepts of “create equipment,” “place in service,” “remove from service,” and “disconnect equipment.”

MXR Type

The MXR type is designated by **mnxyz**, where:

- **mn** refers to the MMFG Type
 - **xyz** refers to the MMFG Parameters.
-

MXR Types

An MXR can be one of the following types:

- MX100 - KCR-1 circuit pack with M13 framing
 - MX200 - C-bit parity framing
 - EX100 - M13 framing
 - EX200 - C-bit parity framing
 - HX110 - KCR-8, Hybrid DS3, M13 Framing, ANSI X-bit (HDS3U card only)
 - HX100 - KCR-8, Hybrid DS3, M13 framing, reverse X-bit (HDS3U card only).
-

MIUs

An EX type MXR on a DS3U card supports an MIU. An MIU can be created or deleted with the EXxyz MXR by specifying the MIU type on the MMFG Provisioning Form. Additionally, the MIU's equipage and service state can be managed separately with the MODIFY action on the MMFG Provisioning Form:

- If the MMFG is in service, the MIU can be created or restored by selecting MIU - IS.
 - If the MMFG is out of service, the MIU can be created (added to the MMFG) by selecting MIU - OOS.
-

DND Supported MMFG Addressing

MMFG Specifiers

There are two ways to specify an MMFG. The choices are:

- **Number** - The MMFG number in the format uu-n, where:
 - uu - the MMFG unit number (01-16)
 - n - MMFG number within the unit (1-6)
 - **ID** - The name used to identify the MMFG. This is defined when performing the *CREATE Action*.
-

Specifying New or Existing MMFGs

When specifying a new MMFG, you must:

- Know the number of the MMFG you are going to use
- Give the MMFG a name (**ID**).

When specifying a previously created MMFG, you must:

- Know either the MMFG name (**ID**) or number
 - Or, specify the MMFG identifier in the **MMFG:** field.
-

Protection MMFG

Description

The DND automatically **CREATES** a protection MMFG to reflect the protection MMFG that is always provisioned at the DACS. You can modify this MMFG as follows:

- And MIU can be added with the **MODIFY** Action.
No commands will be sent to the DACS when the protection MMFG is modified.
- The MMFG can be **REMOVED** or **RESTORED**.

MMFG ID

The protection MMFG is automatically assigned an **MMFG ID** in the following format:

nn**MMFG**mmm

where:

nn	The unit number (0-16).
mmm	Is a unique sequence number assigned to this MMFG record. The number is incremented with each new MMFG activated by this method.

The protection MMFG is also identified by the number:

uu-**p**

where:

uu	The unit number (0-16).
-

Performance Monitoring

Description

When an HXxyz type MXR is selected the MMFG Provisioning Form will reveal additional fields used to specify Performance Monitoring options.

Data Sets

Performance Monitoring thresholds for each parameter are defined in terms of data sets 0,1,2, and 3. Data set 0 is defined at the DACS by default. The other optional data sets must be provisioned directly at the DACS using the ED - OPT - T3 command.

**NOTE:**

If a data set is *not* defined in the DACS, it will reject requests for a data set value.

Line Performance Monitoring

Table 10-1. Line Performance Monitoring Range and Default Values

Parameter	Threshold Value Range	Default Threshold Value
Near End 15 Minute Counts		
Code Violations	0 - 29490750	402867
Errored Seconds	0 - 900	300
Severely Errored Seconds	0 - 900	30
Near End 24 Hour Counts		
Code Violations	0 - 1073700000	3867523
Errored Seconds	0 - 86400	4320
Severely Errored Seconds	0 - 86400	90

Performance Monitoring (Continued)

Path Performance Monitoring

Table 10-2. Path Performance Monitoring Range and Default Values

Parameter	Threshold Value Range	Default Threshold Value
Near End 15 Minute Counts		
Code Violations	0 - 3686175	402867
F and M Bit Violations	0 - 230175	18432
Errored Seconds	0 - 900	30
Severely Errored Seconds	0 - 900	30
Unavailable Seconds	0 - 900	0
Near End 24 Hour Counts		
Code Violations	0 - 1073700000	3867523
F and M Bit Violations	0 - 22096800	176947
Errored Seconds	0 - 86400	4320
Severely Errored Seconds	0 - 86400	90
Unavailable Seconds	0 - 86400	0
Far 15 Minute Counts		
Severely Errored Seconds	0 - 900	30
Far End 24 Hour Counts		
Severely Errored Seconds	0 - 86400	90

MMFG Provisioning ERP

Description

An echoed response is a message that is sent from a DACS to the DND when the DND does not expect a response; for example, when a change in MMFG Provisioning is entered through the DACS console, through a passthrough command to the DACS, or by some other means not initiated by a DND form. Such provisioning would cause the DACS and DND databases to differ if the DND did not respond to the echoed response message.

The DND, therefore, is designed to process the echoed messages from the DACS. For example, if it receives a message that the DACS has created an MMFG, DND creates an MMFG in the local database. Likewise, the DND also executes a *RESTORE*, *REMOVE*, *MODIFY*, or *DELETE* when specified by the message.

Notification of ERP Messages

When the DND processes an echoed response message, event messages are posted on the Status Line of the DND Forms User Interface.

In addition, details about the echoed response message are logged in the DND database. To retrieve these details, from the DND Forms Main Menu, select REPORT OPERATIONS, then select ECHOED RESPONSE PROCESSING.

MMFG Provisioning ERP (Continued)

MMFG ID ERP Assignment

If the DND must create an MMFG that is not in the DND database at all, it automatically assigns an **MMFG ID** in the following format:

nn**MMFG**mmm

where:

nn	Is the MMFG number as represented at the DACS.
mmm	Is a unique sequence number assigned to this MMFG record. The number is incremented with each new MMFG activated by this method.

The default values used by the *CREATE Action* are the same as those specified under "Field Descriptions." They are displayed on the screens.



CAUTION:

*You **SHOULD AVOID** creating **MMFG IDs** from the **MMFG PROVISIONING** form according to the **ERP** scheme.*

ERP Messages

With any other DND **Action**, an action generated in ERP can succeed or fail. The result of the attempt is reported in the Status Summary Window Line at the bottom top of the DND Main Window in the following format:

database/result:action explanation

where:

database	Is the Site Name field value for this frame.
result	Is one of these values: <i>SUCCESS</i> The action succeeded. <i>ERROR</i> The action failed.
action	Is a terse English description of the attempted action.
explanation	Is the MMFG ID field value or an error message.

More detailed information can be obtained with the Echoed Response Processing Report which can be run from the GUI and the DND Forms User Interface.

DND GUI: The MMFG Provisioning Form

MMFG Provisioning Form

This is an example of the MMFG PROVISIONING form. On this form, the MMFG to *CREATE* is identified as MMFG01 for MMFG 11-1.

Annotations for Figure 10-1:

- MXR number and ID → MMFG Number: 11-1
- MMFG Type → MMFG MXR Type: MX100 : KCR-1, M13 framing
- Select values for the DACS provisioning options → DACS Provisioning Options

Site Name: ODIE-CEF-07-PA-Gettysbur DACS CMM Number: 31511 Far End Site:

Action: CREATE Service State: UNEQ

MMFG Number: 11-1 MMFG ID: MMFG01

MMFG MXR Type: MX100 : KCR-1, M13 framing MIU Type: ☒ No MIU ☐ M1100

DACS Provisioning Options

BERM (bit error rate method): ☒ Bipolar violations (BPV) ☐ DS3 Parity Errors (PARITY)

BERT (bit error rate threshold): ☒ 10-3 ☐ 10-6

LBO (line buildout): ☒ OFF ☐ ON

Control Options

Reconcile Mode: ☒ DND and DACS ☐ DND only ☐ DACS only

Additional Action Restore MMFG: ☐

Back Continue... Restart Close

Unsigned Java Applet Window

Figure 10-1. DND GUI: MMFG Provisioning Form, Section 1: *CREATE* Action

DND GUI: The MMFG Provisioning Form (Continued)

Performance Monitoring Options for type HXxyz

The performance monitoring fields on Figure 10-2 are displayed only when an HX110 or HX100 type MXR is selected.

Click to **apply** the data set values only to the performance parameters that have been selected below.

MMFG PROVISIONING

Define PM threshold/alarm settings
data set: 0 - (Data Set 0) **Apply to Selected** **Select all Parameters**

Select data set here →

Select a particular PM Option here →

Click to apply the data set values to all the **Performance Parameters**

Line PM

Near End 15 Minute Counts

Coding Violations: ☐ 0
Errored Seconds: ☐ 0
Severely Errored Seconds: ☐ 0

Near End 24 Hour Counts

Coding Violations: ☐ 0
Errored Seconds: ☐ 0
Severely Errored Seconds: ☐ 0

Path PM

Near End 15 Minute Counts

Coding Violations: ☐ 0
F and M Bit Violations: ☐ 0
Errored Seconds: ☐ 0
Severely Errored Seconds: ☐ 0
Unavailable Seconds: ☐ 0

Near End 24 Hour Counts

Coding Violations: ☐ 0
F and M Bit Violations: ☐ 0
Errored Seconds: ☐ 0
Severely Errored Seconds: ☐ 0
Unavailable Seconds: ☐ 0

Far End 15 Minute Counts

Severely Errored Seconds: ☐ 0

Far End 24 Hour Counts

Severely Errored Seconds: ☐ 0

Control Options

Reconcile

Mode: ☒ DND and DACS ☐ DND only ☐ DACS only

Additional Action

Restore MMFG: ☐

Back **Continue** **Restart** **Close**

Unsigned Java Applet Window

Figure 10-2. DND GUI: MMFG Provisioning Form, Section 2: Performance Monitoring Options (HX Type)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions The field values for the MMFG PROVISIONING form are described in Table 10-3.

Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form

Field	Description
Site Name	(Combo box) Mandatory. Select the name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically.
DACS CMM Number	(Read-only field) The DACS command number that corresponds to the actions on the MMFG Provisioning Form of the DND GUI. See the DACS II or DACS II ISX <i>Command and Message Manual</i> .
Far End Site	(Read-only field) Displays the name of the DACS/End User which is at the far end of the intertie, as entered by INTERTIE PROVISIONING. If this MMFG is not assigned to an intertie, then this field is blank.
Service State	(Read-only field) The status of the MMFG. This field cannot be changed by the user except as the result of an Action . Possible values: ■ UEQD - Unequipped. The MMFG referenced by the MMFG ID is not currently recorded in the DND and/or DACS databases (equipped). To place it there, use the CREATE Action. ■ OOS - Out of service. The MMFG is currently equipped, but is not operable. To place it in service, use the RESTORE Action. To unequip it, use the DELETE Action. ■ IS - In service. The MMFG is equipped and operable (ready for NPC PROVISIONING). To remove it from service, use the REMOVE Action.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions,
Continued

Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)

Field	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Adds a new MMFG. ■ <i>RESTORE</i> - Places the specified MMFG in service. An MMFG must be in service before it can be used for NPC PROVISIONING. ■ <i>MODIFY</i> - Changes allowed combinations of fields for the specified MMFG. These combinations are stated under "Types of MMFGs" in this chapter. Constraints on possible new values of MMFG Type are also stated there. ⇒ NOTE: Only those fields whose specification on the form differs from the DND database cause changes to be sent to the DACS. In particular, if the value is correct in the DND but is not correct in the DACS, a <i>MODIFY</i>, even in <i>DACS Only</i> mode, will not correct the value in the DACS. ■ <i>REMOVE</i> - Removes the specified MMFG from service. ⚠ CAUTION: <i>Removing an MMFG with active circuits may result in transmission loss for those circuits.</i> ■ <i>DELETE</i> - Deletes the specified MMFG. An MMFG must be removed from service before it can be deleted.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions, Continued **Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)**

Field	Description
MMFG Number	(Text field). The MMFG number in the format <i>uu-n</i> , where: ■ <i>uu</i> - the MMFG unit number (01-16) ■ <i>n</i> - MMFG number within the unit (1-6)
MMFG ID	(Text field). The name used to identify the MMFG. This is defined when performing the CREATE Action .
MXR Type	(Combo box) The MXR Type: ■ MX100 - KCR-1 circuit pack with M13 framing ■ MX200 - KCR-1 circuit pack with C-bit parity framing ■ EX100 - KCR-5 circuit pack with M13 framing ■ EX200 - KCR-5 circuit pack with C-bit parity framing ■ HX110 - KCR-8 Hybrid circuit pack with M13 framing and ANSI interpretation of X-bit values ■ HX100 - KCR-8 Hybrid circuit pack with M13 framing and reverse ANSI interpretation of X-bit values Type HX100 and HX 110 set the X-bits (carried by the DS3 signal) in the transmit direction and interpret the value of the X-bits in the receive direction for the purpose of obtaining a Remote Alarm Indication (RAI) for the DS3 signal. Type HX110 interprets X-bit values (there are two X-bits) or "1" as normal, while values of "0" indicate an RAI. Type XH100 interprets the X-bit values of "0" as normal and X-bit values of "1" as RAI.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions, Continued Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)

Field	Description
MIU Type	(Radio Buttons) Select MIU type where: ■ <i>No MIU</i> ■ <i>MIU100</i> - Applies the current action to the MIU as well as the MXR. The MIU applies only to the EXxyz type of MXR. The DND will deny invalid combinations of MXR and MIU.
MIU State	(Radio Buttons) If the Action is MODIFY, select an MIU state where: ■ <i>No MIU</i> - if an MIU exists it will automatically be deleted. ■ <i>MIU IS</i> - Creates the MIU if it is not already created, and puts the MIU in service if it is not already in service. ■ <i>MIU OOS</i> - Creates the MIU if it is not already created, and puts the MIU out-of-service if it is not already out-of-service. If the Action is not MODIFY, this field displays the current MIU state.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions, Continued **Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)**

Field	Description
DACS Provisioning Options	(Radio Buttons) Select values for the following options: ■ BERM - bit error rate calculation method: — Bipolar violations (the default) — DS3 Parity Errors ■ BERT - bit error rate threshold for declaring High BER Condition. — 10-3 (the default) — 10-6 ■ LBO - Line Buildout specification. Set as follows: — 734A Cabling Set LBO <i>off</i> for 225 to 450 feet and Set LBO <i>on</i> for 0 to 225 feet — KS-19224, L2 Cabling Set LBO <i>off</i> for 75 to 150 feet and Set LBO <i>on</i> for 0 to 75 feet ⇒ NOTE: The LBO setting of an in-service, traffic carrying MMFG can be changed.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions,
Continued

Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)

Field	Description
Data Set	(Combo Box) Data sets 0,1,2, and 3. Data set 0 is defined at the DACS by default. See <i>Data Sets</i> earlier in this chapter. ■ Click on Select all Parameters to apply the values in that data set to all of the performance parameters. ■ Check each performance parameter that you want to take its value from that data set and click on Apply to Selected.
Apply to Selected	(Button) Applies the settings from the selected dataset to the performance parameters that have been checked.
Select all Parameters	(Button) Selects all of the performance parameters, then press Apply to Selected to apply the selected data set.
Performance Parameters	(Checkboxes) The performance parameters that can be defined in terms of one of the data sets. Check the checkbox, then press Apply to Selected to apply the selected data set to that performance parameter. See <i>Performance Monitoring</i> earlier in this chapter.
Reconcile Mode	(Radio buttons) Select the database where the current Action will take place. The choices are: ■ <i>DND and DACS</i> - Perform the Action to both the DND and DACS databases (default) ■ <i>DND only</i> - Perform the Action to the DND database only ■ <i>DACS only</i> - Perform the Action to the DACS database only
INCL	(Checkbox) Restores or Removes all NPCs associated with the MMFG.

(Continued on next page)

DND GUI: The MMFG Provisioning Form (Continued)

Field Descriptions,
Continued

Table 10-3. DND GUI: Field Descriptions for the MMFG PROVISIONING Form (Continued)

Field	Description
Delete MMFG	(Checkbox) Appears for the <i>REMOVE Action</i> only. When selected, the DND will <i>REMOVE</i> and <i>DELETE</i> an MMFG using the same form.
Restore MMFG	(Checkbox) Appears for the <i>CREATE Action</i> only. When selected, the DND will <i>CREATE</i> and <i>RESTORE</i> an MMFG using the same form.

Termination Naming and Connections

11

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Background

Introduction

A termination is the name used to designate one end of an SNMP circuit connection, called Termination Circuit Mappings. These terminations and circuit maps are recognized by the DND database only. To physically provision an SNMP termination or circuit map, a user must telnet to the SNMP box and issue the appropriate provisioning commands.

Termination and termination circuit map provisioning is performed at the DND GUI.

Objectives

This chapter provides background information to help you perform the following:

1. Create a Termination
 2. Modify a Termination
 3. Delete a Termination
 4. Create a Termination Circuit Map
 5. Modify a Termination Circuit Map
 6. Delete a Termination Circuit Map
 7. Trace a Termination Circuit Map thru a Network Circuit.
-

Related tasks

For related tasks, see the following DND GUI General Tasks in Volume II:

■ Creating a Termination	GT 11.1G
■ Modifying a Termination	GT 11.2G
■ Deleting a Termination	GT 11.3G
■ Creating a Termination Circuit Map	GT 11.4G
■ Modifying a Termination Circuit Map	GT 11.5G
■ Deleting a Termination Circuit Map	GT 11.6G
■ Performing a Trace on a Termination Circuit Map	GT 11.7G
-

Background (Continued)

Related information

For related information see:

- *Chapter 8, NPC Provisioning*
 - *Chapter 9, Circuit Provisioning.*
-

The Termination Naming Form

Termination Naming Form

Figure 11-1 shows an example of a TERMINATION NAMING form.

The screenshot shows the "TERMINATION NAME" window in the DND GUI. The "Action" is set to "CREATE". The "Element Type" has checkboxes for "DACS II AX" (checked), "AAC/IMACS", and "Other". The "Site Name" is "HOBBS-AX11-153-NV-Vegas". The "TERMINATION" section includes a "Termination Name" field with "Golden Nugget", a "Port" label, a "Slot Type" checkbox for "P" (checked), "Slot Number" "01", and "Port Number" "002". The "DSO Bandwidth" is "3", "Channels" are "01,02,03", and "Remarks" are "Termination designation for the Golden Nugget Casino". Annotations with arrows point to the "Port", "Slot Number", and "Port Number" fields, stating "Termination Information always appears in read-only mode". Another arrow points to the "Remarks" field, stating "Enter Termination Circuit Map Information". At the bottom are buttons for "Back", "Execute", "Restart", and "Close", and a link to "Continue with next section of the form". The window title bar says "Unsigned Java Applet Window".

Figure 11-1. TERMINATION NAMING Form, CREATE Action

The Termination Naming Form (Continued)

Termination Information

A termination is an endpoint on an SNMP circuit mapping containing an assigned bandwidth of DS0 channels. For DS1 and DS3 port cards, the termination consists of a port specification and one or more channels associated with it. However, there are no channels associated with a termination when using DS0 cards.

Any particular channel on a port can only be assigned to one termination.

Termination Slot Types

The slot types for terminations are particular SNMP elements are identified in table.

Element Type	Slot Types
DACS II AX	P
AAC/IMACS	P, U, W
Other	Any alphabetical capital letter

Termination Speeds

All terminations are some bandwidth of DS0 speed. If the port card is specified as a DS0 card, then you do not specify termination channels.

The Termination Naming Form (Continued)

Creating Terminations

The following table specifies the termination information needed for the type of port card in use.

IF you have a...	THEN, you need to specify the..
DS0 card	Slot Type, Slot Number, Port Number, and the Bandwidth
DS1 card	Slot Type, Slot Number, Port Number, Bandwidth, and the Port Channels
DS3 card	Slot Type, Slot Number, Port Number (which is the DS1 number, 1 - 28, within the DS3), Bandwidth, and the Port Channels

Modifying Terminations

The information fields listed below are the only fields which can be modified:

- **DS0 Bandwidth** (ONLY if not used in a termination circuit map)
- **Channels**
- **Remarks.**

To change the termination name or port designation, delete the existing termination, and re-create it with new termination name and port information.

Deleting Terminations

A termination cannot be deleted if it has been designated as an endpoint in a termination circuit map.

The Termination Naming Form (Continued)

Field Descriptions The field values for the TERMINATION NAME form are described in [Table 11-1](#).

Table 11-1. Field Descriptions for the TERMINATION NAME Form

Field	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Adds a new termination ■ <i>DELETE</i> - Deletes the specified termination ■ <i>MODIFY</i> - Changes allowed combinations of fields for the specified termination.
Element Type	(Radio buttons) The type of SNMP site. The choices are: ■ DACS II AX ■ AAC/IMACS ■ Other.
Site Name	(Combo box) Mandatory. Select the name of the SNMP site where the requested Action will take place. Clicking this field will display a list of available SNMPs of the type specified in the Element Type field. By default, the list appears alphabetically.
Termination Name	(Text field) Mandatory. 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. Specify a name for the termination.
Slot Type	(Radio buttons) Mandatory. Select the type of port to add to/delete from/modify on the termination. Some typical choices are: ■ <i>P</i> - Server card (ISDN, ADPCM, IMUX, or FRS cards) used for providing internal services. ■ <i>U</i> - User card (voice, data, and alarm cards) ■ <i>W</i> - Wan card. For DACS II AX, field is read-only and can only be <i>P</i>. For the AAC/IMACS, the choices are <i>P</i>, <i>U</i>, or <i>W</i>. For "Other" type SNMP, the choices are any letter from A through Z.

**Table 11-1. Field Descriptions for the TERMINATION NAME Form
(Continued)**

Field	Description
Slot Number	(Text field) Mandatory. Enter the number of the slot for the SLOT TYPE previously selected. 1 or 2 digits. ■ DACS II AX slots: 01 through 11 ■ AAC/IMACS slots: P and W: 01 through 04; U: 01 through 08 ■ "Other" type slots: 01 through 99.
Port Number	(Text field) Mandatory. Up to 3 digits. Enter the number of the port for the SLOT NUMBER previously selected. ■ DACS II AX ports: P, U, or W: 01 through 08 ■ AAC/IMACS ports: P: 01 through 28 U: 01 through 08; W: 01 through 08 ■ "Other" type ports: 001 through 999.
DS0 Bandwidth	(Combo box) Select the bandwidth of the termination. Range is from 1 to 31.
Channels	(Text field) Enter the channel(s) for the termination.
Remarks	(Text field) Free-form field to enter information about the termination.

The Termination Circuit Mapping Form

Termination Circuit Mapping Form

Figure 11-2 shows an example of a TERMINATION CIRCUIT MAPPING form.

The screenshot shows a Java applet window titled "TERMINATION CIRCUIT MAPPING". The interface includes a "dnd" logo and an "Alarms" button. The "Action" dropdown is set to "CREATE". The "Element Type" section has three radio buttons: "DACS II AX" (selected), "AAC/IMACS", and "Other". The "Site Name" dropdown is set to "HOBBS-AX11-153-NV-Vegas".

The "CIRCUIT" section contains a "Circuit ID" field with the value "GN-casino1". Below this are two "TERMINATION" sections:

- TERMINATION 1:** "Termination Name" is "Golden Nugget". A "Port" section shows "Slot Type" as "P", "Slot Number" as "01", and "Port Number" as "002". The "Channels" field contains "01,02,03".
- TERMINATION 2:** "Termination Name" is "Golden Nugget 2". A "Port" section shows "Slot Type" as "P", "Slot Number" as "01", and "Port Number" as "001". The "Channels" field contains "04,05,06".

The "DS0 Bandwidth" field is set to "03". The "Remarks" field contains the text "Termination circuit mapping in the Golden Nugget Casino".

At the bottom, there are four buttons: "Back", "Execute", "Restart", and "Close". The status bar at the bottom left indicates "Unsigned Java Applet Window".

Figure 11-2. TERMINATION CIRCUIT MAPING Form, CREATE Action

The Termination Circuit Mapping Form (Continued)

**Termination
Circuit Map
Information**

Termination circuit maps are SNMP circuit connections, which are associated with a particular SNMP element in the DND network. These circuit maps define paths through SNMP elements for creating circuit traces on a DND network circuit.

**Creating
Termination
Circuit Maps**

Terminations must be created on the SNMP prior to creating a circuit map. The terminations on each side of the circuit map must have the same bandwidth.

**Modifying
Termination
Circuit Maps**

The **Remarks** field is the only field which can be modified on the TERMINATION CIRCUIT MAPPING form.

**Tracing
Termination
Circuit Maps**

Circuit map tracing to an SNMP element will fail if:

- There is no termination established at the far end
 - The termination at the far end is not in a circuit map.
-

The Termination Circuit Mapping Form (Continued)

Field Description The field values for the TERMINATION CIRCUIT MAPPING form are described in Table 11-2.

Table 11-2. Field Descriptions for the TERMINATION CIRCUIT MAPPING Form

Field	Description
Action	(Combo box) Mandatory. Valid choices are: ■ <i>CREATE</i> - Adds a new termination circuit map ■ <i>DELETE</i> - Deletes the specified termination circuit map ■ <i>MODIFY</i> - Changes allowed combinations of fields for the specified termination circuit map ■ <i>TRACE</i> - Allows you to trace a network circuit by displaying a circuit trace map and table.
Element Type	(Radio buttons) The type of SNMP site. The choices are: ■ <i>DACS II AX</i> ■ <i>AAC/IMACS</i> ■ <i>Other.</i>
Site Name	(Combo box) Mandatory. Select the name of the SNMP site where the requested Action will take place. Clicking this field will display a list of available SNMPs of the type specified in the Element Type field. By default, the list appears alphabetically.
Circuit ID	(Text field) Mandatory. 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. Specify a name for the termination circuit map.

Table 11-2. Field Descriptions for the TERMINATION CIRCUIT MAPPING Form (Continued)

Field	Description
Termination Name (for TERMINATION 1 and TERMINATION 2)	(Text field) Mandatory. 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. The name of a termination specified using the TERMINATION NAME form. Two terminations must be identified to establish a termination circuit map.
Remarks	(Text field) Optional. 0-72 characters. Free-form field to enter any information about the termination circuit map.
Port/Connected To	(Read-only fields) Appears only if at least ONE port in the circuit has been added to an intertie. ■ For DACS far end sites - Contains the far end NPC number ■ For SNMP far end sites - Contains the far end port number (Slot Type/Slot Number/Port Number).

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Background

Introduction

DND supports Digital Data Networks (DDNs) at the 2.4, 4.8, 9.6, and 19.2 kbit/s rates. DND supports these digital data rates by being able to cross-connect individual DDN circuits and connect multiplexed DDN circuits and individual DDN circuits.

The subrate application requires the use of the Digital Signal Processing Platform (DSPP), which consists of:

- The Digital Signal Processing (DSP) TG193 circuit pack.
- The DSPP software. The software that runs on the DSPP is referred to as application software because DACS II ISX treats it as a separate application.

**NOTE:**

The subrate application described in this chapter applies *only* to DACS II ISX Release 2.0 and higher.

Subrate Provisioning is accessed through the DND Forms Interface only.

Objectives

This chapter provides background information to help you perform the following:

1. Create a subrate NPC
 2. Activate, deactivate, delete, and modify a DS0 channel
 3. Activate, deactivate, delete, and modify a subrate cross-connection.
-

Background (Continued)

Related tasks

For related tasks, see the following DND Forms General Tasks in Volume II:

■ Provisioning Subrate Circuits	GT 12.1U
Creating/Activating an NPC as a Subrate Type	SE 12.1.1U
Activating a DS0 Channel	SE 12.1.2U
Provisioning a Subrate Cross Connection	SE 12.1.3U
■ Browsing DS0 Channel Information	GT 12.2U
■ Browsing Subrate Cross Connects	GT 12.3U
-

Related information

For related information, see:

- *DACS II Network Director Software Release Description*
 - *DACS II and DACS II ISX Operation and Maintenance Manuals.*
-

Supported Circuits

Subrate Circuits

The following subrate circuits are supported by DND:

- **X.50**—A 64 kbit/s circuit that carries a number of multiplexed circuits of lower data rates using the International Telecommunications Union (ITU) X.50 recommendation.
 - **X.57**—DACS II ISX supports these data rates by cross-connecting individual DNN circuits and connecting individual or multiplexed (Digital Data Network) DNN circuits.
-

Cross-Connection Architecture

Cross-Connection to DSPP Circuit Pack

X.50 and X.57 circuits are cross-connected to a DSPP circuit pack (TG193). The DSPP circuit pack multiplexes and demultiplexes customer circuits that are being carried on the X.50 and X.57 circuits. Figure 12-1 illustrates this cross-connection architecture.

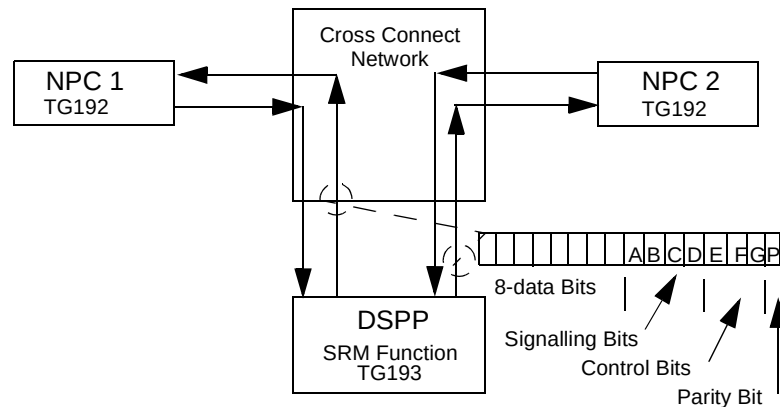


Figure 12-1. Cross Connection Architecture

How Information is Transferred

The information is cross-connected in its original form, at 16 bits at a time. A set of 16 bits is sent through the cross-connect network every 125 microseconds per each cross-connected channel. The lower eight bits of the 16 bit set consists of customer circuit data and overhead bits. These eight bits consists of four signalling bits, three control bits, and one parity bit.



NOTE:

For X.57 circuits, the 8-bit envelopes line up with the lower 8 bit bits, as shown in this figure. However, the data in the form of 8-bit envelopes may not line up with the lower 8 bits for other circuits.

Architectural Elements

DSPP Circuit Pack The DSPP circuit pack (TG193) contains 64 channels (time slots), which can be cross-connected to another channel on another NPC in the system. This is illustrated by a dashed line in Figure 12-2. In addition, the DSPP circuit packs can have access to an Inter-NPC bus that connects the DSPP circuit packs among themselves.

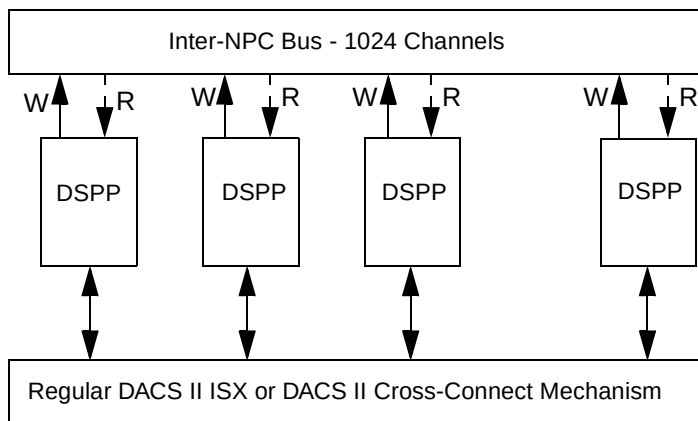
With the exception of growing and restoring the DSPP circuit pack, DND ignores all commands that pertain to the DSPP circuit pack.

Inter-NPC Bus

The Inter-NPC bus allows substrate cross-connections between more than 64 X.50 circuits. If the Inter-NPC bus is not used, the number of circuits that can exchange substrate circuits between themselves is 64.

When connected to the Inter-NPC bus, each DSPP circuit pack can:

- Write data for up to 64 channels. This can be modified or unmodified data.
- Read up to 1024 channels (16 DSPP circuit packs) from the Inter-NPC bus. Each DSPP circuit pack can read its own channels as well as all other channels from DSPP circuit packs connected to the Inter-NPC bus, if these channels are written to the Inter-NPC bus by the individual DSPP circuit pack.



W = write R = read -- = cross-connect to

Figure 12-2. Inter-NPC Bus Architecture for DSPP Circuit Pack

Architectural Elements (Continued)

Limits

The limit of 64 channels without the Inter-NPC bus and a limit of 1024 channels with the Inter-NPC bus are theoretical limits. The actual limits depend on the capacity of the DSP1611 chip on the DSPP circuit pack.

X.50 Customer Circuit Cross-Connections

Requirements

To connect X.50 customer circuits to each other, a total of three cross connects are required. Two of these cross-connects are illustrated in Figure 12-3, which illustrates how two X.50 circuits are connected from their NPCs to the DSPP circuit packs. These two cross-connects are established by the DACS II ISX cross-connect network. The cross-connection of customer circuits takes place in the DSPP circuit packs along with demultiplexing/multiplexing.

X.50 Schematic

Figure 12-3 shows a schematic view of how these customer circuit cross-connections are made. In Figure 12-3, the left side the column of 8-bit envelopes represents an incoming X.50 data stream in memory and on the right side of the column of 8-bit envelopes in memory go out to NPC 2.

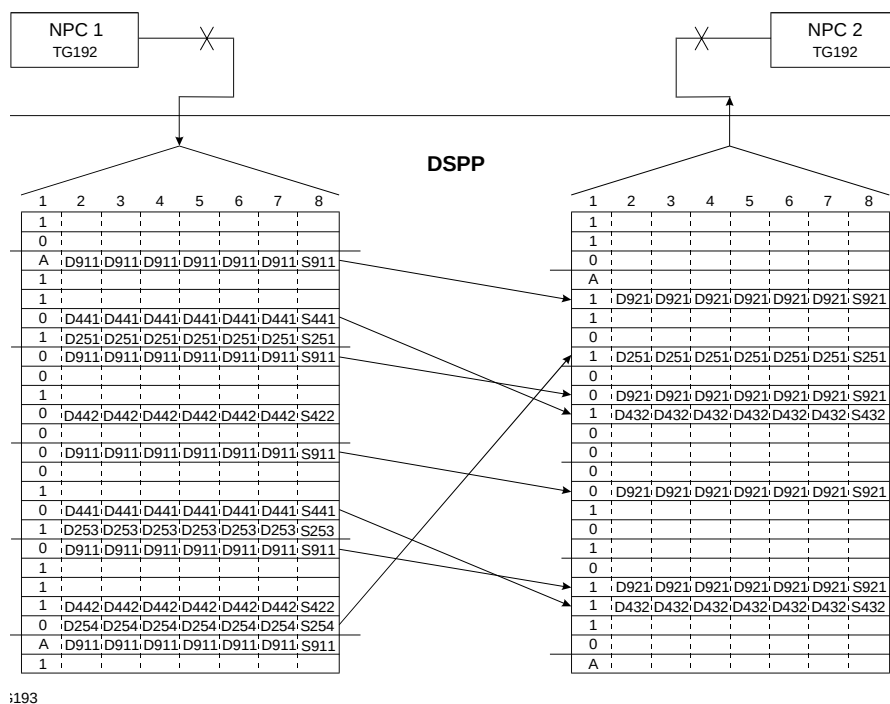


Figure 12-3. X.50 Customer Circuit Cross-Connection Diagram

X.50 Customer Circuit Cross-Connections (Continued)

X.50 Schematic Description

Only one direction of the cross-connection is shown for clarity. Both columns have the X.50 framing bit pattern in the first bit position, which is column one.

On the incoming side, this framing pattern needs to be checked to maintain subrate framing, on the outgoing side this framing pattern is set by the program. Figure 12-3 shows the "A" (alarm) bit in the beginning of each framing pattern. The long lines that form the column show a single frame, and the shorter lines divide the 20 envelope frame into four sets of five envelopes.

Individual 9.6 kbit/s circuits occupy one of the five envelope positions in a set of five. For example, if a circuit is designated as 911* in Figure 12-3 occupies the first envelope position of each set of five.

There are six data bits "D" and one status bit "S", which is the eighth bit position. In addition, the 9.6 kbit/s circuit envelopes occupy the data stream in every fifth envelope position.

The customer circuit 411 is a 4.8 kbit/s circuit that occupies the fourth envelope (phase) position and it is the first of a possible set of two 4.8 kbit/s circuits that can be in that envelope position. The envelopes from circuit 411 repeat every 10 envelopes because it is a 4.8 kbit/s circuit. Another 4.8 kbit/s circuit is called 442 and is located in the fourth envelope (phase) position, but it occupies the second position. Note that from Figure 12-3, circuit 442 occupies the second and fourth set of five envelopes in the frame, while circuit 411 occupies the first and third set of five envelopes in the frame.

Finally there are three 2.4 kbit/s circuits in the incoming frame, which are 251, 253, and 254. All three circuits occupy the fifth envelope (phase) position in the frame. Circuit 251 is the first set of five envelopes, circuit 253 is the third set of five envelopes, and circuit 254 is the fourth set of five envelopes. Note that 2.4 kbit/s circuits occupy every 20th envelope position, which is one envelope per frame.

X.50 Customer Circuit Cross-Connections (Continued)

X.50 Schematic Description (Continued)

Using Figure 12-3 as an example, three customer circuit cross-connects are established between the incoming and outgoing frame. Circuit 911 is cross-connected to circuit 921 in the outgoing frame. This means there are four envelopes per frame that are transferred from the incoming stream to the outgoing stream. In addition, there are only seven bits of the envelope that are transferred since the framing bit is not transferred. Circuit 441 is cross connected to circuit 432 in the outgoing frame, and circuit 254 (2.4 kbit/s) is cross connected to circuit 251 in the outgoing frame.

* The 9 in the 911 designation refers to a 9.6 kbit/s circuit. The first 1 in 911 refers to the first envelope position, which is also called phase 1. The second 1 is the position phase 1; since 9.6 kbit/s circuits occupy all positions in their phase, this number is always 1 for 9.6 kbit/s circuits.

X.50 to X.57 Customer Circuit Cross-Connection

X.50 to X.57 Schematic

Figure 12-4 shows the customer circuit cross-connections between an X.50 and X.57 circuit.

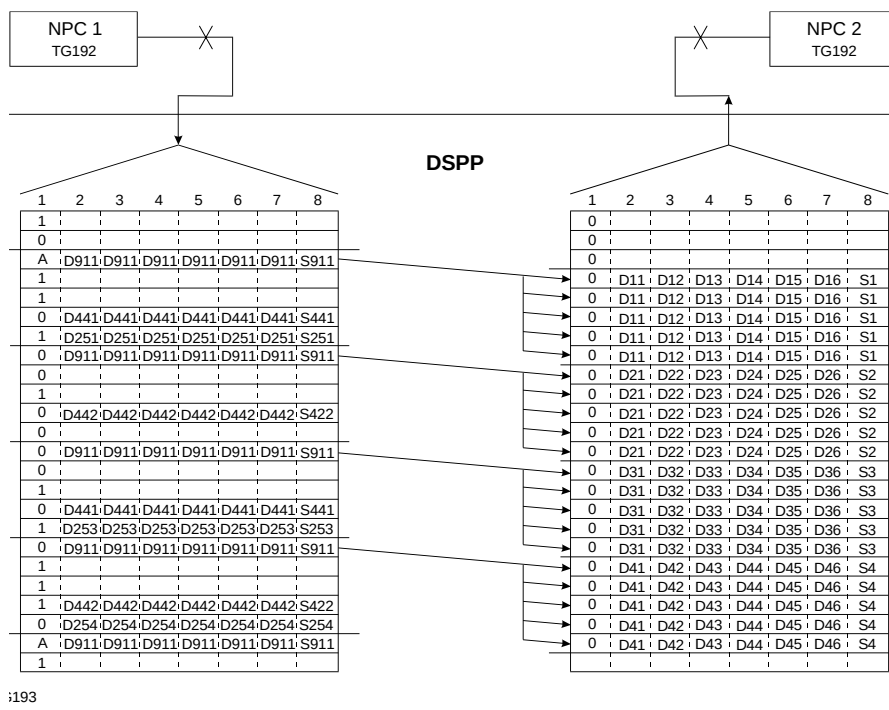


Figure 12-4. X.50 to X.57 Customer Circuit Cross-Connection Diagram

X.50 to X.57 Customer Circuit Cross-Connection (Continued)

X.50 to X.57 Schematic Description

The incoming frame is identical to the frame in Figure 12-3; however, the outgoing frame is a X.57 circuit. Note that all framing bits are "0" because there is no agreed upon framing patten for X.57 circuits. The cross-connection is between 9.6 kbit/s circuit 911 and the X.57 circuit. Each envelope that is obtained from the X.50 circuit is transferred, with the exception of the framing bit, to the X.57 circuit and repeated five times.

Figure 12-4 illustrates the direction from an X.50 circuit to a X.57 circuit and not in the other direction. The other direction the cross-connection is comparable to the one shown in this figure. Every fifth envelope in the X.57 circuit is used and multiplexed onto the X.50 circuit. If a 4.8 kbit/s circuit was cross-connected, every 10th envelope would have been transferred and for 2.4 kbit/s circuits every 20th envelope would have been transferred.

Using DND for Subrate Provisioning

Set Up

Before a subrate cross-connect can be performed, you must:

1. Create an NPC that is a subrate type (SD111).
 2. Establish a DSO channel to carry subrate traffic.
 3. Connect the DSO channel to the DSPP platform, which is referred to as an *established channel*.
-

Reports

DND provides two reports that allow you to search subrate channels and cross connections:

- The *ESTABLISHED DSO CHANNELS SEARCH CRITERIA* form allows you to search established channel information.
- The *SUBRATE CIRCUITS SEARCH CRITERIA* form allows you to search subrate cross connect information.

For more information on these reports, refer to *Chapter 15, Report Operations*.

Database Audit/ Synchronization

The Database Audit/Synchronization feature allows you to perform a *SUBRATE AUDIT* and *SUBRATE SYNC* to synchronize subrate circuits in the DND and/or DACS database. For more information on database synchronization, refer to *Chapter 16, Database Audit/Synchronization*.



NOTE:

DND will deny NPC Roll commands if a DSO channel is connected to a DSPP platform.

DND Forms: Establish DS0 Channel Form

Sample Form

To provision a DS0 channel, from the DND Forms Main Menu, select PROVISIONING, then select ESTABLISH DS0 CHANNEL. The ESTABLISH DS0 CHANNEL form is displayed, as shown in Figure 12-5.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows the date and time '12:50 29 Oct 1998', followed by 'Status:' and 'Alarms:'. The main title of the form is 'ESTABLISH DS0 CHANNEL'. Below this, the form contains several fields: 'Site Name: DACSCentral-X25', 'Action: ACTIVATE', 'Ckt ID: dacs01', 'Ckt Status: NULL', and 'Ckt Class: EST'. A table with columns 'Hier', 'Ext', 'NPC ID', 'Ch', and 'TYPE' is present, with 'FROM' and 'TO' rows showing values like '01101', '0001', 'DS01', and 'SD111'. Below the table, there are fields for 'Transmission Standard: X.50', 'Transmission Rate:', 'Bit Framing Pattern: F20', 'UMC: FF', 'MUX: FF', and 'SIG: E'. At the bottom, it says 'COMMAND EXECUTION IN PROGRESS' with a red square icon, followed by 'Enter two characters in Hexadecimal notation.' and 'snoopy: UI-01'. A row of buttons at the very bottom includes 'HELP', 'QUIT', 'RECNCILE', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Hier	Ext	NPC ID	Ch	TYPE
FROM: 01101	0001	DS01	001	
TO: 01101	0001	DS01		SD111

Figure 12-5. DND Forms: ESTABLISH DS0 CHANNEL Form

DND Forms: Establish DS0 Channel Form (Continued)

Field Descriptions Field descriptions for the ESTABLISH DS0 CHANNEL form are described in Table 12-1.

Table 12-1. DND Forms: Field Descriptions for the ESTABLISH DS0 CHANNEL Form

Field	Description
Site Name	Enter the name of the DACS where the requested Action will take place. Pressing CHOICES displays WHICH DACS? with a list of the DACS names. These names were established during Frame Administration.
Action	Mandatory. Enter the action to be performed with regard to the circuit. ■ ACTIVATE - Enters the channel specified by Ckt ID in the DND database (if it does not yet exist) and connect the DS0 channel to a DSPP platform. When this action is completed successfully, the Ckt Status changes from <i>NULL</i> to <i>ACTIVE</i>. ■ DELETE - Removes the specified circuit from the DND and frame databases, returning the Ckt Status to <i>NULL</i>. Deletion of an <i>ACTIVE</i> circuit results in disconnection deactivation of the circuit in the frame before the record is deleted in the DND. ■ MODIFY - ows you to change the Ckt ID of the establishing DS0 channel. ■ DEACTIVATE - As a result of this action, enters the specified circuit in the DND database as <i>DEACTIVATED</i> and disconnects it in the frame. ■ BROWSE - Gives you read-only access to the DND database for retrieving and scrolling circuit records.

Table 12-1. DND Forms: Field Descriptions for the ESTABLISH DS0 CHANNEL Form (Continued)

Field	Description
Ckt ID	Mandatory. must be unique. One through 41 characters from the printable ASCII character set, excluding *, \, ?, ",], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. This field associates the name entered in this field to a connection between a DS0 channel and a DSPP platform.
Ckt Status	A display-only field indicating the operating status of the circuit. ■ <i>NULL</i> - The circuit has not been defined and, therefore, is not in the frame or DND databases. To define the circuit, use the ACTIVATE Action. ■ <i>ACTIVE</i> - The circuit is active in the DND database and/or the frame. ■ <i>DEACTIVATED</i> - The circuit is in the DND database but is not cross-connected in the frame. The DND record is marked <i>DEACTIVATED</i>. To cross-connect the circuit, use the ACTIVATE Action.
Ckt Class	Mandatory. Read only field that specifies the type of circuit for an established DS0 channel. The only class for this field is EST.
Hier	An NPC number in hierarchical format. (See <i>Chapter 8, NPC Provisioning</i> for an explanation of hierarchical and extended formats.) As shown in the diagrams under Ckt Class above, an NPC identifier for the NPC of the FROM channel and another for the NPC of the TO channel are required for one-way and two-way, two-point circuits. The identifier can be a number in hierarchical format, a number in extended format, or the NPC ID . The NPC must have been provisioned.
Ext	The FROM or TO NPC number in extended format. Automatically provided if Hier or NPC ID was entered.
NPC ID	The FROM or TO NPC ID . With the entry of a value in Hier , Ext , or NPC ID , the DND automatically performs a database query and displays the corresponding FROM or TO information in each field.

Table 12-1. DND Forms: Field Descriptions for the ESTABLISH DS0 CHANNEL Form (Continued)

Field	Description
Ch	The FROM channel number from 0-31 for CEPT or 1-24 for NAS. Virtual channel numbers can range from 1 to 500; however, one is automatically selected by the system during provisioning of virtual multipoint circuits.
TYPE	Mandatory. This field is populated automatically if a DSPP slot address has been selected.  DANGER: The TO NPC TYPE is read only.
Transmission Standard	Mandatory. This field accepts the following transmission standards: X.50, and X.57. ■ X.50 - A 64 kbit/s circuit that carries a number of multiplexed circuits of lower data rates using the International Telecommunications Union (ITC) X.50 recommendation. ■ X.57 - An individual lower rate circuit (lower than 64 kbit/s) that is transmitted on a 64 kbit/s facility using the ITC X.57 recommendation.
Transmission Rate	Entry for this field is required only if the Transmission Standard field is X.57. Valid entries are: 2.4, 4.8, and 9.6.
Bit Framing Pattern	The DND provides a blank default bit framing. Otherwise, the option F20 can be selected.
UMC	Optional. Unoccupied Multiplexer Channel. This field accepts two alphabetic characters.
MUX	Optional. If the multiplexer out of synchronization code is not specified. This field accepts two alphabetic characters.
SIG	Optional. If the signalling bits are not specified. This field accepts one alphabetic character.

DND Forms: Subrate Cross Connect Form

Sample Form

To provision a subrate cross-connection, from the DND Forms Main Menu, select PROVISIONING, then select SUBRATE CROSS CONNECT. The SUBRATE CROSS CONNECT form is displayed, as shown in Figure 12-6.

The screenshot displays the 'DND USER INTERFACE' window. At the top left, it shows the time '12:54 29 Oct 1998' and 'Status:'. Below that is 'Alarms:'. The main form area is titled 'SUBRATE CROSS CONNECT'. It contains several input fields: 'Site Name:' with the value 'DACSCentral-X25', 'Action:' with 'ACTIVATE', 'Ckt ID:', 'Ckt Status:', and 'Ckt Class:'. There are also fields for 'FROM EST CHANNEL CKT ID:' and 'TO EST CHANNEL CKT ID:'. A table-like section follows with headers 'Hier', 'Ext', 'NPC ID', 'Ch', and 'CUST'. It has rows for 'FROM:' and 'TO:'. Below this is 'Data Rate:'. Further down are 'Customer Name:', 'Service Date:', 'Loc A:', 'Loc Z:', and 'Rmks:'. At the bottom of the form area, it says 'Enter the site name.'. Below the form area, it says 'snoopy: UI-01'. At the very bottom, there is a row of buttons: 'HELP', 'CHOICES', 'QUIT', 'RECNCILE', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 12-6. DND Forms: SUBRATE CROSS CONNECT Form

DND Forms: Subrate Cross Connect Form (Continued)

Field Descriptions The field values for the SUBRATE CROSS CONNECT form are described in Table 12-2.

Table 12-2. DND Forms: Field Descriptions for the SUBRATE CROSS CONNECT Form

Field	Description
Site Name	Enter the name of the DACS where the requested Action will take place. Pressing CHOICES displays WHICH DACS? with a list of the DACS names. These names were established during Frame Administration.
Action	Mandatory. Enter the action to be performed with regard to the circuit. ■ ACTIVATE - Enters the channel specified by Ckt ID in the DND database (if it does not yet exist) and allows you to connect subrate customer circuits in the frame, making it an existing, traffic-carrying circuit. When this action is completed successfully, the Ckt Status changes from <i>NULL</i> to <i>ACTIVE</i>. ■ MODIFY - Retrieves the specified circuit from the DND database for purposes of altering circuit attributes or Ckt ID. MODIFY does not change the Ckt Status. ■ DELETE - Removes the specified circuit from the DND and frame databases, returning the Ckt Status to <i>NULL</i>. ➡ NOTE: Deletion of an <i>ACTIVE</i> circuit results in deactivation of the circuit in the frame before the record is deleted in the DND. ■ DEACTIVATE - The specified circuit in the DND database as <i>DEACTIVATED</i> and disconnects it in the frame.

Table 12-2. DND Forms: Field Descriptions for the SUBRATE CROSS CONNECT Form (Continued)

Field	Description
Action , Continued	■ BROWSE - Gives you read-only access to the DND database for retrieving and scrolling circuit records. As soon as you press EXECUTE after entering an Action of BROWSE, the DND displays the CIRCUIT PROVISIONING SEARCH CRITERIA form. Its fields are taken from the CIRCUIT PROVISIONING form. Entering a value in any defined field restricts the search. To initiate the search, press EXECUTE. To return to CIRCUIT PROVISIONING without executing, press QUIT. ■ MODIFY - Allows you to change the Ckt ID of the establishing DS0 channel.
Ckt ID	Mandatory. must be unique. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.
Ckt Status	A display-only field indicating the operating status of the circuit. ■ NULL - The circuit has not been defined and, therefore, is not in the frame or DND databases. To define the circuit, use the ACTIVATE Action. ■ ACTIVE - The circuit is active. ■ DEACTIVATED - The circuit is in the DND database but is not cross-connected in the frame. The DND record is marked DEACTIVATED. To cross-connect the circuit, use the ACTIVATE Action.
Ckt Class	Mandatory. This is a read-only field that specifies the type of circuit. The only option displayed is SUB for subrate.

Table 12-2. DND Forms: Field Descriptions for the SUBRATE CROSS CONNECT Form (Continued)

Field	Description
Hier	An NPC number in hierarchical format. (See Chapter 8, NPC Provisioning for an explanation of hierarchical and extended formats.) As shown in the diagrams under Ckt Class above, an NPC identifier for the NPC of the FROM channel and another for the NPC of the TO channel are required for one-way and two-way, two-point circuits. The identifier can be a number in hierarchical format, a number in extended format, or the NPC ID . The NPC must have been provisioned.
Ext	The FROM or TO NPC number in extended format. Automatically provided if Hier or NPC ID was entered.
Ch	The FROM or TO channel number, 0 - 31 for CEPT or 1 - 24 for NAS.
FROM NPC	The FROM NPC of the cross connection.
FROM CH	The From channel of the cross connection.
FROM EST CHANNEL CKT ID	Optional. This field allows you to specify the FROM Ckt ID for an established DS0 channel. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.
TO EST CHANNEL CKT ID	Optional. This field allows you to specify the TO Ckt ID for an established DS0 channel. One through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored.
TO NPC	The To NPC of the cross connection.
TO CH	The To channel of the cross connection.

Table 12-2. DND Forms: Field Descriptions for the SUBRATE CROSS CONNECT Form (Continued)

Field	Description
CUST	Mandatory. This field allows you to specify the customer number of a subrate circuit. This field accepts up to three characters. The formats for each of the following standards are: X.50 Standard: Allowed values are "a-b", where "a" and "b" are two digits, for example 1-1. The "a" can be within a range from 1 to 5 and the "b" can be in a range from 1-4. X.57 Standard: "1-1" is the <i>only</i> value for this standard.
Data Rate	Mandatory. This valid entries for this field are: 2.4, 4.8, and 19.2.
Customer Name	Optional. This field allows you to specify the customer name associated with a subrate circuit. This field accepts up to 12 characters.
Service Date	The DND provides a default date as "today's" date. There are three fields associated with this field in the format DD MMM YY, where DD is the day, MMM is the first three letters of the month, and YY is the year.
Loc A and Loc Z	Optional. Up to 24 alphanumeric characters. Loc A is the location identifier for the FROM end of the circuit being provisioned and Loc Z is the TO end of the circuit being provisioned.
Rmks	Optional. This field allows you to specify up to 77 characters for remarks.

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Background

Purpose

The purpose of this chapter is to introduce users to the equipment view concept. Users will be able to visually monitor the alarm status and equipage of a Network Element. In addition, port provisioning forms (NPC PROVISIONING or MMFG PROVISIONING), the DATABASE AUDIT/SYNCHRONIZATION form, and (for equipped ports only) port alarm reports for NPCs, MMFGs, and SNMP ports are accessible from equipment views by clicking on either an equipped or an unequipped port.

Equipment views are displayed from the DND GUI.

Objectives

This chapter provides information to perform the following:

1. Display an equipment view of all Network Elements, except the "Other" type SNMP element.
 2. Identify the equipage and alarm severity status of an SNMP, DACS frame, or any of the DACS II subassemblies.
 3. Provision NPCs and MMFGs from an equipment view.
 4. Retrieve alarm report information for NPCs, MMFGs, and SNMP ports.
-

Related information

For related information refer to the:

- *DACS II and DACS II ISX Operation and Maintenance Manuals.*
-

Using Equipment Views

Description

An equipment view displays the equipage and alarm status of a Network Element. High-level and individual unit views are provided for the CEF, Non-CEF, and E/SBF DACS II frames. The equipment views for the rest of the Network Elements display only a detailed view of its system components (ports, power units, timing references, etc.). The DND supports the following equipment views:

- High-level view of the DACS II (CEF, Non-CEF, and E/SBF) and its sub-assemblies/units
- Detailed view of the various DACS II sub-assemblies and units:
 - Facility Terminating Unit (FTU), Integrated Facility Terminating Unit (IFTU), and Integrated Facility Terminating Unit 2 (IFTU2)
 - FTU Common Equipment
 - Digital Signaling Processing Unit (DSPU)
 - Hybrid/Digital Signal 3 Unit (HDS3U/DS3U)
 - Cross-Connect Network and Enhanced Cross-Connect Network (CCN/ECCN) sides 0 and 1
 - Main Controller (MC)
- View of the DACS II ISX
- View of the DACS II AX 4 and DACS II AX 11
- View of the AAC/IMACS elements: Model 600, 800, and 900 shelves.

**NOTE:**

There are no equipment views for Network Elements provisioned as "Other."

Port Equipage

Each equipment view displays the port (NPC, MMFG, or SNMP port) and/or other circuit pack equipage on that Network Element. Ports are shown in a equipment view slot if either one or all ports in the slot are equipped. Dark grey spaces in either the high-level or detailed views indicate vacant slots (unequipped circuit packs or units).

Using Equipment Views (Continued)

Provisioning and Report Retrieval

In addition to viewing equipage and alarm status, the NPC and port (both considered ports) slots are now clickable to perform additional provisioning and/or report retrieval actions. When port slots are clicked, a pull-down menu is displayed. When an option is selected, one of the two choices will appear:

- A form with selected site/port information pre-populated (for the DACS II and DACS II ISX only)
- An automatically generated report using the information from the selected site and port.

Table 13-1 describes the selections available for equipped and unequipped port slots:

Table 13-1. Port Pull-Down Options Available in Equipment Views

IF you click on...	THEN the choices on the menu are...
An unequipped NPC slot	■ <i>NPC Provisioning</i> - The NPC PROVISIONING form appears with the Site Name, NPC information, and the <i>CREATE Action</i> fields pre-populated. ■ <i>Database Audit/Synchronization</i> - The DATABASE AUDIT/ SYNCHRONIZATION form appears with the Site Name, Mode, NPC information, and the <i>NPC Audit Action</i> fields pre-populated.
An equipped NPC slot	■ <i>NPC Provisioning</i> ■ <i>Database Audit/Synchronization</i> ■ <i>NPC Alarm Report</i> - An NPC ALARM Report is automatically generated. ■ <i>NPC Report</i> - The NPC Report is automatically generated.
An equipped MMFG slot	■ <i>MMFG Provisioning</i> - The MMFG PROVISIONING form appears with the Site Name, Action, and MMFG information fields pre-populated. ■ <i>Database Audit/Synchronization</i> - The DATABASE AUDIT/ SYNCHRONIZATION form appears with the Site Name, Mode, MMFG information, and the Action fields pre-populated. ■ <i>MMFG Provisioning Report</i> - The MMFG PROVISIONING Report is automatically generated.
An unequipped MMFG slot	■ <i>MMFG Provisioning</i> ■ <i>Database Audit/Synchronization</i>
An equipped SNMP port slot	■ <i>Port Alarm Report</i> - The PORT ALARM Report is automatically generated.



NOTE:

The empty SNMP port slots are not “clickable.” To provision an SNMP port, you must use a telnet session to access the SNMP system.

Using Equipment Views (Continued)

Port Numbering

The port slots (NPC, MMFG, and SNMP) in all equipment views are numbered, whether they occupy the space on the Network Element or not. The NPC numbers are displayed in either hierarchical or extended, depending on how the DACS is provisioned.

The NPC slot numbers on the DACS II are typically displayed in the hierarchical numbering scheme, while the DACS II ISX is typically displayed in the extended numbering scheme. However, you can change the way the NPC numbers appear on the view by modifying a DACS to use the desired NPC Numbering scheme (refer to GT 5.6G).

MMFG slot numbers are of the format <DACS II Unit #> - <MMFG #>, for example, 11-3.

SNMP slot numbers are of the format <Card Type><Slot #> - <Port #>, for example, P1-2.

The Alarm Status Indicator

The Alarm Status Indicator (ASI) on the **NE Summary...** button (the colored rectangle) indicates the highest alarm status of a Network Element in the entire network. On an equipment view, the ASI is either a colored rectangle on the sub-assemblies in the high-level DACS II view, or a colored "LED" circle on circuit packs in the other equipment views. The equipment view ASI indicates the alarm status of the unit or circuit pack. With the exception of the MC alarm indicators, the LEDs do not physically appear on the circuit packs. The alarm color scheme (see Table 13-2) is identical to that of the Network Elements and intertie alarm colors.

Table 13-2. Alarm Status Indicator Color Scheme

Color	Alarm Status
Blue "i" next to LED	Informational Alarm
Green	In-Service, No Alarms
Yellow	Minor
Red	Major
Magenta	Critical
Grey	Out-of-Service

Using Equipment Views (Continued)

Common Equipment Alarm Indication

Common Equipment provisioning is not processed by the DND. However, circuit packs for common equipment on the DACS will appear in the equipment view. The ASI does not show the service state (i.e., will never appear grey), but the ASI will show alarm status.

The Half LED Alarm Indicator



When a port circuit pack is pulled from the Network Element while the Network Element is In-Service, or if an NPC/port failed a diagnostics test and is autonomously removed, the alarm indicator color becomes what is referred to as a "Half LED." Half of the LED displays the alarm color, while the other half of the LED is grey (OOS).

Power Alarms

Power alarms are stored as a single alarm entity on a Network Element. For the DACS II CEF, the power alarm status is displayed on the MC equipment view.

DACS II AX Supported Circuit Pack Views

The DACS II AX equipment views allow users the ability to click on certain individual circuit packs to display enlarged and more detailed representations of the selected packs. The following packs are supported by this feature:

- Octal E1/T1
 - Quad HS
 - Quad T1
 - Quad OCU
 - Octal HS
 - Voice Cards
 - T3
 - Test Access
 - SMC
 - Power Supply.
-

Displaying Equipment Views

Overview

To display an equipment view:

1. Right-click and hold on a Network Element icon from the DND network map on the DND Workspace window. A pull-down menu appears next to the icon.
2. Select *Equipment View* from the menu. The EQUIPMENT VIEW window appears with a high-level view of the DACS II selected or the full-view of the other Network Elements. If displaying a DACS II, click on a sub-assembly to get a detailed view of the selected unit.

Using the **Back** Button

Back jumps from a sub-assembly view to the high-level DACS II view. If the equipment view is currently displaying the high-level DACS II view or any other Network Element, then **Back** is inoperable.

Using the **Refresh** Button

DND performs automatic equipment view updating in real-time for DACS sites. Automatic updating is not performed for SNMP sites. Any new changes which occur on an SNMP site since the view was initially opened will not be displayed.

To view changes which have occurred in the DND database (i.e., new provisioning information or alarm status changes for a particular SNMP), click **Refresh** to update the equipment view with any new alarm or equipage information which occurred since the view was displayed or the last **Refresh** operation was performed.

Using the **Close** Button

Close exits the Equipment View window.

DACS Equipment Views

DACS II CEF High Level View

Figure 13-1 and Figure 13-2 are high-level depictions of a DACS II CEF including the MC, CCN, and equipped units. The alarm state of each unit and the CEF alarm summary are displayed on this view. A detailed view of each unit is obtained by clicking directly on the unit.

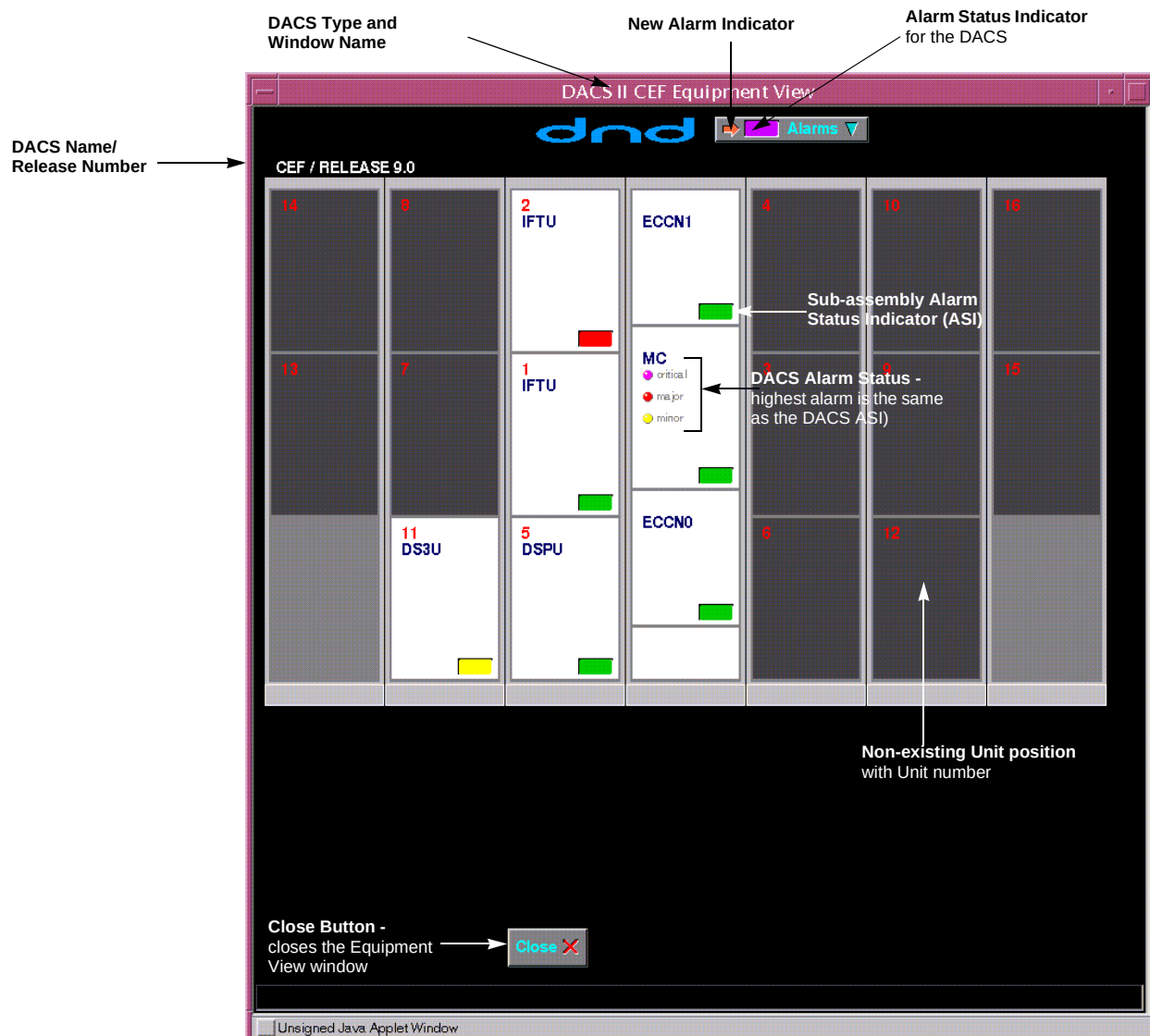


Figure 13-1. DACS II CEF Equipment View - High Level (Unequipped Units)

DACS Equipment Views (Continued)

DACS II CEF High Level View, Continued

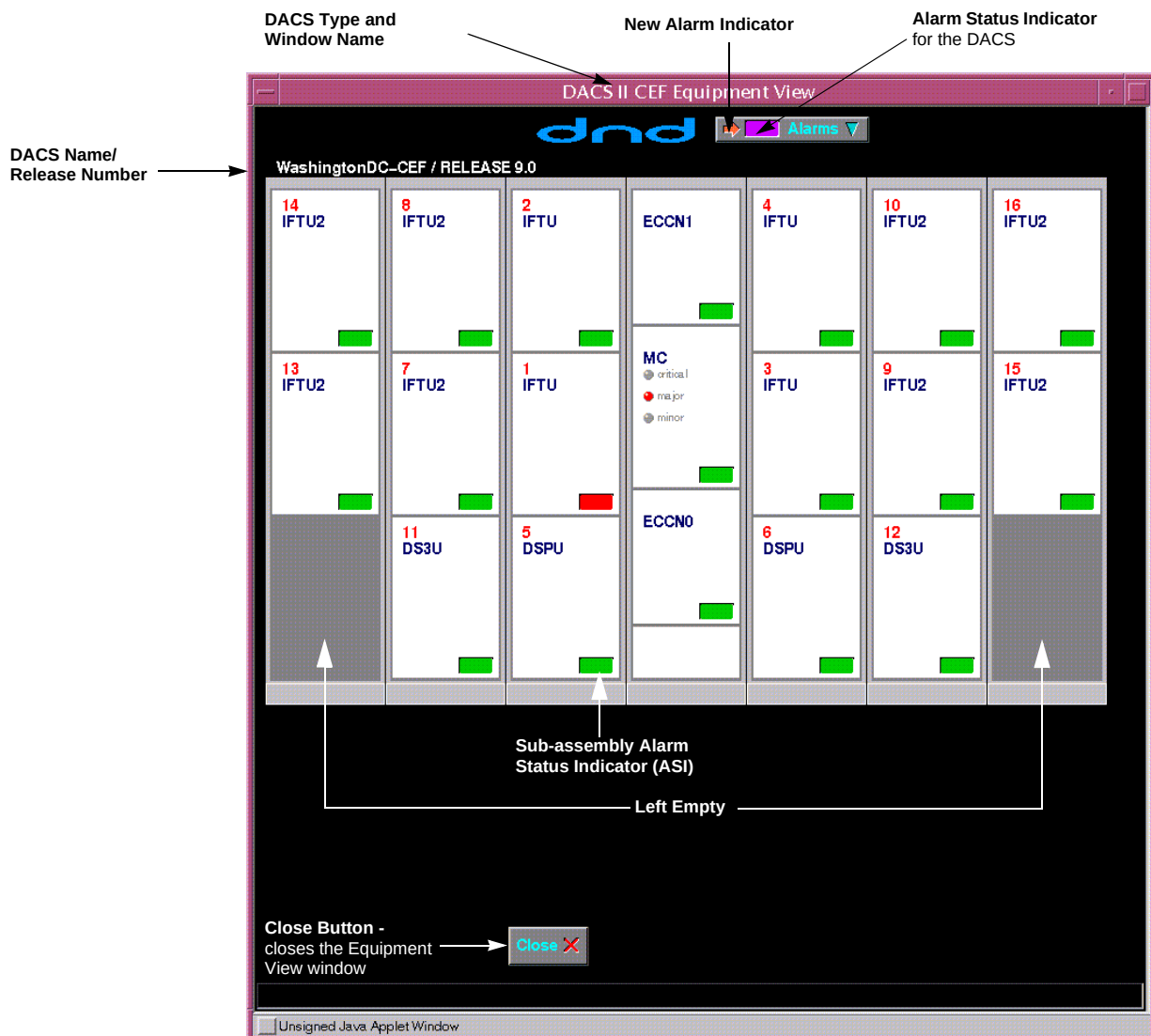


Figure 13-2. DACS II CEF Equipment View - High Level (Fully Equipped)

DACS Equipment Views (Continued)

DACS II Non-CEF High Level View

Figure 13-3 is a high-level depiction of a DACS II Non-CEF. The DACS II Non-CEF can have up to 3 bays. A detailed view of each unit is obtained by clicking directly on the unit.

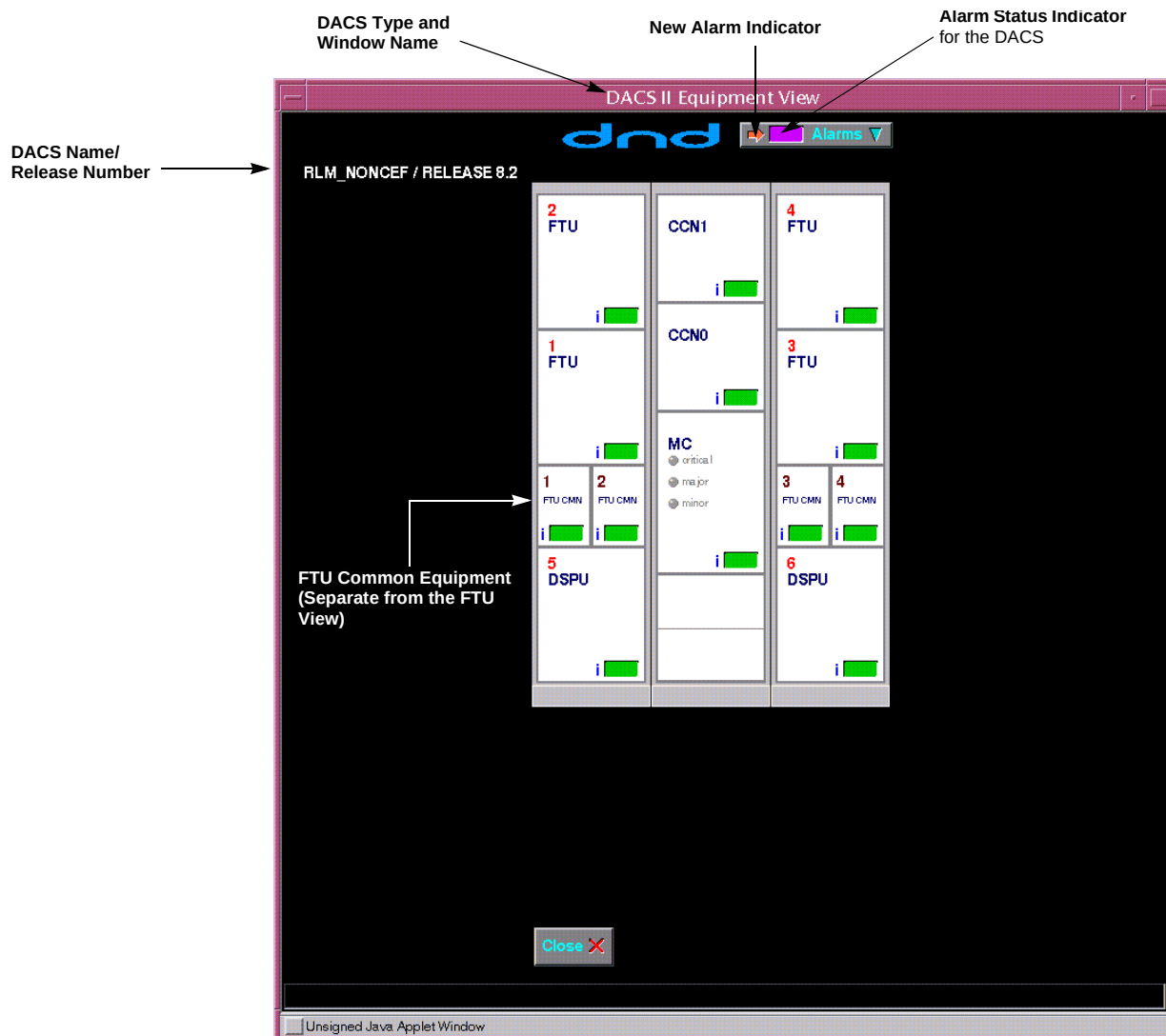


Figure 13-3. DACS II Non-CEF Equipment View - High Level

DACS Equipment Views (Continued)

DACS II SBF High Level View

Figure 13-4 is a high-level depiction of a DACS II SBF. The DACS II SBF has only one bay. A detailed view of each unit is obtained by clicking directly on the unit.

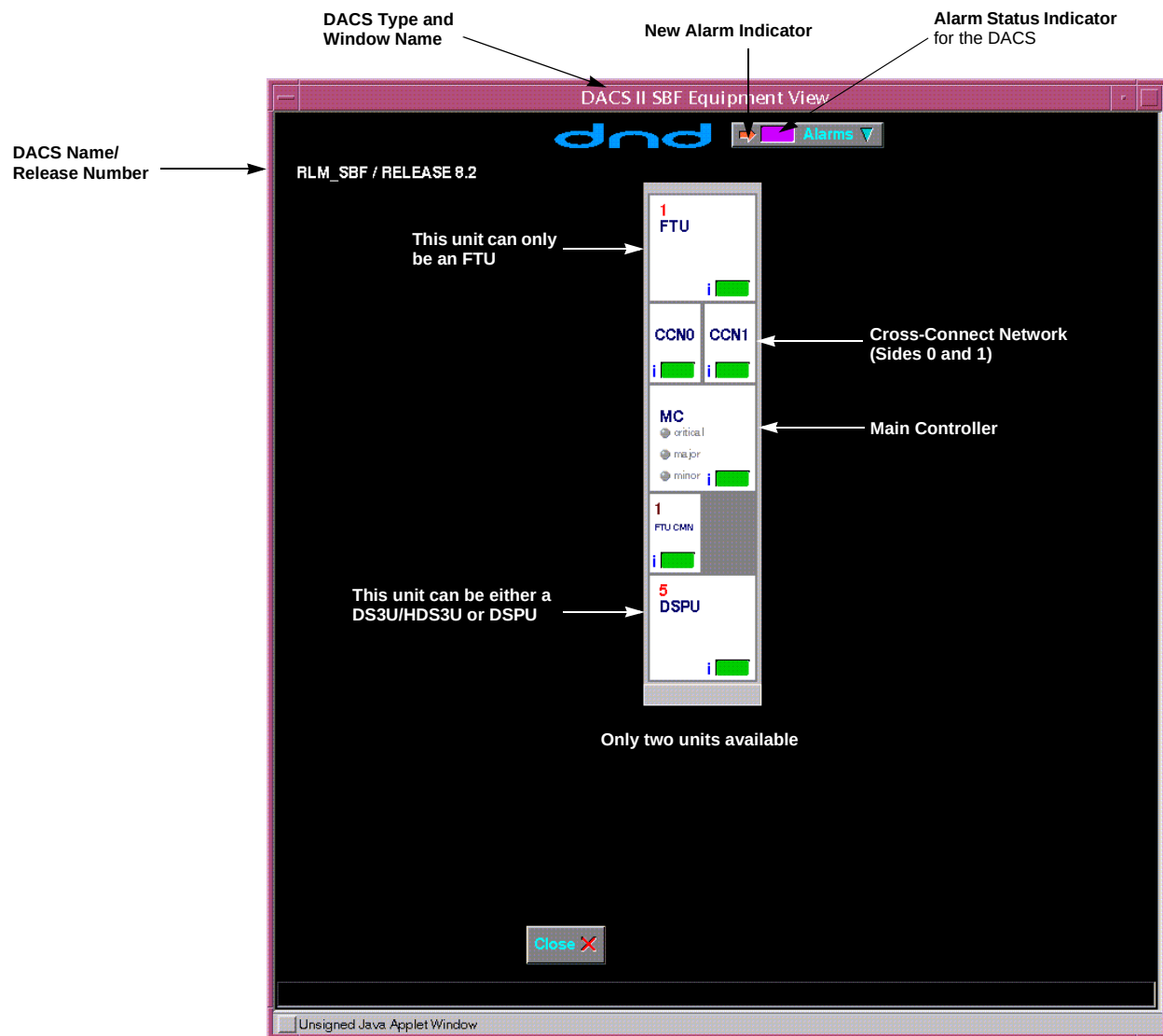


Figure 13-4. DACS II SBF Equipment View - High Level

DACS Equipment Views (Continued)

DACS II ESBF High Level View

Figure 13-5 is a high-level depiction of a DACS II ESBF. Like the DACS II SBF, the DACS II ESBF also has only one bay. A detailed view of each unit is obtained by clicking directly on the unit.

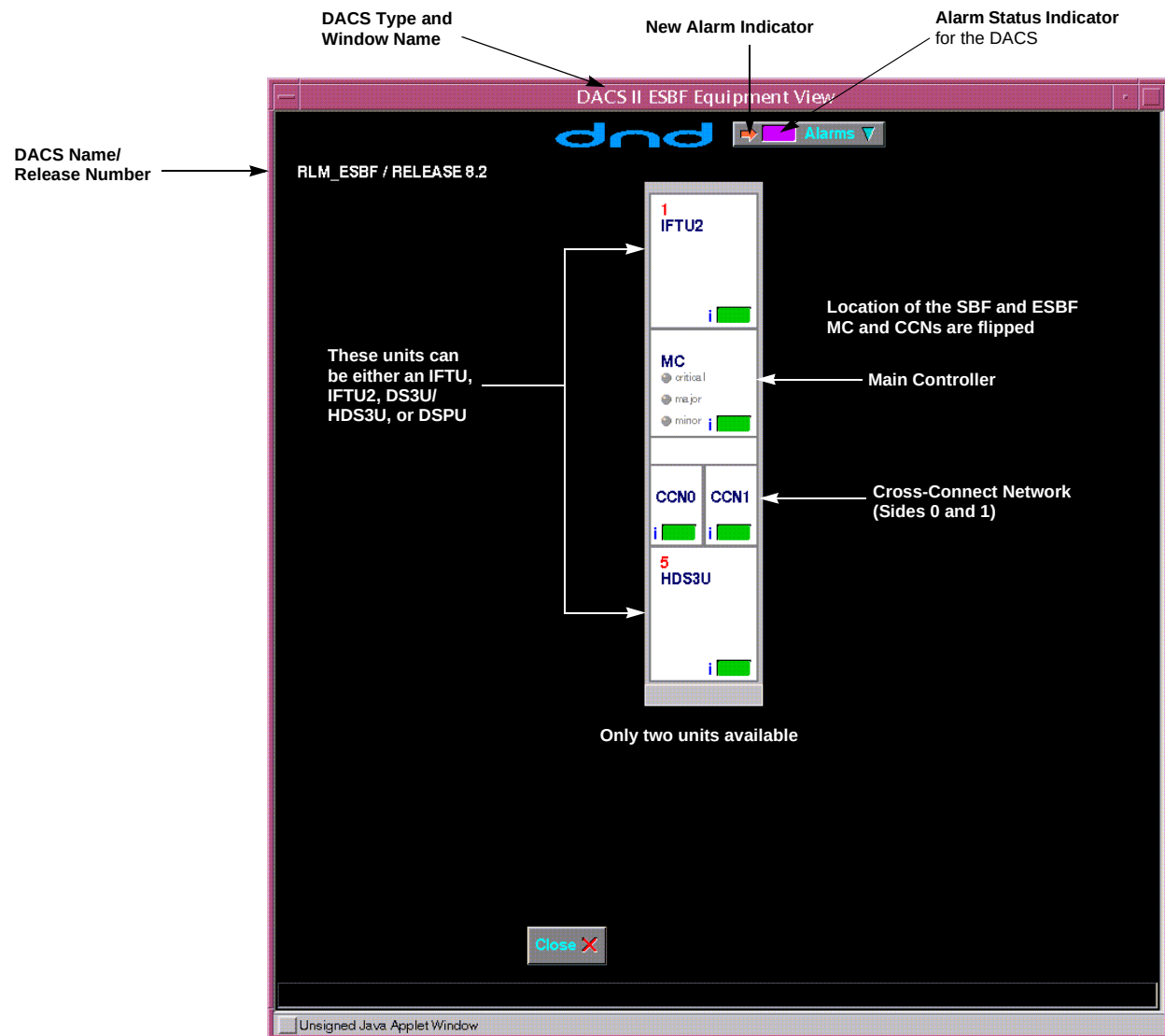


Figure 13-5. DACS II ESBF Equipment View - High Level

DACS Equipment Views (Continued)

DACS II FTU View

Figure 13-6 depicts the circuit pack positioning of a DACS II Facility Terminating Unit (FTU).

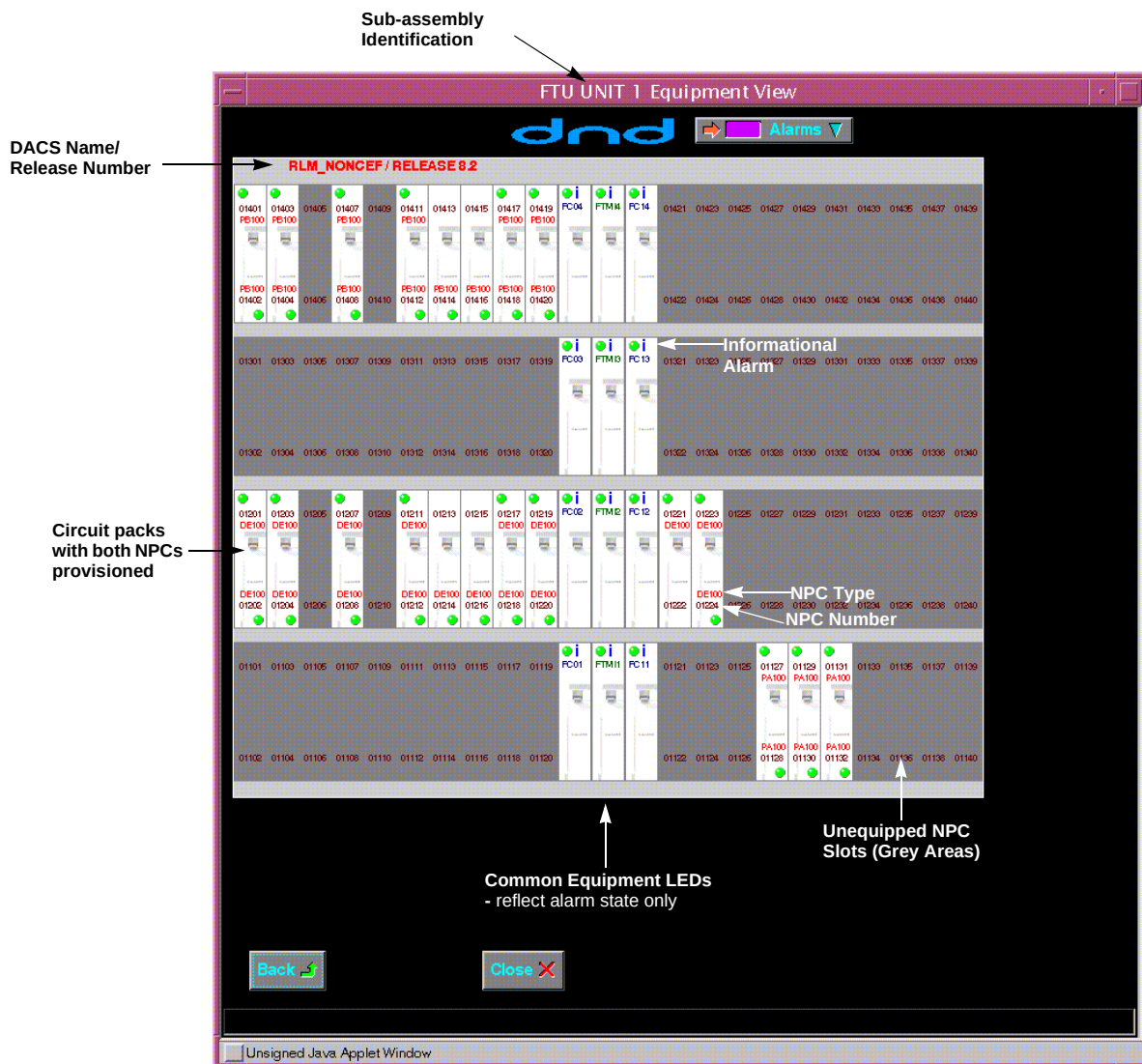


Figure 13-6. DACS II Equipment View - FTU

DACS II FTU Common View

Sub-assembly Identification

FTU COMMON UNIT 1 Equipment View

dnd

Alarms

DACS Name/Release Number

RLM_NONCEF / RELEASE 8.2

PU PU PU UC UBX

Common Equipment LED - reflects alarm state only

FTU Common Unit 2 side greyed out when FTU Common Unit 1 side is selected

Back

Close

Unsigned Java Applet Window

Figure 13-7. DACS II Equipment View - FTU Common

DACS Equipment Views (Continued)

DACS II IFTU View

Figure 13-8 depicts the circuit pack positioning of a DACS II Integrated Facility Terminating Unit (IFTU).

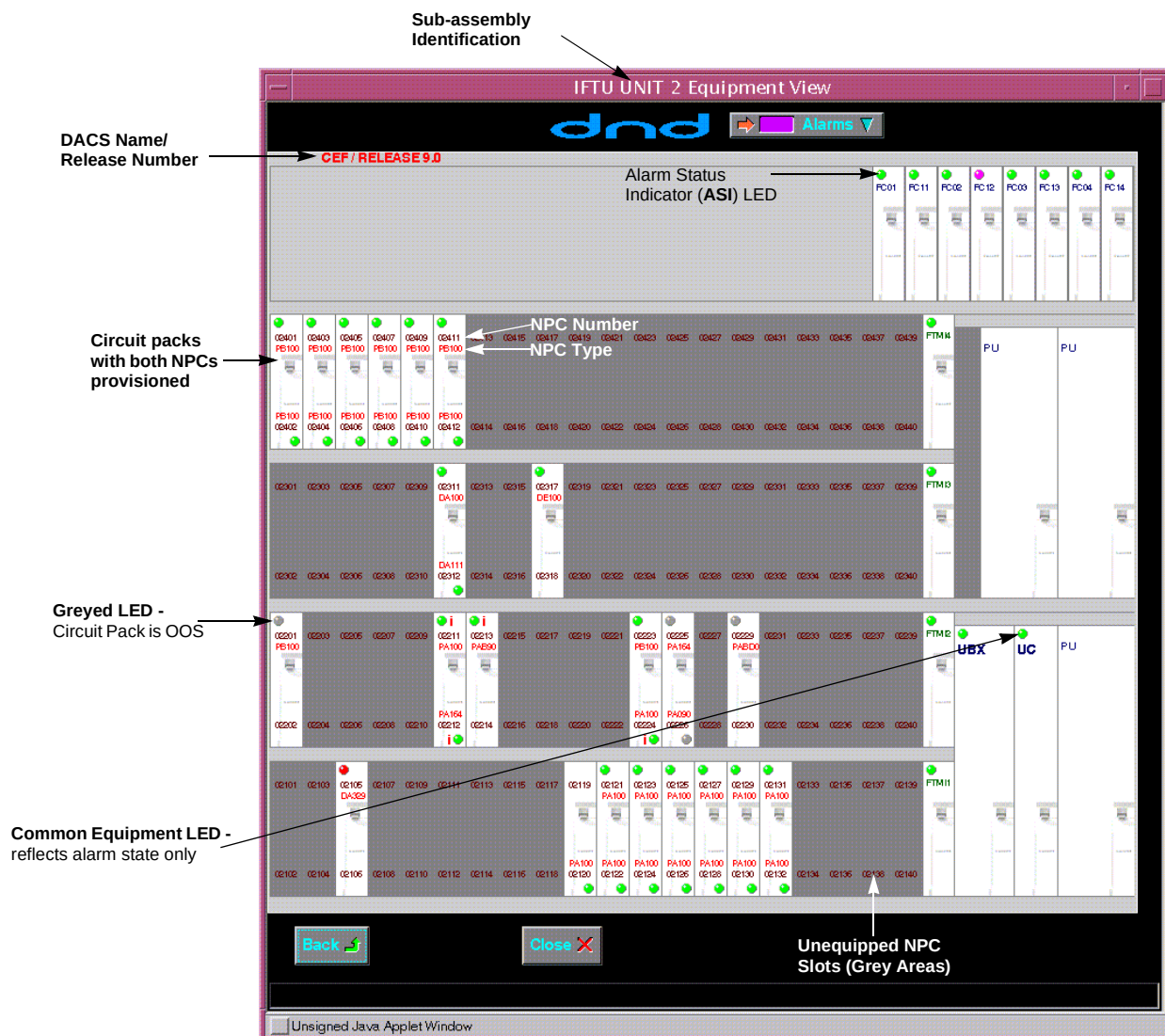


Figure 13-8. DACS II Equipment View - IFTU



NOTE:

DND does not monitor alarms for circuit packs that are displayed without an LED.

DACS Equipment Views (Continued)

DACS II IFTU2 View

Figure 13-9 depicts the circuit pack positioning of a DACS II Integrated Facility Terminating Unit 2 (IFTU2).

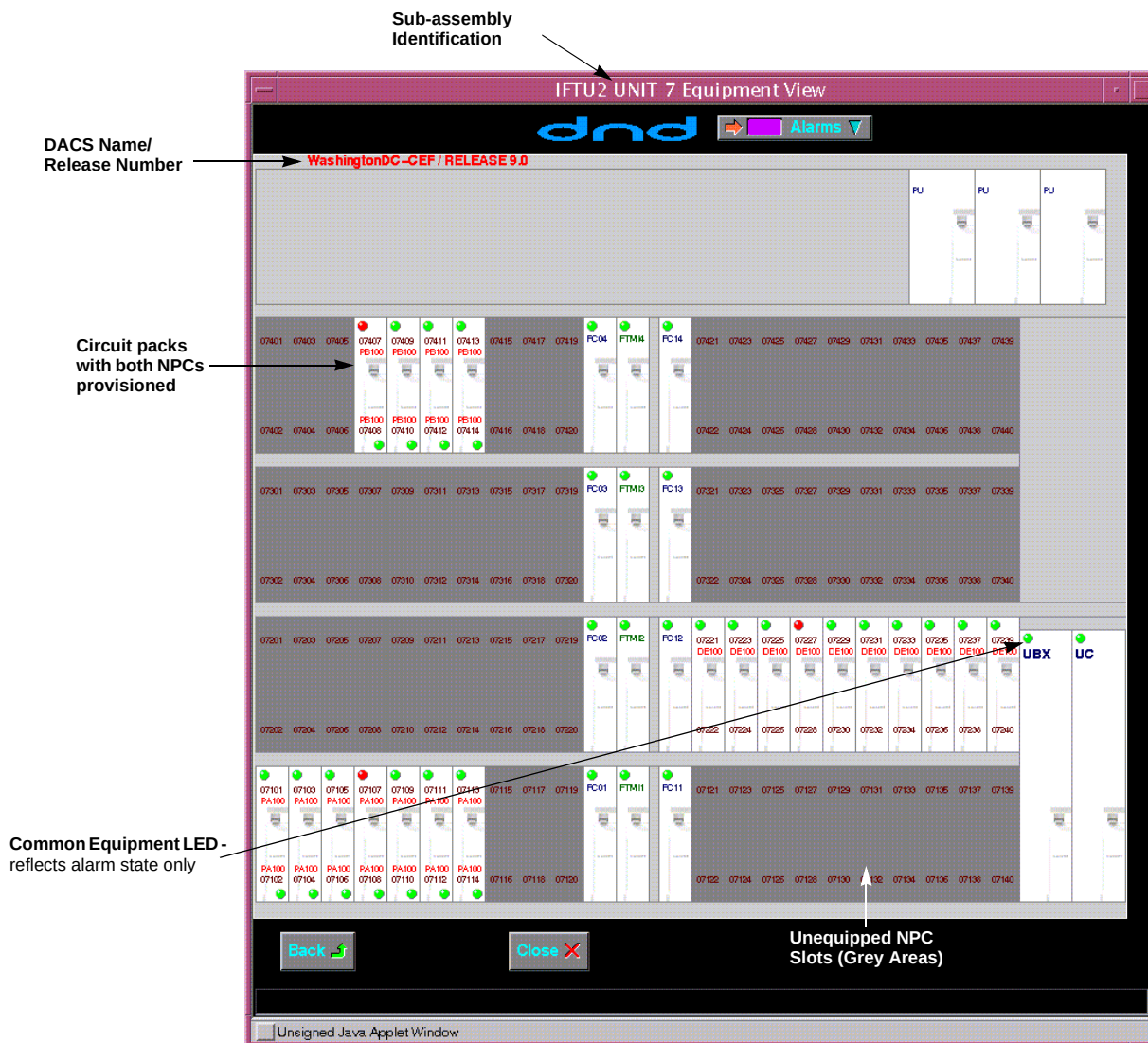


Figure 13-9. DACS II Equipment View - IFTU2

DACS II

DSPU View

DSPU UNIT 5 Equipment View

dnd **Alarms**

XMC1 / RELEASE 9.0

SIDE 0

05101 PA164 05201 PA164 05301 PA164 05401 PA164

05501 05601 05701 05801

UC DSP

SIDE 1

05101 PA164 05201 PA164 05301 PA164 05401 PA164

05501 05601 05701 05801

PU PU PU

Back **Close**

Unsigned Java Applet Window

Figure 13-10. DACS II Equipment View - DSPU

DACS Equipment Views (Continued)

DACS II HDS3U/DS3U View

Figure 13-11 is a depiction of a DACS II Hybrid/Digital Signal 3 Unit (HDS3U/DS3U).

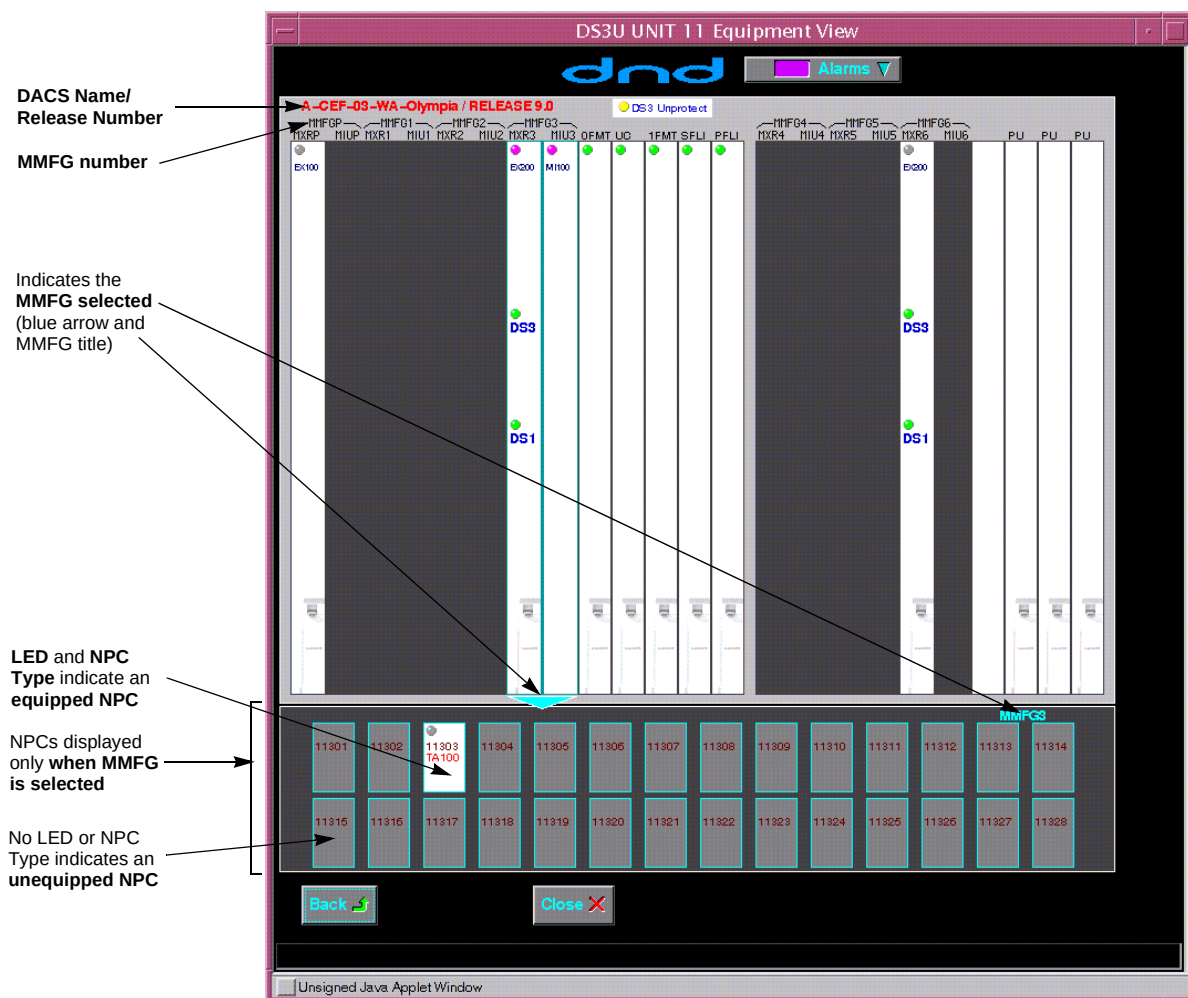


Figure 13-11. DACS II Equipment View - HDS3U/DS3U



NOTE:

Alarms occur on an MMFG unit. The equipment view does not indicate which pack (MIU or MXR) in the MMFG is in alarm.

DACS Equipment Views (Continued)

DACS II CCN View

Figure 13-12 is a depiction of a DACS II SBF or ESBF Cross-Connect Network (CCN).

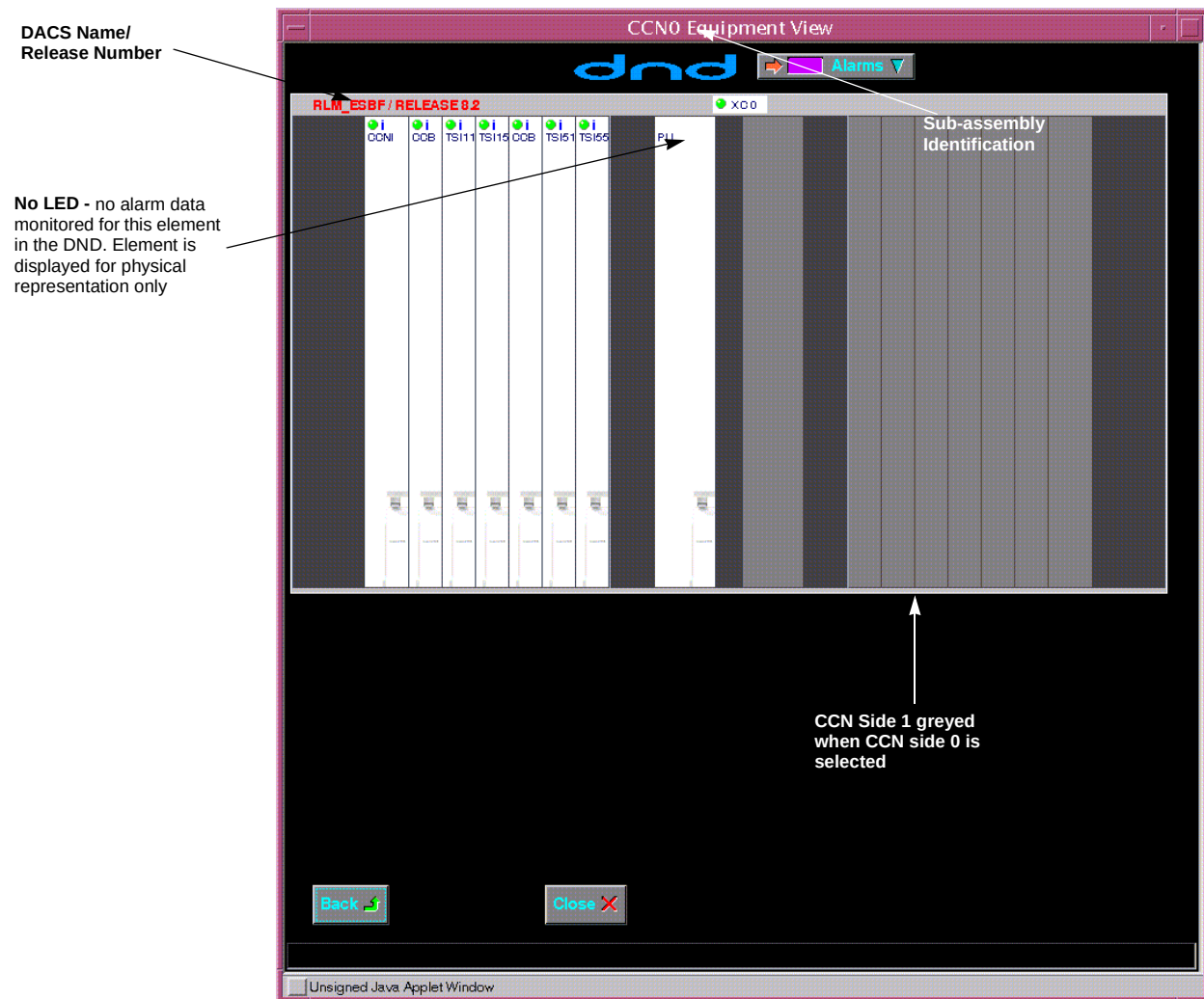


Figure 13-12. DACS II Equipment View - DACS II E/SBF CCN

DACS Equipment Views (Continued)

DACS II Non-CEF CCN View Figure 13-13 is a depiction of a DACS II Non-CEF Cross-Connect Network (CCN).

DACS Name/
Release
Number

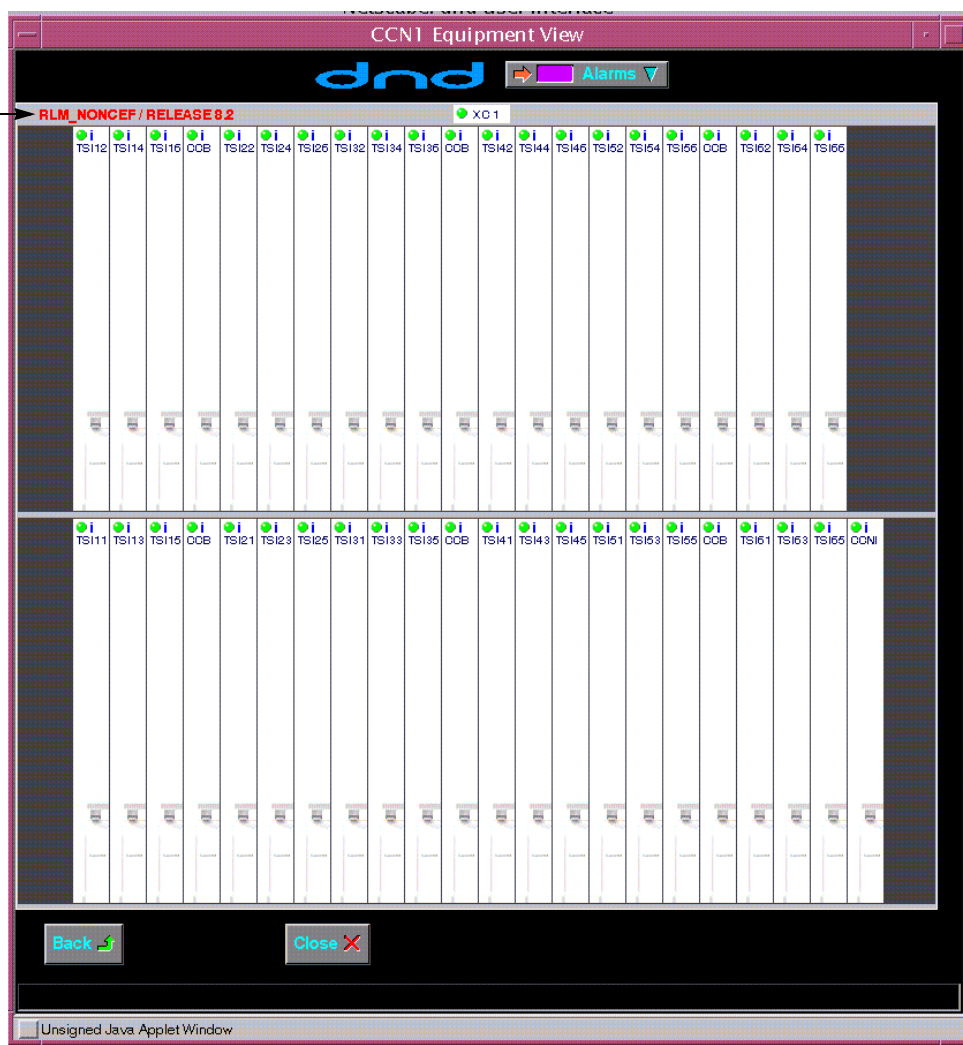


Figure 13-13. DACS II Equipment View - DACS II Non-CEF CCN

DACS Equipment Views (Continued)

DACS II ECCN View

Figure 13-14 is a depiction of a DACS II CEF Expanded Cross-Connect Network (ECCN).

DACS Name/
Release Number

No LED - no alarm data
monitored for this element
in the DND. Element is
displayed for physical
representation only

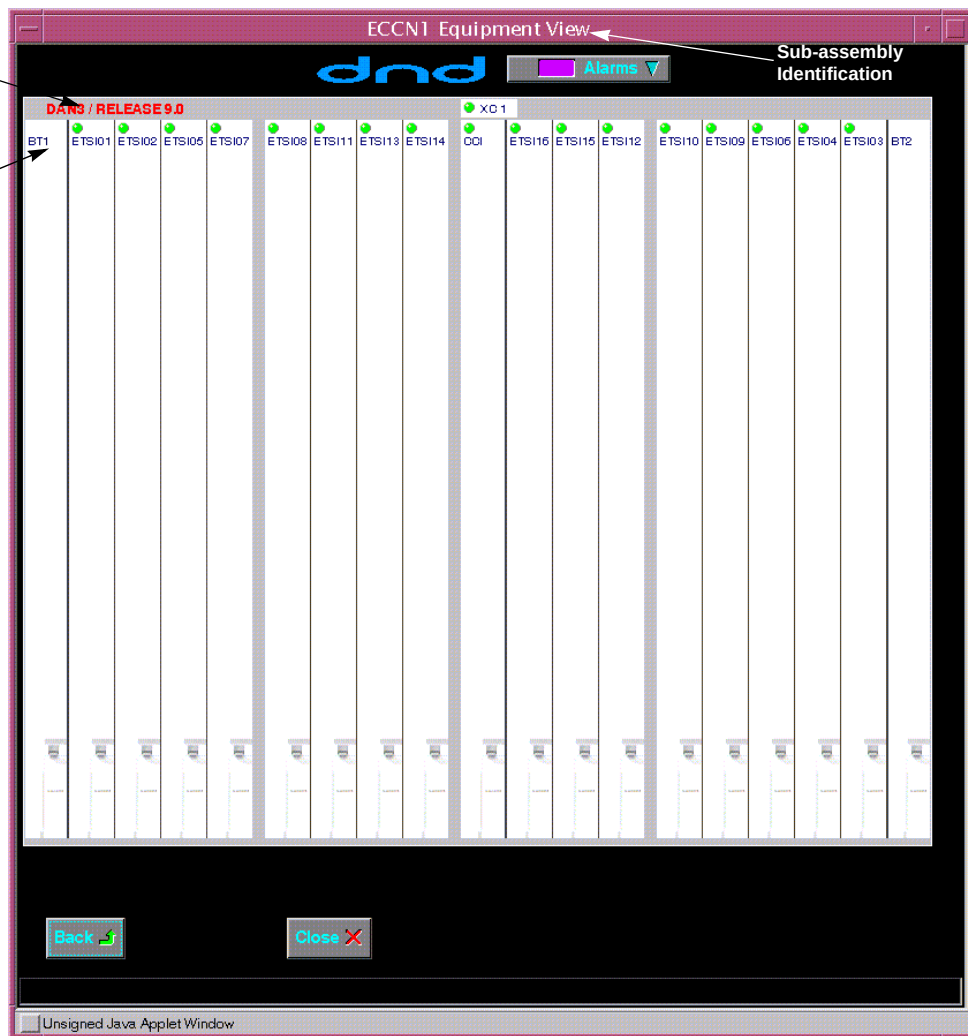


Figure 13-14. DACS II Equipment View - ECCN



NOTE:

DND does not monitor alarms for circuit packs that are displayed without an LED.

DACS Equipment Views (Continued)

DACS II MC View - R7.0 and higher

Figure 13-15 is a depiction of a DACS II Main Controller (MC) shelf with flash cards for DACS II frames Release 7.0 and higher.

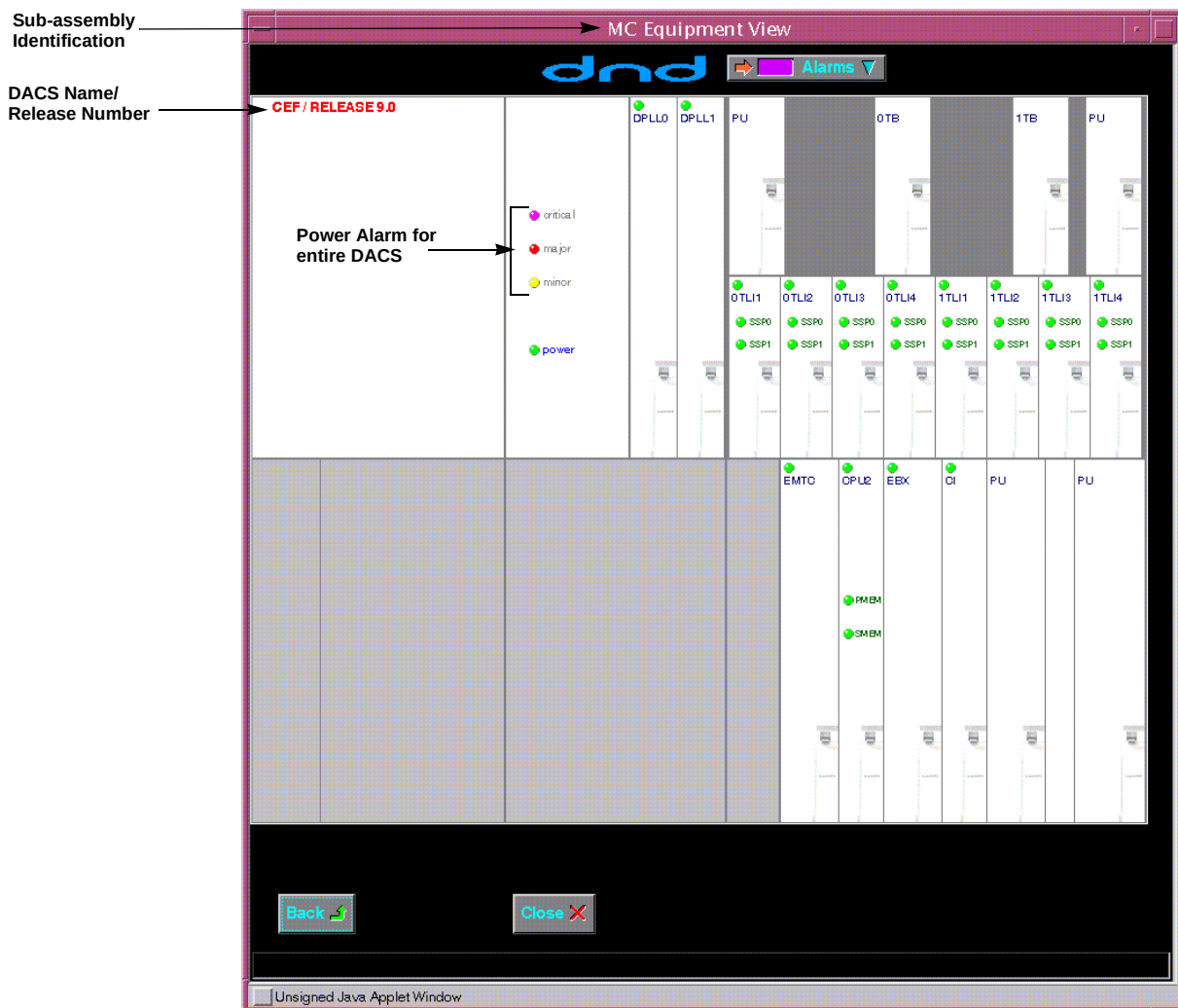


Figure 13-15. DACS II Equipment View - MC (Release 7.0 and higher)

DACS Equipment Views (Continued)

DACS II MC View - Before R7.0

Figure 13-16 is a depiction of a DACS II CEF Main Controller (MC) shelf with tape and disk drive for DACS II frames prior to Release 7.0.

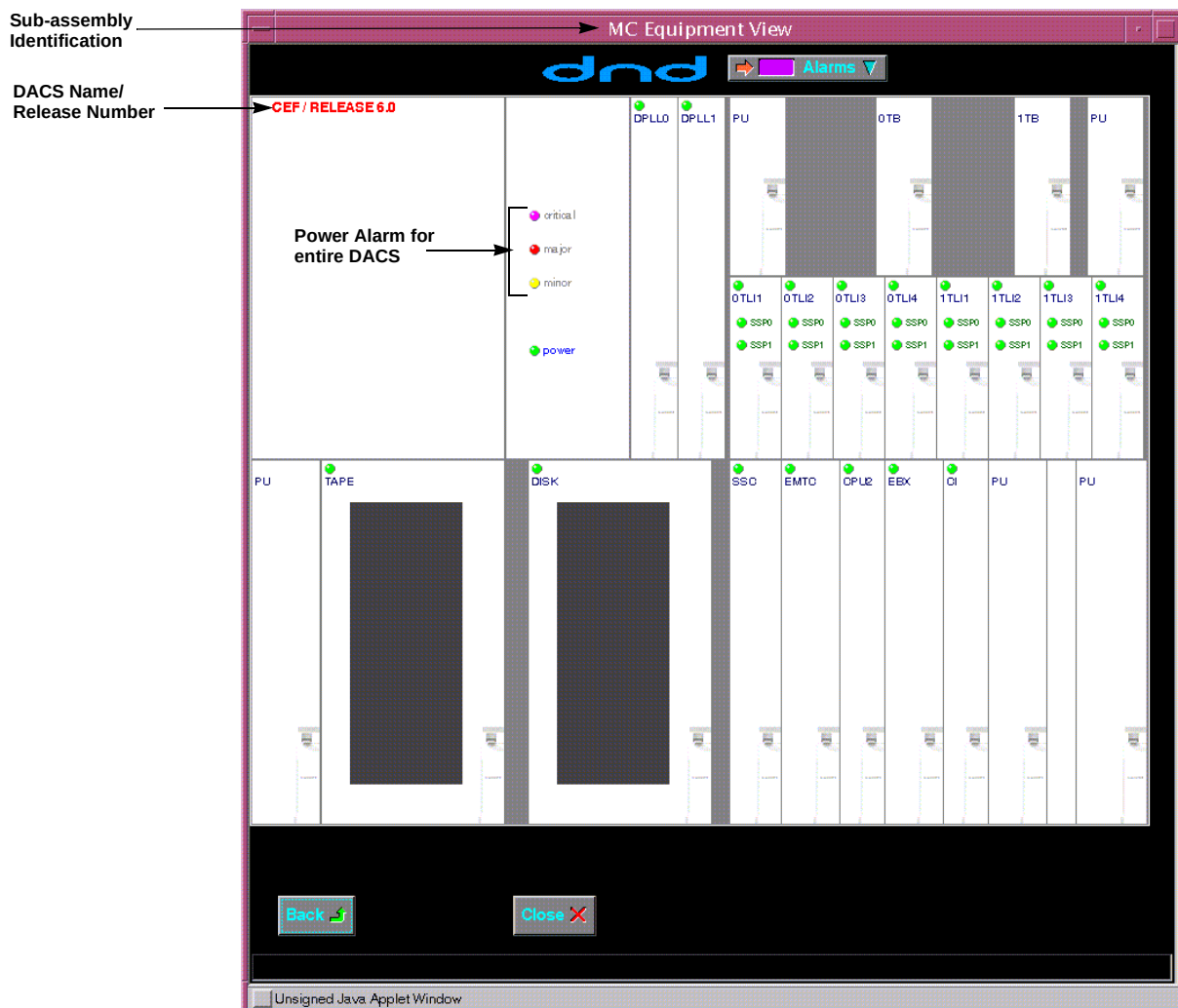


Figure 13-16. DACS II Equipment View - CEF MC (prior to DACS II Release 7.0)

DACS Equipment Views (Continued)

DACS II Non-CEF MC View - Before R7.0

Figure 13-17 is a depiction of a DACS II Main Controller (MC) shelf with tape and disk drive for DACS II Non-CEF frames (which includes Non-CEF, SBF, and ESBF) prior to Release 7.0.

Sub-assembly
Identification

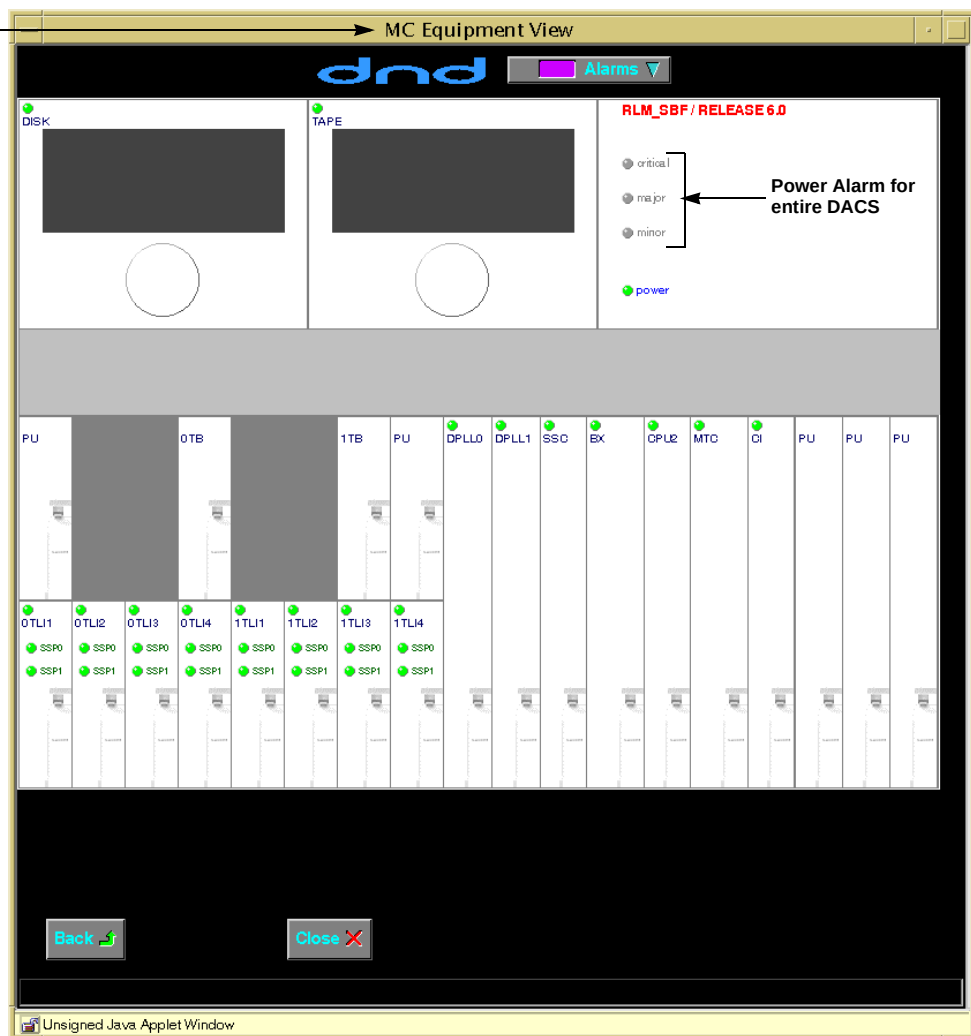


Figure 13-17. DACS II Equipment View - Non-CEF MC (prior to DACS II Release 7.0)

DACS Equipment Views (Continued)

DACS II ISX View

Figure 13-18 is a depiction of an extended DACS II ISX. If the DACS II ISX displayed does not have an expansion shelf, then NPCs 0065 - 0128 will appear as vacant (grey) slots.



Figure 13-18. DACS II ISX Equipment View

SNMP Equipment Views

DACS II AX 4 View

Figure 13-19 is a depiction of a DACS II AX 4. Click on a circuit pack to display an enlarged and more detailed representation of the circuit pack to the right of the view. Right-click on a circuit pack to automatically generate the PORT ALARM Report.

DACS II AX 4
Name/Release Number/
AX Model Type

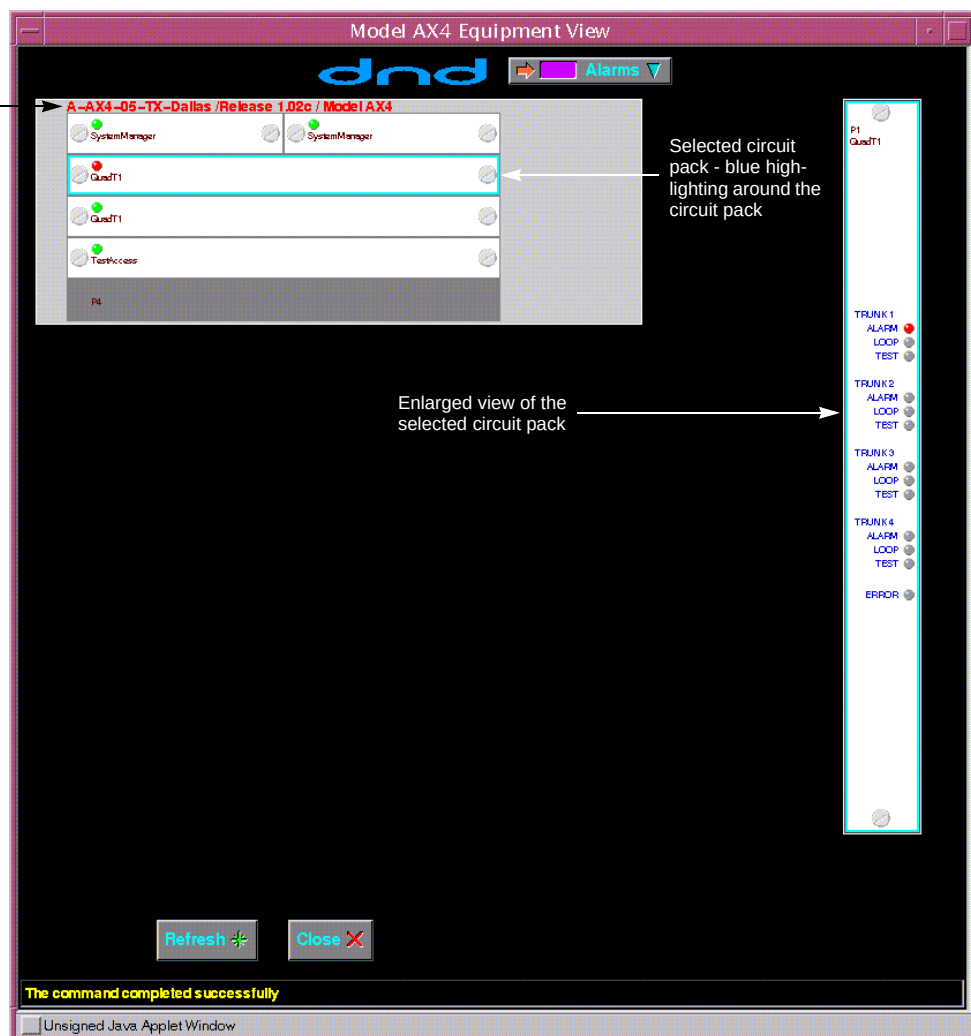


Figure 13-19. DACS II AX 4 Equipment View

SNMP Equipment Views (Continued)

DACS II AX 11 View

Figure 13-20 is a depiction of a DACS II AX 11. Click on a circuit pack to reveal an enlarged and more detailed representation of the circuit pack to the right of the view. Right-click on a circuit pack to automatically generate the PORT ALARM Report.

DACS II AX 11
Name/Release Number/
AX Model Type

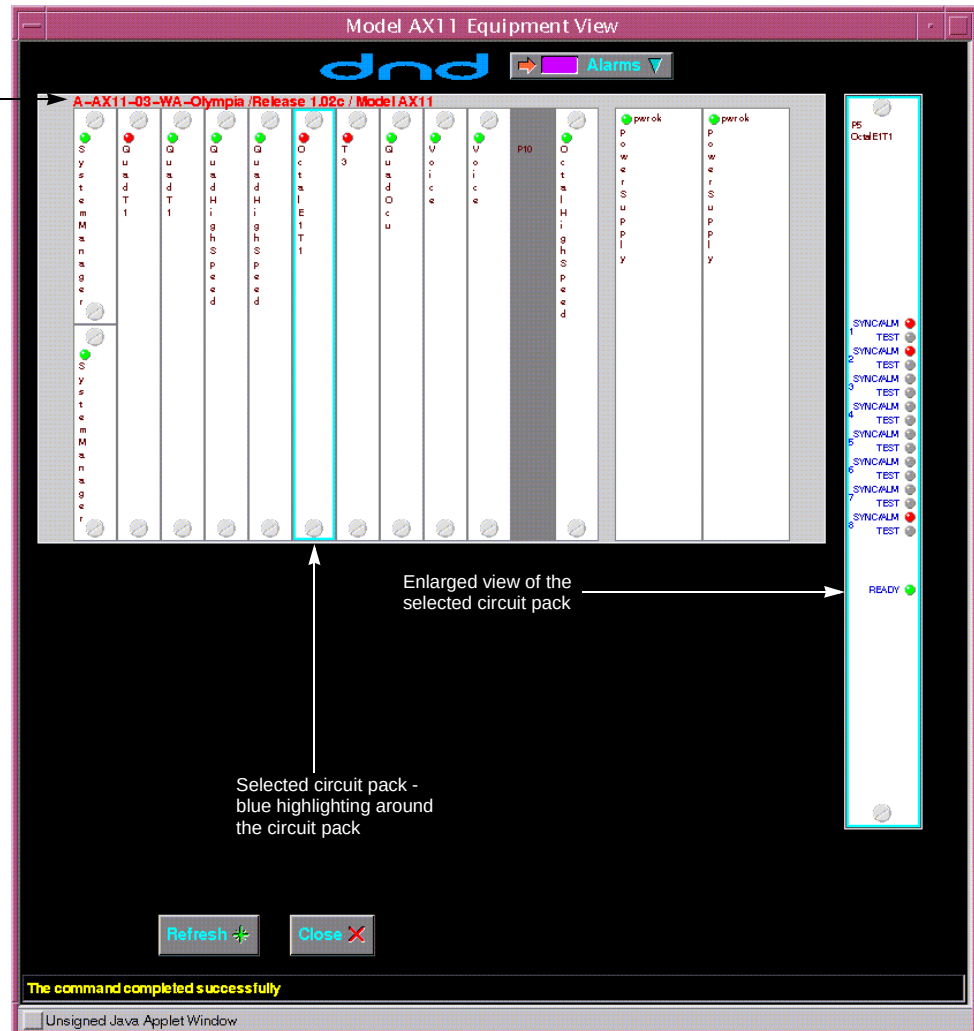


Figure 13-20. DACS II AX 11 Equipment View

SNMP Equipment Views (Continued)

AAC/IMACS Model 600 Shelf View

Figure 13-21 is a depiction of an AAC or IMACS. The Model 600 Shelf allows circuit pack loading in the front of the shelf only. Right-click on a circuit pack to automatically generate the PORT ALARM Report.

AAC/IMACS Name/
Release Number



Figure 13-21. AAC/IMACS Model 600 Shelf Equipment View

SNMP Equipment Views (Continued)

AAC/IMACS Model 800 Shelf View

Figure 13-22 is a depiction of an AAC/IMACS Model 800 Shelf. The Model 800 Shelf allows circuit pack loading in the front and back of the shelf. Right-click on a circuit pack to automatically generate the PORT ALARM Report.

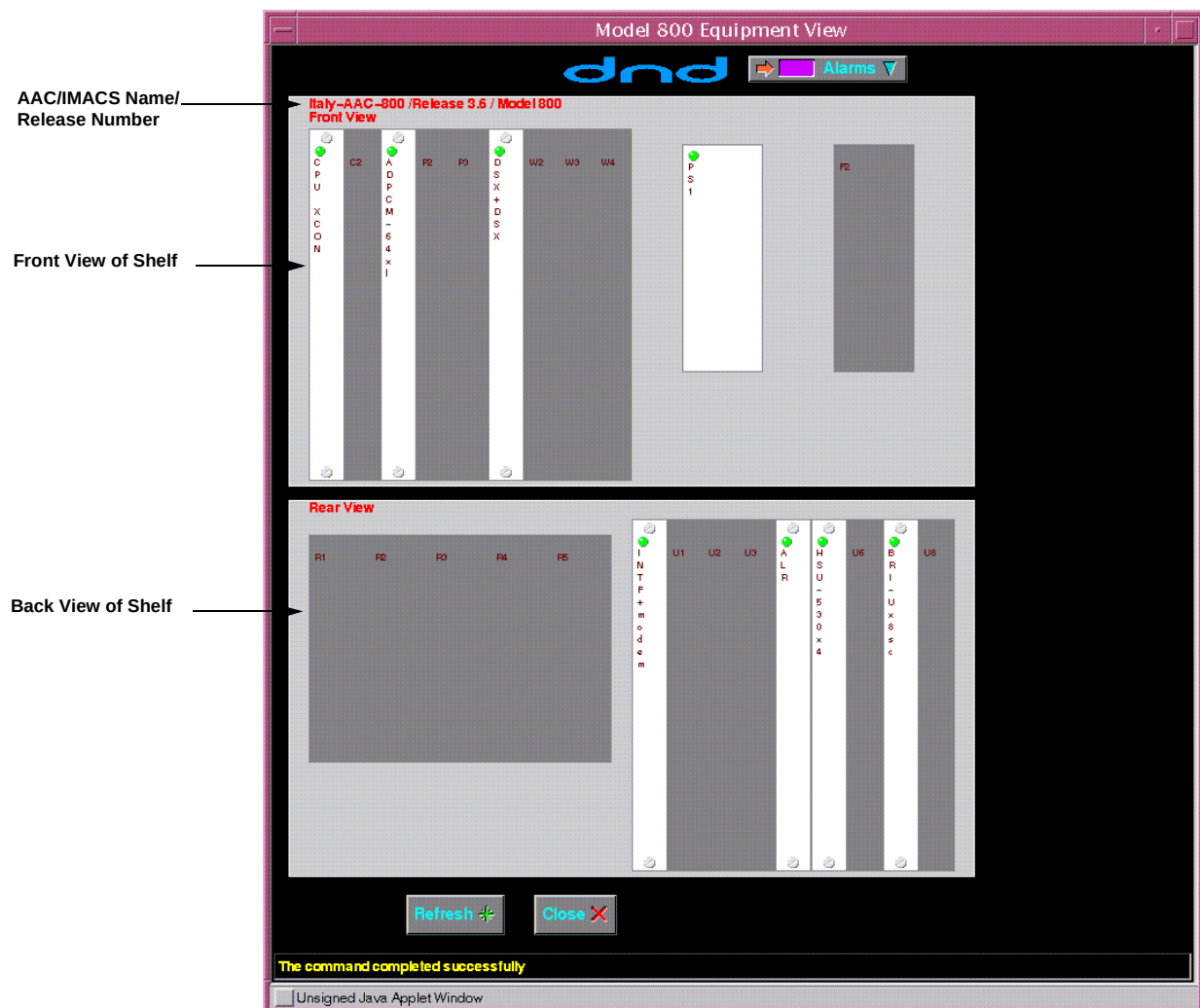


Figure 13-22. AAC/IMACS Model 800 Shelf Equipment View

SNMP Equipment Views (Continued)

AAC/IMACS Model 900 Shelf View

Figure 13-23 is a depiction of an AAC/IMACS Model 900 Shelf. Right-click on a circuit pack to automatically generate the PORT ALARM Report.

AAC/IMACS Name/
Release Number

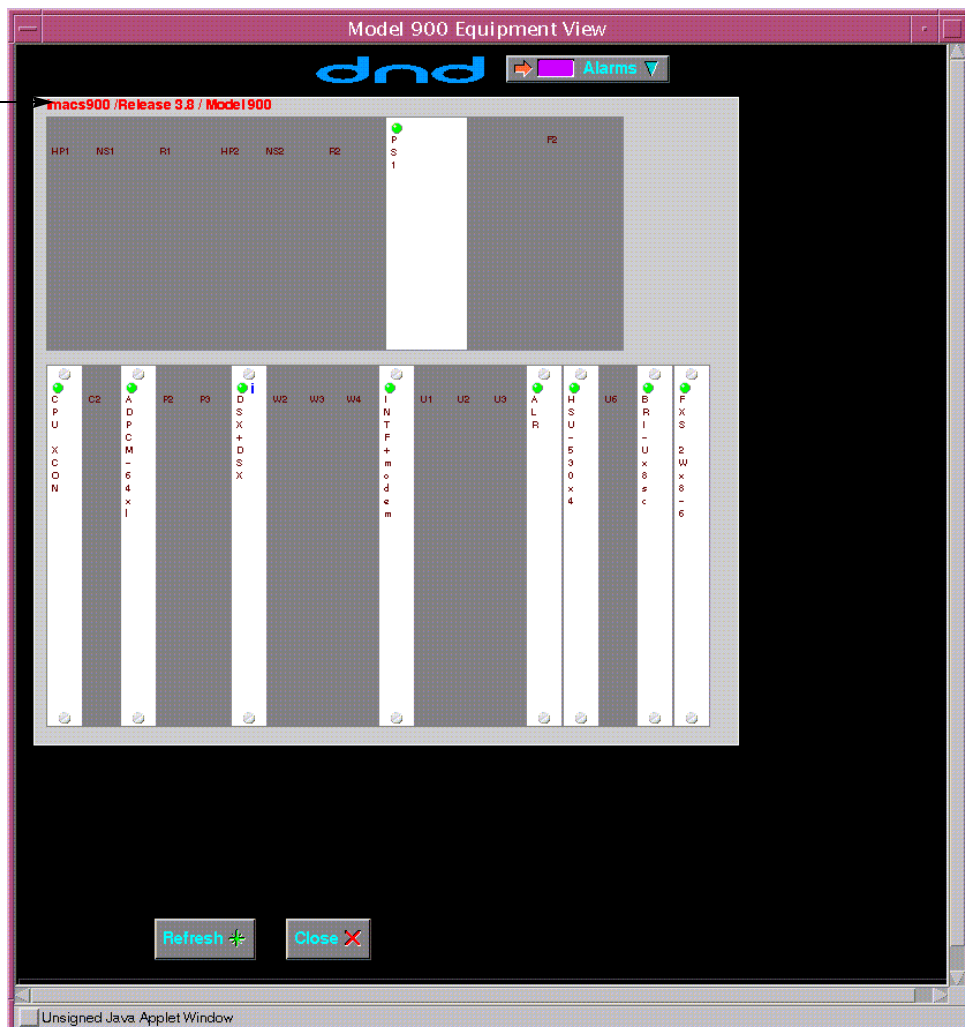


Figure 13-23. AAC/IMACS Model 900 Shelf Equipment View

Intervention Level Equipment Views

Overview

Intervention levels for alarms can be set for all DACS frames. When intervention levels are applied to alarms, they can either escalate or de-escalate the severity of an alarm, depending on how the intervention level feature is provisioned.

Setting Intervention Levels

In order for the intervention level to be seen in an equipment view, the DACS frame must be provisioned for alarm intervention. Once the DACS is provisioned for alarm intervention, the radio button field for switching between intervention level and alarm state will appear at the bottom of the equipment view.

When the equipment views are switched, a difference in alarm color will appear on circuit pack LEDs. The change in color will correspond to the intervention level settings.

For additional information on intervention levels, refer to *Chapter 5, NE Provisioning*.

The Intervention Level Views

The two equipment views associated with intervention levels are:

- **Alarm State View** - the regular equipment view without intervention levels applied
- **Intervention Level View** (default view) - the equipment view with intervention levels applied to existing alarms.

Change from one view to another by clicking the desired radio button choice in the field at the bottom of the equipment view. The intervention level settings can be seen in the high level and detailed views of the DACS frames.

Intervention Level Equipment Views (Continued)

Alarm State View

Figure 13-24 is a depiction of the Alarm State (regular alarm) view for a DACS II ISX.

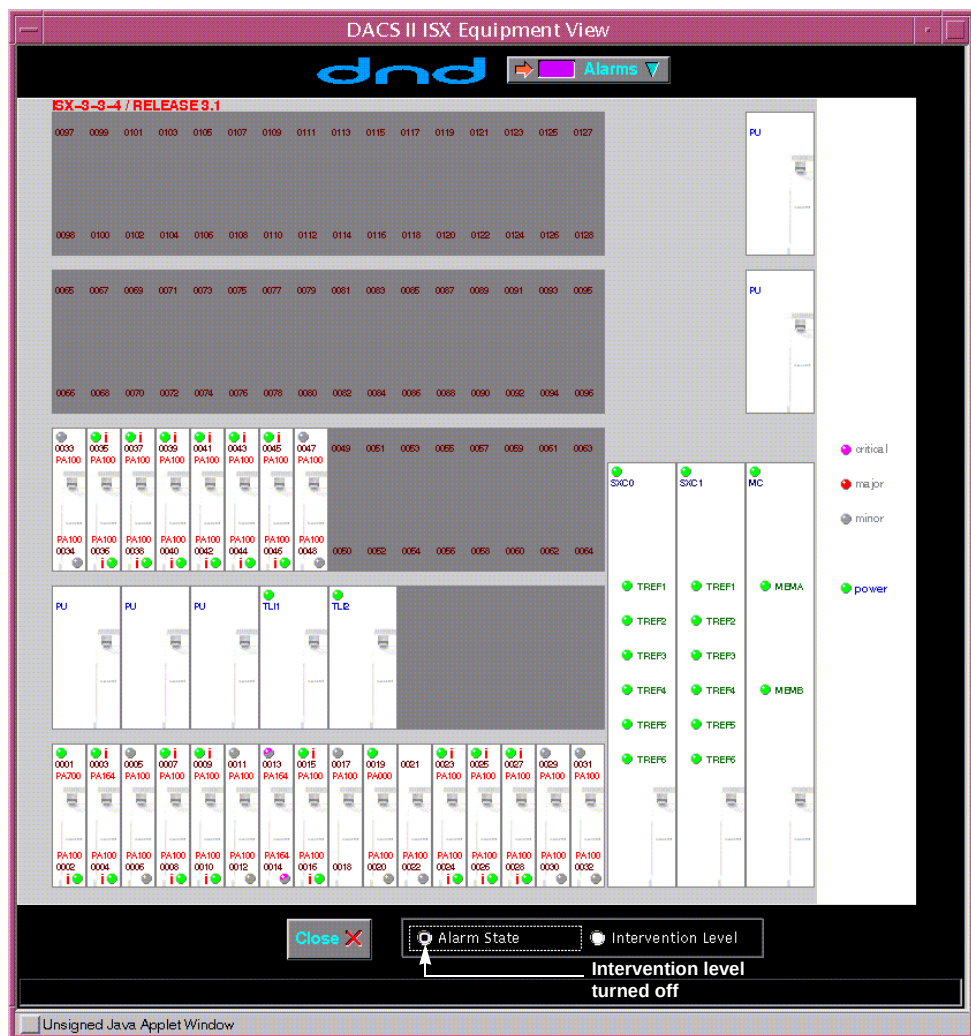


Figure 13-24. Sample Alarm State View

Intervention Level Equipment Views (Continued)

Intervention Level View

Figure 13-25 is a depiction of the Intervention Level view for a DACS II ISX. Notice that most circuit pack LEDs have either escalated in alarm severity.

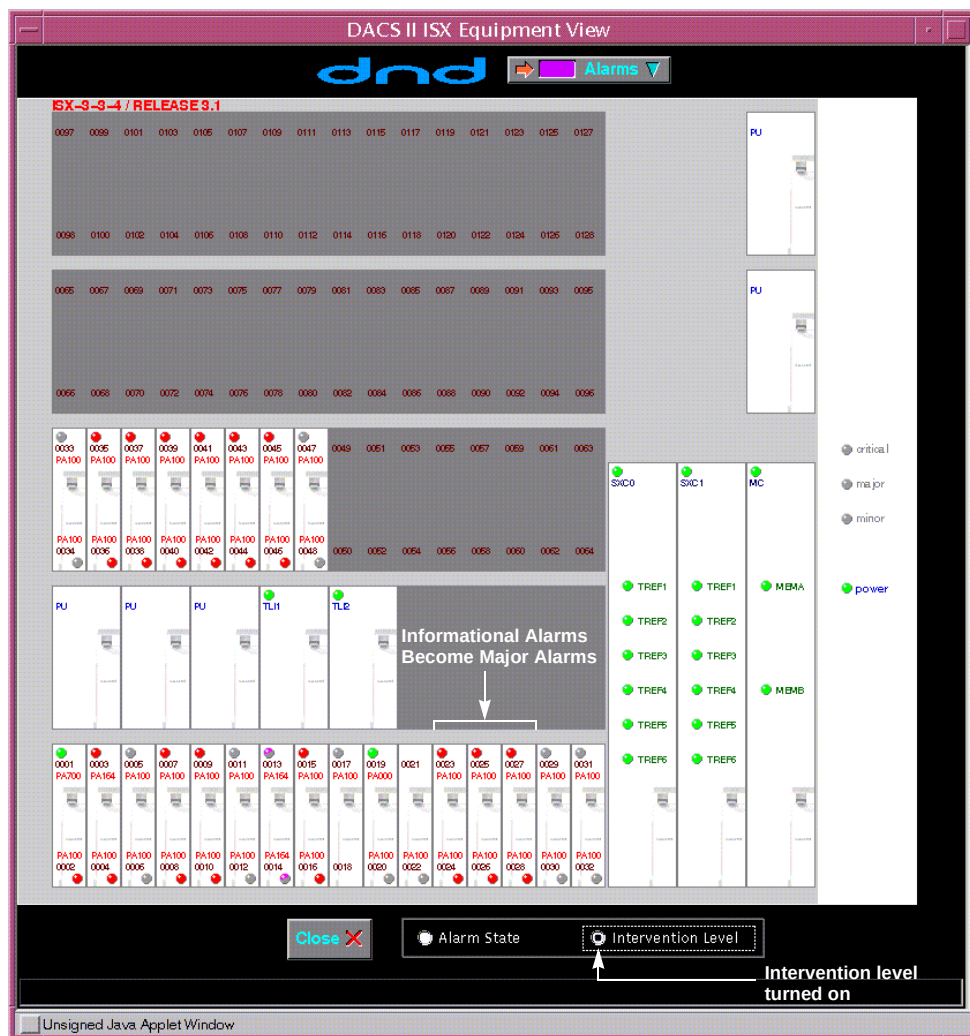


Figure 13-25. Sample Intervention Level View

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Background

Introduction

Partitioning functions are performed by system administrators using the DND GUI only. Partitioning allows the system administrator to:

- Limit the number of sites displayed on the network map for users (users can only view the sites assigned to their partition).
 - Prohibit user access into sites which are not assigned to a user's partition.
-

Objectives

This chapter provides reference information to help you perform the following:

1. Modify partition names.
 2. Assign Network Elements to partitions and unassign Network Elements from partitions.
 3. Assign users to a partition and unassign users from a partition.
-

Related tasks

For related tasks, see the following DND GUI General Task in Volume II:

- Modifying a Partition GT 14.1G
-

Related information

For related information, refer to:

- *Chapter 5, NE Provisioning*
 - *Chapter 15, User Administration.*
-

Partitioning Information

Partition Description

A partition is a collection of nodes (Network Elements). A partition is assigned a name and nodes, which can be any grouping of DACS, AAC/IMACS, DACS II AX, or "Other" nodes. The NE PARTITIONING form assigns names to partitions and nodes to a partition. The NE PARTITIONING form can assign nodes to one or more partitions. The USER ADMINISTRATION form assigns a partition to a user.

Partitioning Description

Partitioning allows the system administrator to define nodes to partitions and assign each DND user (including administrators) to a particular partition. Administrators can assign any node to any partition. A user is assigned to one partition for the following reasons:

- **Limit the sites displayed on the network map** - Users can only view the sites assigned to their partition on their network maps. This is very beneficial to users on large DND networks; making their network maps less congested.
 - **Prohibit access into sites** - Users do not have access to sites which are not assigned to their partition.
-

The Effects of Partitioning

Partitioning affects the following:

- **DND Network Map** - Only those nodes which are assigned to that partition are displayed on the network
- **DND GUI** - The Site Name choices on each of the DND GUI forms correspond to the nodes in the partition
- **DND Forms** - The Site Name and WHICH DACS? choices also correspond to the nodes in the partition.

The DND Network Map is updated for all users who are affected by the change. The GUI and Forms Interface forms are updated when those fields are refreshed, by starting or restarting the form or using the [Back](#) and [Continue...](#) buttons to refresh that field.

Partitioning Information (Continued)

Provisioning Partitions

The DND GUI provides 10 partitions (default names: *PARTITION01* through *PARTITION10*). By default, all sites are assigned to all partitions, and all users are initially assigned to *PARTITION01*. Administrators are able to *MODIFY* the partition names and element members. These partitions cannot be added or deleted, whether all of the partitions provided are used or not.

Partitioning Rules

Partitioning adheres to the following rules:

1. Users view only the groups and sites assigned to their partitions. Administrators have privileges to *MODIFY* a node assignment from the NE PROVISIONING form, or *MODIFY* a partition from the NE PARTITIONING form, or *MODIFY* the user to be assigned to another partition.



NOTE:

It is recommended that at least one partition be designed with all nodes and that partition be available to at least one user.

2. Groups are independent of partitions. If a node is a member of that partition and that node is a member of a group or group hierarchy, the group (or group hierarchy) is given on the map.
 3. Empty groups are not displayed, that is, if all nodes of a group are not part of that partition, the group (or group hierarchy) is not displayed on the network map.
 4. If an administrator changes a partition while a user is logged in, the partition update will be visible immediately by the user on the network map.
 5. If an administrator changes a partition while a user is on a form, then the partition update will be visible after the **Action** is executed.
 6. Interties appear on the network map only if they are connected to visible sites (sites assigned to the user's partition).
-

(Continued on next page)

Partitioning Information (Continued)

Partitioning Rules (Continued)

7. Some form information overlaps, and if changes are executed in one form, this change may invalidate the data in another form.

For example, if you have the NE PARTITIONING form open, it displays a set of nodes for a partition, and if you also have the NE PROVISIONING form open, it displays the partitions for a node as well. If you execute a change from the NE PARTITIONING form, the data in the NE PROVISIONING form is not automatically updated. When you attempt to execute the NE PROVISIONING form, you may receive an error that the data is out of date and you must click [Restart](#) to initialize the provisioning operation, or click [Back](#) and then [Continue...](#) to receive new form data.

8. The NE SUMMARY window is modified according to a user's partition - only sites assigned to a user's partition are displayed.
9. The following are not filtered according to a user's partition:
 - Messages that appear in the Status Summary field - status messages for Network Elements in all partitions are displayed.
 - The results of some reports that list DACS sites (for example, the DACS Frames/Links Report and the Task Schedule List Report).

Associated Partitioning Forms

There are three forms associated with partitioning functions:

- The NE PARTITIONING form
 - The USER ADMINISTRATION form
 - The NE PROVISIONING form.
-

The NE PARTITIONING Form

Sample Form

The NE PARTITIONING form is used to MODIFY the partition name and site members. Figure 14-1 shows an example of the NE PARTITIONING form.

The screenshot shows the 'NETWORK PARTITION' window with the 'dnd' logo and an 'Alarms' button. The 'Action' dropdown is set to 'Modify'. Under 'Partition Identification', the 'Network Partition Name' is 'Washington' and the 'New Partition Name' is 'Washington-DC'. An arrow points to the 'New Partition Name' field with the text 'Enter a new Partition Name'. Under 'Element Members of Partition', the 'Current Site Choices' list includes 'Argentina-AX-11', 'Brazil-CEF', 'CEF', and 'CEF-3'. To the right, there is a 'Select All Sites:' checkbox and a list of sites. An arrow points to the checkbox with the text 'Select this checkbox to select all sites in the list'. Another arrow points to the list of sites with the text 'Select Sites to assign to the Partition'. At the bottom, there are four buttons: 'Back', 'Execute', 'Restart', and 'Close'. Below the buttons, there is a section titled '? Give the partition this new name' with a text input field. The window title bar at the bottom says 'Unsigned Java Applet Window'.

Figure 14-1. Sample NE PARTITIONING Form

All users created using the DND Forms Interface are defaulted to *PARTITION01*. If *PARTITION01* is renamed, all users in *PARTITION01* will be assigned to the partition's new name. The administrator is responsible for keeping track of partition name changes; the DND system does not keep track of previous and new partition names.

The NE PARTITIONING Form (Continued)

Field Descriptions The field values for the NE PARTITIONING form are described in Table 14-1.

Table 14-1. Field Descriptions for the NE PARTITIONING Form

Field	Description
Action	(Combo box - read only) The only available Action is <i>MODIFY</i> .
Network Partition Name	(Combo box) Select the name of the partition to <i>MODIFY</i> . The choices are all 10 partition names (default and/or modified names) in the network.
New Partition Name	(Text field) Enter a new name for the partition. Must be unique. 1 through 24 characters from the set 0-9, A-Z, a-z, /, _, and -. All other characters are illegal. Blanks are not allowed within a name.
Current Site Choices	(Multi-select Combo box) Select the Network Element(s) to assign to the selected partition.
Select All Sites	(Check box) Select this box to assign ALL sites to the selected partition. The list of sites is updated after the form is executed.

The USER ADMINISTRATION Form

Sample Form

One of the functions of the DND GUI's The USER ADMINISTRATION form is to assign a user to a particular partition. Figure 14-2 displays the area on the form to perform this action.

The screenshot shows a Java applet window titled "USER ADMINISTRATION". Inside the window, there is a "dnd" logo and an "Alarms" button. Below these, there is a "User Action" dropdown menu set to "USER MODIFY". The "User Information" section includes fields for "Login Name" (cscan), "User Name" (CSCAN), "User Class" (with checkboxes for Operator, Admin, and Controller, where Controller is checked), "Printer" (CONSOLE PRINTER), "Phone" (phone), "Address" (address), and "City" (city). The "Alarm Audible" section has checkboxes for OFF and ON, with ON checked. The "UI Idle" section has checkboxes for OFF and ON, with OFF checked. The "Partition Identification" section includes a "Network Partition Name" dropdown menu, which is currently set to "AllNodes". An arrow points to this dropdown with the text "Select the Network Partition Name". At the bottom of the form, there are four buttons: "Back", "Continue...", "Restart", and "Close". Below the buttons, there is a note: "? The name of the network partition to operate on". The window title bar at the bottom says "Unsigned Java Applet Window".

Figure 14-2. Sample USER ADMINISTRATION Form

Field descriptions for this form can be found in *Chapter 15, User Administration*.

The NE PROVISIONING Form

Sample Form

When using either the *CREATE* or *MODIFY* Action on the NE PROVISIONING form, the administrator can select or change the partition assignment for the Network Element. Figure 14-3 shows the area on the form to perform this function.

The screenshot displays the 'NE PROVISIONING FORM' window. At the top, there's a title bar and a 'dnd' logo with an 'Alarms' button. The 'Action' dropdown is set to 'CREATE'. The 'Element Type' section includes checkboxes for 'DACS II' (checked), 'DACS II ISX', 'DACS II AX', 'AAC', 'IMACS', and 'Other'. The 'New Site Name' field contains 'Japan-CEF2'. The 'DACS Information' section has 'Language' set to 'MHL' (checked) and 'PDS' (unchecked), 'NPC Addressing' with 'HIER' (checked), 'EXT3' (unchecked), and 'EXT4' (unchecked), 'Generic' set to '9.0', 'Protocol' with 'X.25' (checked), 'SNIDER' (unchecked), and 'TCP/IP' (unchecked), and an empty 'Location' field. The 'DND Processing Options' section includes 'Conditional ERP' (NO checked, YES unchecked), 'Programmable Priority' (NO checked, YES unchecked), and 'Alarm Sync' set to '00'. The 'Assign to Partition(s)' dropdown is open, showing a list with 'AllNodes' selected, followed by 'California', 'Kansas', and 'NewJersey'. An arrow points to this list with the text 'Select the Network Partition Name'. At the bottom, there are buttons for 'Back', 'Continue...', 'Restart', and 'Close'. A footer bar indicates 'Unsigned Java Applet Window'.

Figure 14-3. Sample NE PROVISIONING form

Field descriptions for this form can be found in *Chapter 5, NE Provisioning*.

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Background

Introduction

A DND system administrator can have up to 125 user logins in the DND database. In addition, DND automatically supports these special logins:

- **dacsadm** - the default system administration login
- **ems** - the default DND operator login

DND can support up to 16 simultaneous login sessions, including the console login session.

Objectives

This chapter provides background information to help you perform the following:

1. Create, modify, and delete user logins
 2. Change passwords
 3. Reset passwords.
-

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Adding a User	GT 15.1G
■ Modifying User Information	GT 15.2G
■ Deleting a User	GT 15.3G
■ Changing a Password as an Operator	GT 15.4G
■ Changing a Password as an Administrator	GT 15.5G

DND Forms:

■ Adding a User	GT 15.1U
■ Changing User Information	GT 15.2U
■ Deleting a User	GT 15.3U
■ Changing a Password as an Operator	GT 15.4U
■ Changing a Password as an Administrator	GT 15.5U
■ Resetting a Forgotten Password	GT 15.6U
-

Background (Continued)

Related information

For related information, see:

- *DACS II Network Director Software Release Description*
 - *DACS II and DACS II ISX Operation and Maintenance Manuals*
-

User Logins

User Class

A login is assigned a **User Class** on the USER MANAGEMENT form. **User Class** defines which privileges are assigned to a login.

There are three user classes:

- System Administrator
- Operator
- Controller (only used by ITM-XMC when logging into the DND)

A login with system administration privileges has unrestricted access to all of the DND functions. A system administrator can add, change, or delete user information and passwords for any login.

An operator login is restricted from certain DND selections. For example, users with operator logins are restricted from the SYSTEM ADMINISTRATION and DATABASE SYNCHRONIZATION selections on the DND MAIN MENU (Forms) or from the DND Main window (GUI). In addition, operators can change their own user information (except for their **User Class** and **UI Idle** option) and passwords. They cannot change user information for any other login.

Login Ports

Before an operator can log in to DND, a system administrator must enable the asynchronous login port that the operator will be using to access DND. For information on login ports, refer to Chapter 4, System Administration.

Forgotten Passwords

If a password is forgotten, the system administrator can reset the password by performing ONE of the following:

- Following the procedures in GT 15.5G or GT 15.5U
 - Logging on to the DND console as **root** and following the procedure described in GT 15.6U.
-

DND GUI: The USER ADMINISTRATION Form

Sample Form

To access the USER ADMINISTRATION form, Click **Provisioning** located at the top of the DND USER INTERFACE window. The PROVISIONING task menu appears. Select *User Administration....* The USER ADMINISTRATION form appears. Figure 15-1 shows an example of a USER ADMINISTRATION form.

The screenshot shows a Java Applet window titled "USER ADMINISTRATION". The window has a dark background with a blue "dnd" logo and a red "Alarms" button. The "User Action" dropdown menu is set to "USER ADD". The form is divided into several sections: "User Information" with fields for "Login Name" (dacsadm), "User Name", "User Class" (Operator, Admin, Controller), "Printer" (CONSOLE PRINTER), "Phone", "Address", and "City"; "Alarm Audible" and "UI Idle" sections with "OFF" and "ON" checkboxes; "Password Information" with "New Password" and "Re-enter the password" fields; and "Partition Identification" with a "Network Partition Name" dropdown menu set to "AllNodes". At the bottom, there are "Back", "Continue...", "Restart", and "Close" buttons. A status bar at the bottom indicates "Unsigned Java Applet Window".

Figure 15-1. DND GUI: USER ADMINISTRATION Form, *USER ADD* Action

DND GUI: The USER ADMINISTRATION Form (Continued)

Field Descriptions Table 15-1 describes the fields used in the USER ADMINISTRATION form.

Table 15-1. DND GUI: Field Descriptions for the USER ADMINISTRATION Form

Field	Description
User Action	(Combo box) Mandatory. ■ <i>CHANGE PASSWORD</i> - Change the password of a user. Administrators can change passwords for all users, but Operators can only change their own passwords. ■ <i>USER MODIFY</i> - Change fields other than the Login Name and Password. To change the Login Name, <i>DELETE</i> and <i>ADD</i> the login. To change the password, use the <i>CHANGE PASSWORD</i> selection. ■ <i>USER ADD</i> - Adds a user login. ■ <i>USER DELETE</i> - Deletes a user login.
Login Name	(Text field) Mandatory. The login name by which the user will be known to the DND, and which will be required on login. Login Name may contain only two through eight alphanumeric characters. One lower-case letter is required. It may not contain control characters, punctuation marks, or spaces.
User Class	(Radio buttons) The type of login. The choices are: ■ <i>OPERATOR</i> - The user is an operator ■ <i>ADMIN</i> - The user is an administrator ■ <i>CONTROLLER</i> - (only used by ITM-XMC when logging into the DND)
Password	(Text field) Mandatory. Appears only for an Action of <i>USER ADD</i> . The password used to authenticate the user. A password must be at least six characters. It must contain at least two alphabetic and <u>one numeric</u> or <u>special</u> character. It may not contain <u>Backspace</u> or <u>Delete</u> .

Table 15-1. DND GUI: Field Descriptions for the USER ADMINISTRATION Form (Continued)

Field	Description
New Password/Re-enter the password	(Text field) Mandatory. Appear only for an Action of <i>USER ADD</i> and <i>CHANGE PASSWORD</i> . The password is used to authenticate the user. A password must be at least six characters. It must contain at least two alphabetic and <u>one numeric or special character</u> . It may not contain <u>Backspace</u> or <u>Delete</u> .
User Name	(Text field) Up to 40 alphanumeric characters including A-Z, 0-9, -, (,), period, comma, and space. The name of the person owning the login specified in Login Name .
Phone	(Text field) Up to 13 numeric characters, including 0-9, -, and space. No comma or letters allowed. The telephone number of the person cited in User Name .
Printer Name	(Combo box) Mandatory. The name of the printer to assigned for this login. The choices are the <i>CONSOLE PRINTER</i> (default) and any other printer names connected to the DND server, including the names of remote printers installed in the printcap file of Sun systems. For details, refer to Chapter 2, Getting Started. To reset the Printer Name , use a <i>CHANGE Action</i> .
Address	(Text field) Up to 20 alphanumeric characters. The address of the person cited in User Name .
City	(Text field) Up to 20 alphanumeric characters. The city of the person cited in User Name .
Alarms Audible	(Radio buttons) A switch: ■ <i>ON</i> - When an alarm occurs, an audible signal will sound at the terminal where the user is logged in. ■ <i>OFF</i> - An audible signal will not sound.
UI Idle Option	(Radio buttons - appears for administrators only) Set a threshold value for terminal idle time: ■ <i>ON</i> - Log off automatically after IDLE_THRESHOLD minutes of idle time. For details, see "Environment Variables" in Chapter 2, Getting Started. ■ <i>OFF</i> - Remain logged on until the user logs off.

DND Forms: The USER ADMINISTRATION Menu

Sample Form

Choose the USER ADMINISTRATION option from the DND Forms MAIN MENU to manage user login information or reset an operator's password. The USER ADMINISTRATION menu is shown in Figure 15-2.

The screenshot displays a terminal window titled "DND USER INTERFACE". At the top, it shows "Status:" and "Alarms:" with three alarm identifiers: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below these, the "USER ADMINISTRATION" menu is displayed, with "USER MANAGEMENT" highlighted in red. The menu also includes the option "CHANGE PASSWORD". A large rectangular box occupies the center of the screen. At the bottom of this box, it says "Press ENTER to modify user parameters." Below the box, the text "jessica: UI-09" is visible. At the very bottom of the window, there is a row of buttons: "HELP", "QUIT", "TOP MENU", and "PRINT".

Figure 15-2. DND Forms: USER ADMINISTRATION Menu

DND Forms: The USER MANAGEMENT Form

Sample Form

To access the USER MANAGEMENT form, select USER ADMINISTRATION from the DND MAIN MENU, then select USER MANAGEMENT. Figure 15-3 shows an example of a USER MANAGEMENT form.

The screenshot displays the 'DND USER INTERFACE' window. At the top, there are three status bars: 'Status:', 'Alarms: A-ISX-01-NJ-Manalapan A-ISX-02-ND-Bismarck A-ISX-03-WA-Olympia', and 'USER MANAGEMENT'. The main form area contains the following fields:

Action: <u>ADD</u>	Login Name: <u>jbarnes</u>
User Class: <u>OPERATOR</u>	Password: _____
User Name: <u>John Barnes</u>	
Phone: <u>675-5590</u>	Printer Name: <u>CONSOLE PRINTER</u>
Address: <u>256 West Park Ave.</u>	City: <u>Ocean</u>
Alarm Audible: <u>OFF</u>	UI Idle Option: <u>OFF</u>

Below the form area, there is a text entry field with the prompt 'Enter the city and state name' and the text 'jessica: UI-01'.

At the bottom of the window, there is a row of buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 15-3. DND Forms: USER MANAGEMENT Form, ADD Action

DND Forms: The USER MANAGEMENT Form (Continued)

Field Descriptions Table 15-2 describes the fields used in the USER MANAGEMENT form:

Table 15-2. DND Forms: Field Descriptions for the USER MANAGEMENT Form

Field	Description
Action	Mandatory. ■ <i>ADD</i> - Adds a user login. ■ <i>CHANGE</i> - Changes USER MANAGEMENT fields other than the Login Name and Password. To change the Login Name, <i>DELETE</i> and <i>ADD</i> the login. To change the password, use the CHANGE PASSWORD form. ■ <i>DELETE</i> - Deletes a user login.
Login Name	Mandatory. The login name by which the user will be known to the DND, and which will be required on login. Login Name may contain only two through eight alpha-numeric characters (0-9, A-Z, and a-z). One lower-case letter is required. It may not contain control characters, punctuation marks, or spaces.
User Class	The type of login. The choices are: ■ <i>OPERATOR</i> - The user is an operator ■ <i>ADMIN</i> - The user is an administrator ■ <i>CONTROLLER</i> - (only used by ITM-XMC when logging into the DND).
Password	Mandatory. Appears only for an Action of <i>ADD</i> . The password used to authenticate the user. A password must be at least six characters. It must contain at least two alphabetic and one numeric or special character. It may not contain #, @, -, Backspace , or Delete .
New Password	Mandatory. (Displayed for the CHANGE PASSWORD form.) The new password used to assign to the user. A password must be at least six characters. It must contain at least two alphabetic and one numeric or special character. It may not contain #, @, -, Backspace , or Delete .

Table 15-2. DND Forms: Field Descriptions for the USER MANAGEMENT Form (Continued)

Field	Description
User Name	Up to 40 alphanumeric characters including numbers, letters, dash, open parenthesis, closed parenthesis, period, comma, and space. The name of the person owning the login specified in Login Name .
Phone	(Text field) Up to 13 alphanumeric characters, including 0-9, -, and space. No comma or letters allowed. The telephone number of the person cited in User Name .
Printer Name	Mandatory. The name of the printer to be in effect for this login. Use the CHOICES menu to select the name. The default, <i>CONSOLE PRINTER</i> , appears in every CHOICES menu. Names of remote printers installed in the printcap file of Sun systems also will appear. For more information, refer to Chapter 2, Getting Started. To reset the Printer Name , use the <i>CHANGE Action</i> .
Address	Up to 20 alphanumeric characters. The address of the person cited in User Name .
City	Up to 20 alphanumeric characters. The city of the person cited in User Name .
Alarms Audible	A switch: ■ <i>ON</i> - When an alarm occurs, an audible signal will sound at the terminal where the user is logged in. ■ <i>OFF</i> - An audible signal will not sound.
UI Idle Option	Set a threshold value for terminal idle time: ■ <i>ON</i> - Log off automatically after IDLE_THRESHOLD minutes of idle time. For details, see "Environment Variables" in Chapter 2, Getting Started. ■ <i>OFF</i> - Remain logged on until the user logs off. The UI IDLE Option exists for administrators only.

DND Forms: The CHANGE PASSWORD Form

Sample Form

To access the CHANGE PASSWORD form, select USER ADMINISTRATION from the DND MAIN MENU, then select CHANGE PASSWORD. Figure 15-4 shows an example of a USER MANAGEMENT form.

The screenshot displays a window titled "DND USER INTERFACE". Inside the window, the text "Status:" and "Alarms:" is visible on the left. The main area is titled "PASSWORD CHANGE FORM". Below this title, there are two input fields: "Login Name: jbarnes" and "New Password: _____". At the bottom of the window, there is a status bar that reads "Enter the login name" and "jessica: UI-03". Below the status bar, there are several buttons: "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

**Figure 15-4. DND Forms: USER ADMINISTRATION, CHANGE
PASSWORD Form**

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Background

Introduction

When generating a report, you can specify search criteria for the records that are to be extracted from the DND database. The search criteria restrict the report to records that have certain values in certain fields.

DND GUI Information

With the exception of the intertie reports, the DND reports can be accessed using the **Reports** task button. DND allows you to generate reports containing data from the DND database. The reports are displayed in a separate Netscape window and can be printed with the **PRINT** option from Netscape's **FILE** pull-down menu list.



NOTE:

TIP: To increase or decrease the font size in the Netscape window, select the **Edit --> Preferences** options from the Netscape task bar to display the PREFERENCES window. Once in the window, select the **Fonts --> Fixed width font** folders and change the desired font options.

DND Forms Information

Use the REPORT OPERATIONS MENU to generate reports containing data from the DND database. The reports can be displayed on screen, printed or written to a DOS diskette. The DOS diskette option presumes you will access the diskette from a DOS system. No provision is made for recovering the report from the diskette in the DND.

Objectives

This chapter provides background information to help you generate various types of reports.

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

- Generating a Report GT 16.1G
- Printing a Report GT 16.2G

DND Forms:

- Generating Reports GT 16.1U
 - Displaying and Printing Reports GT 16.2U
 - Transferring Reports To DOS Diskette GT 16.3U
 - Creating a New Report Format GT 16.4U
 - Modifying a Report Format GT 16.5U
 - Renaming a Report Format GT 16.6U
 - Deleting a Report Format GT 16.7U
 - Generating an Alarm Query Report GT 16.8U
-

Using Report Forms

Report Navigation DND GUI Navigation

Report forms do not have as many different stages as the Provisioning forms. When the form is accessed, all of the fields needed to generate the report will appear, except for the Alarm Log and NPC Report. When the form appears, select the field values you wish to include in the report.

To navigate through a report, use any of the following:

- The up and down arrows on the bottom of the window to move up or down the screen
- The left and right scroll arrows on the right of the window to move across the window
- The Pg Up or Pg Dn buttons on your keyboard.

When finished entering field values, clicking [Continue...](#) will display the fields in read-only mode for a final verification. Click [Execute](#) to generate the report. The report will appear in a separate Netscape window. If desired, you can open another report form and fill it out while the previous report is generating.

DND Forms Navigation

In DND Forms, you can move through the report using [TOPPAGE](#), [LASTPAGE](#), [NEXTPAGE](#), and [PREVPAGE](#), or by entering the page number in the **Display Page** field. Reports sent to the printer are also paged, but with a different page size than is used on the screen.

Metacharacters

In text fields, you can use wild-card abbreviations (metacharacters) as follows:

- * stands for any number of any alphanumeric characters (including none) at that position in the string.
- ? stands for a single occurrence of any single character at that position in the string.

For example, *AB5** finds AB544, AB54, AB5, AB55D, etc. *ABC?5* finds ABC45, ABCD5, etc., but not ABC or ABC5.

Using Report Forms (Continued)

Creating and Customizing Report Formats

Pre-defined formats are supplied for DND GUI and DND Forms reports. You may also create and edit specialized formats which appear as **Available Formats** choices. This is performed using the DND Forms Interface. When you create a specialized format, you specify which data items will be shown in the report and how they are arranged. For more information, see Appendix A, Summary of Fields for Customized Reports.

Several fixed formats are also supplied that cannot be customized. For instance, it is not possible to modify or customize the DND Forms AUDIT/ SYNCHRONIZATION RESULTS report.

DND Forms: Report Operations Menu

Sample Menu

Select REPORT OPERATIONS from the DND Forms MAIN MENU. The REPORT OPERATIONS MENU is displayed, as shown in Figure 16-1.

```

DND USER INTERFACE
Status:
Alarms:      A-CEF-01-NJ-Manalapan  A-CEF-02-ND-Fargo  A-CEF-03-WA-Olympia
              REPORT OPERATIONS MENU

-CIRCUITS
NPCS
CHANNELS
ALTRUTES/PREEMPTIONS
OUTAGES
TEST PORT
TEST ACCESS
FRAMES/LINKS
USER ADMINISTRATION
NPC ALARMS
CIRCUIT ALARMS
ALARM LOG
AUDIT/SYNCHRONIZATION RESULTS
NPC ROLL RESULTS
ECHOED RESPONSE PROCESSING

TASK SCHEDULE LIST
TASK SCHEDULE RESULTS
LOST RESPONSE LOG
HISTORY LOG
SCRIPT LOG
DISPLAY LAST GENERATED REPORT
EDIT CUSTOM REPORT FORMAT
ALARM QUERY
DISPLAY ALARM QUERY
RECONFIGURATION SUB-MENU
ESTABLISHED DS0 CHANNELS
SUBRATE CIRCUITS
COMMON EQUIPMENT ALARMS
24-HOUR PERFORMANCE
24-HOUR PM LOG

Press ENTER to specify report search criteria.
                                jessica: UI-03
HELP  QUIT  TOP MENU  PRINT

```

Figure 16-1. REPORT OPERATIONS MENU



NOTE:

Some report options only appear on the REPORT OPERATIONS MENU if the related DND feature is activated, as shown in Table 16-1.

Table 16-1. DND Special Report Options

Report Option	DND Feature
ESTABLISHED DS0 CHANNELS	X.50 Subrate
SUBRATE CIRCUITS	X.50 Subrate
24-HOUR PERFORMANCE	24-Hour Performance Monitoring
24-HOUR PM LOG	24-Hour Performance Monitoring

DACS Alarm Log Report

Description

The ALARM LOG reports all DACS alarms received by the DND. The selection criterion is by **Site Name**. The three types of ALARM LOG reports are:

- **Facility** - Displays the alarms which relate to the facility terminating units (NPCs)
 - **Equipment** - Displays the alarms which relate to the common equipment
 - **All** - Displays both facility and Equipment related alarms
-

DACS Alarm Log Report (Continued)

DND GUI: Sample Report Form Figure 16-2 displays a sample DACS ALARM LOG Report form.

Figure 16-2. DND GUI: Sample DACS ALARM LOG Report Form - ALL Alarm Types

Different fields will appear on the form depending on the selection in the **Which Alarm Type:** field.

DACS Alarm Log Report (Continued)

DND Forms: Sample Report Form

Figure 16-3 displays a sample ALARM LOG Report form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The main content area is titled "ALARM LOG SEARCH CRITERIA". It contains the following fields and values:

- Status:
- Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
- Site Name: A-CEF-01-NJ-Manalapan Which Log: CURRENT
- Severity: CR
- Alarm Date: < 09 Mar 99 Time: > 10:15:00
- Alarm Summary: _____ Alarm State: DMA
- For NPC Alarms: Number (Hier): 1 (Ext): _____
NPC ID: _____
FE Site: _____
Facility Alarm Type: _____ Threshold Name: _____
- For Equipment Alarms: Side: _____ Unit: _____ Sub Unit: _____
- NE Alarm Date: _____ NE Time: _____:____:____
- Enter search character '<' or '>', or leave blank
- _____ jessica: UI-03

At the bottom, there is a row of buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 16-3. DND Forms: Sample ALARM LOG Report Form

DACS Alarm Log Report (Continued)

Field Descriptions The DACS/ALARM LOG Report form fields are described in Table 16-2.

Table 16-2. Field Descriptions for the DACS/ALARM LOG Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select an ALARM LOG Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>ALARMS</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI only:</i> Which Alarm Type	(Radio buttons) Select the type of alarm to display in the report. The choices are: ■ All - Displays all DACS alarms ■ Facility - Displays NPC related alarms ■ Equipment - Displays common equipment related alarms
<i>GUI and Forms:</i> Which Log	(Radio buttons) Select the log you want to retrieve alarm data from. The choices are: ■ CURRENT - The current database ■ BACKUP - The history database
<i>GUI:Date/NE Date</i> <i>Forms: Alarm Date/</i> NE Alarm Date	(Combo boxes) Select the date criteria for the report. The Date fields are: ■ Day - Select the day (<i>01</i> through <i>31</i>) ■ Month - Select the month (<i>Jan</i> through <i>Dec</i>) ■ Year - Select the year (<i>1990</i> through <i>2037</i>)

**Table 16-2. Field Descriptions for the DACS/ALARM LOG Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (Date/NE Date) Range	(Radio buttons) Select the Date range for the report. The choices are: ■ = - (<i>GUI only</i>) Displays alarms which occurred ON the Date ■ > - Displays alarms which occurred AFTER the Date ■ < - Displays alarms which occurred BEFORE the Date
<i>GUI and Forms:</i> Time/NE Time	(Combo boxes) Select the time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)
<i>GUI and Forms:</i> (Time/NE Time) Range	(Radio buttons) Select the time range. The choices are: ■ = - (<i>GUI only</i>) Displays alarms which occurred ON the Time ■ > - Displays alarms which occurred AFTER the Time ■ < - Displays alarms which occurred BEFORE the Time
<i>GUI: Alarm Severity Forms: Severity</i>	(Combo box) Select the alarm severity to display in the report. The choices are: ■ * - Displays all alarm severities ■ CR - Displays critical alarms ■ MAJ - Displays major alarms ■ MIN - Displays minor alarms ■ INF - Displays informational alarms ■ CLR - Displays idled alarms
<i>GUI and Forms:</i> Alarm Summary	(Text field) Enter the alarm summary matching information. Unless the exact Summary string is known, it is best to use wild card searches for this field (i.e. *CCN*).

**Table 16-2. Field Descriptions for the DACS/ALARM LOG Report Form
(Continued)**

Field	Description
<i>GUI:</i> NPC Specifier/NPC <i>Forms: Number</i>	(Radio buttons/Text field) Select the NPC in which to display alarms. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the range criteria of NPCs in which display alarm report information. The choices are: ■ = - (<i>GUI only</i>) Displays NPC alarms for NPC numbers EQUAL to the NPC specified ■ > - Displays NPC alarms for NPC numbers GREATER than the NPC specified ■ < - Displays NPC alarms for NPCs numbers LESS than the NPC specified
<i>GUI and Forms:</i> Facility Alarm Type	(Combo box - displayed only if Facility is selected in the Alarm Type field.) Select the facility alarm type to display in the report. The choices are: ■ * - All facility alarm types ■ A - Primary AIS; i.e., Alarm Indication Signal received in all 32 time slots ■ B - BER: Bit Error Rate detected in received signal ■ C - LCMA: Loss of CRC4 Multiframe Alignment in TS0 ■ E - RBER: Remote Bit Error Rate detected in Bit 4 of TS0 ■ F - LOF PBF: Loss Of Frame Primary Block Failure

Table 16-2. Field Descriptions for the DACS/ALARM LOG Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> Facility Alarm Type, Continued	■ <i>I</i> - RAIS: Remote AIS detected in Bit 4 of TS0 ■ <i>L</i> - LMA: Loss of Multiframe Alignment in CAS TS16 ■ <i>M</i> - R16: RAI received in Bit 6 of Frame 0 of TS16 ■ <i>R</i> - LOS PBF: Loss Of Signal type Primary Block Failure, or Primary Block Alarm (PBA) ■ <i>S</i> - SFI: Synchronization Failure Indication in Bit 5 of TS0 ■ <i>V</i> - A16: AIS received in CAS TS16 ■ <i>X</i> - EER: Excessive Error Rate ■ <i>Y</i> - RAI: Remote Alarm Indication received in Bit 3 of NFW of TS0
<i>GUI and Forms:</i> Alarm State	(Combo box field) Select the alarm state to display in the report. The choices are: ■ <i>*</i> - All alarm states ■ <i>DMA</i> - Deferred Maintenance Alarm Minor ■ <i>MI</i> - Maintenance Information Alarm ■ <i>PMA</i> - Prompt Maintenance Alarm Minor ■ <i>PMC</i> - Prompt Maintenance Alarm Critical
<i>GUI: Far End Site</i> <i>Forms: FE Site</i>	(Combo box - displayed only if Facility is selected in the Alarm Type field.) Select the name of the DACS at the Far End.
<i>GUI and Forms: Side</i>	(Combo box field - displayed only if Equipment is selected in the Alarm Type field.) Select the unit side (<i>0</i> or <i>1</i>) to display alarms for. <i>*</i> indicates both sides.
<i>GUI and Forms: Unit</i>	(Combo box - displayed only if Equipment is selected in the Alarm Type field.) Select the DACS II unit (<i>01</i> through <i>16</i> , <i>A</i> , and <i>B</i>) to display alarms for.

**Table 16-2. Field Descriptions for the DACS/ALARM LOG Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (Unit) Range	(Radio buttons - displayed only if Equipment is selected in the Alarm Type field.) Select the unit range criteria in which to display alarms for. The choices are: ■ = - (<i>GUI only</i>) Displays alarms for units EQUAL to the number of the Unit selected ■ > - Displays alarms for units GREATER than the number of the Unit selected ■ < - Displays alarms for units LESS than the number of the Unit selected
<i>GUI and Forms:</i> Sub Unit	(Combo box - displayed only if Equipment is selected in the Alarm Type field.) Select the sub unit number (if available) for the Unit selected.
<i>GUI and Forms:</i> (Sub Unit) Range	(Radio buttons - displayed only if Equipment is selected in the Alarm Type field.) Select the sub unit range criteria in which to display alarms for. The choices are: ■ = - (<i>GUI only</i>) Displays alarms for units EQUAL to the number of the Sub Unit selected ■ > - Displays alarms for units GREATER than the number of the Sub Unit selected ■ < - Displays alarms for units LESS than the number of the Sub Unit selected

DACS Alarm Log Report (Continued)

Sample ALARM LOG Report

Figure 16-4 displays a sample ALARM LOG Report.

```
09 Mar 1999 11:18:39
-----A-CEF-01-NJ-Manalapan-----ALARM LOG-----ALARMS-----
Date Time      Sev Summary          NPC   Type  Threshold Un  S Sub Fld1 Fld2
09Mar 11:18:13 CLR THRES IDLE      02201      15MIN
09Mar 11:03:49 INF THRES ALARM      02201      UAS_15mn
09Mar 11:03:13 CLR THRES IDLE      02201      15MIN
09Mar 10:48:47 INF THRES ALARM      02201      UAS_15mn
09Mar 10:48:13 CLR THRES IDLE      02201      15MIN
09Mar 10:33:46 INF THRES ALARM      02201      UAS_15mn
```

Figure 16-4. Sample DACS/ALARM LOG Report

Circuit Alarm Report

Description

The CIRCUIT ALARM Report form states the values of various fields for circuits that have as an end point an NPC in alarm. The fields map mainly to the CIRCUIT PROVISIONING form. One format is provided for alarms that identifies the NPC and channel information of the circuit in alarm.

Circuit Alarm Report (Continued)

DND GUI: Sample Report Form Figure 16-5 displays a sample CIRCUIT ALARM Report form.

The screenshot shows a Java Applet window titled "CIRCUIT ALARM SEARCH CRITERIA". The window has a dark background with a "dnd" logo and a "Alarms" button. The form is organized into several sections:

- SITE AND FORMAT**: Includes "Site Name" (dropdown menu with "CEF" selected), "Available Formats" (dropdown menu with "ALARMS" selected), and "Report Title" (text field).
- NPC Search Information**: Includes "NPC" (dropdown menu) and "Range" (checkboxes for "=", ">", "<").
- CHANNELS**: Includes "Channel" (text field) and "Range" (checkboxes for "=", ">", "<").
- Alarm Search Information**: Includes "Alarm State", "Service State", and "Termination State" (all dropdown menus).
- Used By**: Includes "Circuit ID", "Ckt Class", "Trunk Conditioning", "Customer Name", "Status", and "Insertion Word" (all text fields or dropdown menus).
- Connecting To**: Includes "NPC" (dropdown menu) and "Range" (checkboxes for "=", ">", "<").
- Alarm Search Information**: Includes "Alarm State", "Service State", and "Termination State" (all dropdown menus).

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with an 'X' icon). The status bar at the bottom of the window reads "Unsigned Java Applet Window".

Figure 16-5. DND GUI: Sample CIRCUIT ALARM Report Form

Circuit Alarm Report (Continued)

DND Forms: Sample Report Form

Figure 16-6 displays a sample CIRCUIT ALARM Report form.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:' with three alarm identifiers: 'A-CEF-01-NJ-Manalapan', 'A-CEF-02-ND-Fargo', and 'A-CEF-03-WA-Olympia'. Below this is a section titled 'CIRCUIT ALARMS SEARCH CRITERIA' enclosed in a box. Inside this box, the 'Site Name' is 'A-CEF-01-NJ-Manalapan'. The 'NPC ID' section includes 'NPC Number (Hier): 02202 (Ext):', 'Service State: 00S', 'Alarm State: MAJ', and 'Termination State:'. The 'Used By:' section includes 'Ckt ID:', 'Status:', 'Class:', 'Customer Name:', 'TC:', and 'IW:'. The 'Connecting To:' section includes 'NPC ID:', 'NPC Number (Hier):', 'Service State: 00S', 'Alarm State: LOS', and 'Termination State: TLA'. Below the box, it says 'Enter the service state.' followed by 'jessica: UI-03'. At the bottom, there is a row of buttons: 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 16-6. DND Forms: Sample CIRCUIT ALARM Report Form

Circuit Alarm Report (Continued)

Field Descriptions The field values for the CIRCUIT ALARM Report form are described in Table 16-3.

Table 16-3. Field Descriptions for the CIRCUIT ALARM Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select a Circuit Alarm Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>ALARMS</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI: NPC Specifier/ NPC</i> <i>Forms: NPC Number/ NPC ID</i>	(Radio buttons) Select the NPC of one side of the circuit in which to display alarms for. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the range criteria of NPCs of the circuit in which display alarm report information for. The choices are: ■ = - (<i>GUI only</i>) Displays circuit alarms where one side of the circuit has an NPC number EQUAL to the NPC specified ■ > - Displays circuit alarms where one side of the circuit has an NPC number GREATER than the NPC specified ■ < - Displays circuit alarms where one side of the circuit has an NPC number LESS than the NPC specified
<i>GUI: Channel</i> <i>Forms: Ch</i>	(Text field) Enter the NPC channel number, 0-31 for CEPT or 1-24 for NAS. This field is displayed for contiguous or alternating circuits. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

**Table 16-3. Field Descriptions for the CIRCUIT ALARM Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (Channel) Range	(Radio buttons) Select the range criteria of channels in which display report information. The choices are: ■ = - Displays alarms for circuits with the channel number EQUAL to the Channel specified ■ > - Displays alarms for circuits with channel numbers GREATER than the Channel specified ■ < - Displays alarms for circuits with channel numbers LESS than the Channel specified
<i>GUI and Forms:</i> Alarm State	(Combo box) Select the circuit alarm state to display. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> Service State	(Combo box) Select the service state to display. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> Termination State	(Combo box) Select to display circuits with ONE of the following termination states: ■ * - All termination states ■ TLR - Terminate and leave released ■ TLA - Terminate and leave active
<i>GUI: Circuit ID</i> <i>Forms: (Used By)</i> Ckt ID	(Text field) Enter the circuit name to receive a report for a particular circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Customer Name	(Text field) Enter the customer name; for specifying a particular customer.
<i>GUI and Forms:</i> Status	(Combo box) Select the circuit status to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

**Table 16-3. Field Descriptions for the CIRCUIT ALARM Report Form
(Continued)**

Field	Description
<i>GUI: Ckt Class</i> <i>Forms: Class</i>	(Combo box) Select to display circuits with a circuit class of ONE of the following: ■ <i>FDX: FULL DUPLEX</i> ■ <i>HDX: HALF DUPLEX</i> ■ <i>BBL: BACKBONE LEG</i> ■ <i>BRD: BROADCAST LEG</i> ■ <i>DMB: DIGITAL MPT BRIDGE</i> ■ <i>BKB: BCON BACKBONE</i> ■ <i>LEG: BCON TRIBUTARY</i>
<i>GUI: Trunk Conditioning</i> <i>Forms: TC</i>	(Combo box) Select the Trunk Conditioning to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Insertion Word</i> <i>Forms: IW</i>	(Combo box) Select the Insertion Word to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(Connecting To) <i>GUI: NPC Specifier/ NPC</i> <i>Forms: NPC Number/ NPC ID</i>	(Radio buttons/Text field) Select the NPC of the other side of the circuit in which to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Connecting To - NPC) Range	(Radio buttons) Select the range criteria of NPCs of the circuit in which to display alarm report information. The choices are: ■ = - Displays circuit alarms where one side of the circuit has an NPC number EQUAL to the NPC specified ■ > - Displays circuit alarms where one side of the circuit has an NPC number GREATER than the NPC specified ■ < - Displays circuit alarms where one side of the circuit has an NPC number LESS than the NPC specified

Table 16-3. Field Descriptions for the CIRCUIT ALARM Report Form (Continued)

Field	Description
<i>Forms:</i> (Connecting To) Ch	Enter the NPC channel number, 0-31 for CEPT or 1-24 for NAS. This field is displayed for contiguous or alternating circuits. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Connecting To) Alarm State	(Combo box) Select the circuit Alarm State to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (Connecting To) Service State	(Combo box) Select the Service State to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (Connecting To) Termination State	(Combo box) Select to display circuits with ONE of the following termination states: ■ * - All termination states ■ TLR - Terminate and leave released ■ TLA - Terminate and leave active

Sample CIRCUIT ALARM Report

Figure 16-7 displays a sample CIRCUIT ALARM Report.

```

09 Mar 1999 11:56:38
-----A-CEF-05-TX-Dallas-----CIRCUIT ALARMS-----ALARMS-----
Customer      Circuit_ID      NPC   Alm   T_NPC Alm   BW
              215-213          02215 INFO 02213 NONE 01
              ckt2           02215 INFO 02218 NONE 01

```

Figure 16-7. Sample CIRCUIT ALARM Report

NPC Alarm Report

Description

The NPC ALARM Report form states the values of various fields for NPC alarms. The fields map mainly to the NPC PROVISIONING form. One format is provided for ALARMS that identifies the NPC and lists **Service State**, **Alarm State** and **Alarm Aging** information.

DND GUI: Sample Report Form

Figure 16-8 displays a sample NPC ALARM Report form.

The screenshot shows a Java applet window titled "NPC ALARM SEARCH CRITERIA". The interface includes a "dnd" logo and a dropdown menu currently set to "Alarms". The form is organized into several sections:

- SITE AND FORMAT:** Contains a "Site Name" dropdown menu (set to "CEF"), an "Available Formats" dropdown menu (set to "ALARMS"), and a "Report Title" text input field.
- NPC Search Information:** Includes an "NPC" section with "NPC Specifier" (radio buttons for ID, Hier, Extd), "NPC Type" (text input), "Insertion Word (IW)" (text input), and "Range" (checkboxes for =, >, <). There is also a "Range" section with checkboxes for =, >, <.
- Alarm Search Information:** Includes "Alarm State", "Service State", and "Alarm Severity" (all dropdown menus), and "Alarm Aging" (text input) and "Range" (checkboxes for =, >, <).
- NFS:** A text input field.
- Far End Site:** A text input field.

At the bottom of the form are three buttons: "Continue ...", "Restart", and "Close". The status bar at the bottom of the window reads "Unsigned Java Applet Window".

Figure 16-8. DND GUI: Sample NPC ALARM Report Form

NPC Alarm Report Form (Continued)

DND Forms: Sample Report

Figure 16-9 displays a sample NPC ALARM Report form.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:' with three active alarms: 'A-CEF-01-NJ-Manalapan', 'A-CEF-02-ND-Fargo', and 'A-CEF-03-WA-Olympia'. Below this is the 'NPC ALARMS SEARCH CRITERIA' section. The 'Site Name' is set to 'A-CEF-01-NJ-Manalapan'. The 'NPC Number (Hier):' is '02201' and '(Ext):' is blank. The 'NPC ID' is represented by five dashes. The 'Type' and 'IW' fields are also blank. The 'Alarm State' is 'CGA', 'Alarm Aging' is blank, and 'Service State' is 'OOS'. The 'Alarm Severity' is 'MIN'. The 'NFS' and 'FE Site' fields are blank. At the bottom of the form, there is a prompt 'Enter site name:'. Below the form, the user 'jessica' is logged in as 'UI-03'. A menu bar at the very bottom contains the following options: 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 16-9. DND Forms: Sample NPC ALARM Report Form

NPC Alarm Report Form (Continued)

Field Descriptions The field values for the NPC ALARM Report form are described in Table 16-4.

Table 16-4. Field Descriptions for the NPC ALARM Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select an NPC Alarm Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>ALARMS</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI: NPC Specifier/ NPC</i> <i>Forms: NPC Number/ NPC ID</i>	(Radio buttons/Text field) Select the NPC to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the range criteria of NPCs in which display in the report. The choices are: ■ = - Displays alarms for an NPC with a number EQUAL to the NPC specified ■ > - Displays alarms for NPCs with numbers GREATER than the NPC specified ■ < - Displays alarms for NPCs with numbers LESS than the NPC specified
<i>GUI: NPC Type</i> <i>Forms: Type</i>	(Text field) Enter the NPC Type (of the form <i>ABxyz</i>) to display this particular type of NPC in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI: Insertion Word</i> <i>Forms: IW</i>	(Text field) Enter the Insertion Word to display this particular type of NPC in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> Alarm State	(Combo box) Select the NPC Alarm State to display in the report. For additional information, refer to the Field Description tables in Chapter 8: NPC Provisioning.

Table 16-4. Field Descriptions for the NPC ALARM Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> Service State	(Combo box) Select the Service State to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> Alarm Severity	(Combo box) Select the alarm severity to display in the report. The choices are: ■ * - Displays all alarm severities ■ CR - Displays critical alarms ■ MAJ - Displays major alarms ■ MIN - Displays minor alarms ■ INF - Displays informational alarms ■ CLR - Displays idled alarms
<i>GUI: Alarm Age</i> <i>Forms: Alarm Aging</i>	(Text field) Select the Alarm Age to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (Alarm Age) Range	(Radio buttons) Select the alarm age criteria to display on the report. The choices are: ■ = - Display NPCs with an alarm age EQUAL to the Alarm Age specified ■ > - Display NPCs with alarm ages GREATER than the Alarm Age specified ■ < - Display NPCs with alarm ages LESS than the Alarm Age specified
<i>GUI: NFW</i> <i>Forms: NFS</i>	(Text field) Select the NFW value to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI: Far End Site</i> <i>Forms: FE Site</i>	(Text field) Enter the name of the DACS at the Far End.

NPC Alarm Report Form (Continued)

Sample NPC ALARM Report

Figure 16-10 displays a sample NPC ALARM Report.

```
09 Mar 1999 12:24:49
-----A-CEF-01-NJ-Manalapan-----NPC ALARMS-----ALARMS-----
NPC_ID      NPC  Svc_St Type  Sev Alm_St Aging
02201NPC001 02201 IS    PA164 MAJ PBA  0000
02205NPC001 02205 OOS   PA164 MAJ OOS  0000
NPC02215    02215 IS    PA100 INF  INFO 0000
```

Figure 16-10. Sample NPC ALARM Report

Common Equipment Alarm Report

Description

The COMMON EQUIPMENT ALARM Report form logs all of the equipment alarms received at the DND from the DACS.

DND GUI: Sample Report Form

Figure 16-11 displays a sample COMMON EQUIPMENT ALARM Report form.

The screenshot shows a Java Applet window titled "COMMON EQUIPMENT ALARM SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo in the top left. A purple bar at the top right contains the word "Alarms" and a dropdown arrow. The form is divided into two main sections: "SITE AND FORMAT" and "Equipment Search Information".

SITE AND FORMAT

- Site Name: CEF (dropdown menu)
- Available Formats: COMMON EQUIPMENT ALARM (dropdown menu)
- Report Title: (text input field)

Equipment Search Information

- Device: * (dropdown menu)
- Sub Device: * (dropdown menu)
- Alarm Intervention Level: * (dropdown menu)

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The status bar at the bottom of the window reads "Unsigned Java Applet Window".

Figure 16-11. DND GUI: COMMON EQUIPMENT ALARM Report Form

Common Equipment Alarm Report (Continued)

DND Forms: Sample Report Form

Figure 16-12 displays a sample COMMON EQUIPMENT ALARM Report form.

The screenshot displays a terminal window titled "DND USER INTERFACE". The status line shows "Status:" and the alarm list shows "Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". Below this is a section titled "COMMON EQUIPMENT ALARM SEARCH CRITERIA" which contains the following fields:

- Site Name: A-CEF-01-NJ-Manalapan
- Device: MC
- Sub Device: CCN

At the bottom of the form, there is a prompt "Enter site name:" followed by a cursor. Below the form area, the text "jessica: UI-03" is displayed. At the very bottom, there is a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-12. DND Forms: Sample COMMON EQUIPMENT ALARM Report Form

Common Equipment Alarm Report (Continued)

Field Descriptions The field values for the COMMON EQUIPMENT ALARM Report form are described in Table 16-5.

Table 16-5. Field Descriptions for the COMMON EQUIPMENT ALARM Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select a COMMON EQUIPMENT ALARM Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>COMMON EQUIPMENT ALARMS</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> Device	(Combo box) Select the device on the DACS to display in the report. The choices are: ■ * - All device alarms ■ CCN - Cross-connect Network alarms ■ MC - Main Controller alarms ■ POWER - Power unit alarms ■ SYNC - Synchronizer alarms ■ UNIT - Unit alarms ■ NE (GUI only) - Network Element
<i>GUI and Forms:</i> Sub Device	(Combo box) Select the sub device (if applicable) on the Device previously selected.

Common Equipment Alarm Report (Continued)

Sample COMMON EQUIPMENT ALARM Report

Figure 16-13 displays a sample COMMON EQUIPMENT ALARM Report.

```
09 Mar 1999 12:44:53
---A-CEF-01-NJ-Manalapan---COMMON EQUIPMENT ALARM---COMMON EQUIPMENT ALARM---
Date      Time      Device      Sub_Device Side Unit Sub_Unit Status
09Mar99   12:33:47 NE         NE         0    0    0    Critical
05Mar99   10:09:11 UNIT      DS3        0    11   1    Critical
26Feb99   11:41:32 CCN      ECCN       1    0    0    Major
26Feb99   11:39:33 UNIT      FC         1    2    2    Major
10Feb99   16:45:00 UNIT      FC         0    2    4    Major
```

Figure 16-13. Sample COMMON EQUIPMENT ALARM Report

Alarm Query Report

Description

The ALARM QUERY Report sends a command to the DACS to query alarm information. In order to perform this operation, the selected DACS must be In-service.

The only field on the report is **Site Name**: Select the name of the DACS where the report will be processed.

DND GUI: Sample Report Form

Figure 16-14 displays a sample ALARM QUERY Report form.

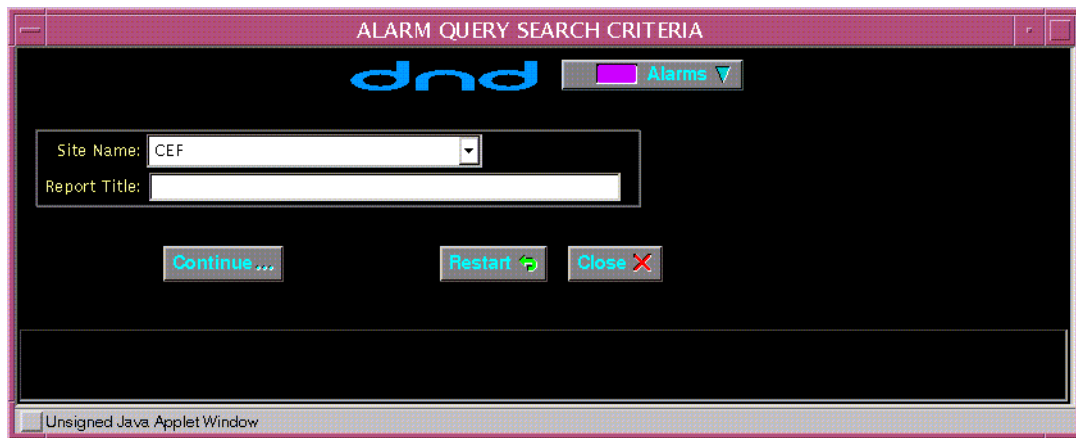
The screenshot shows a Java applet window titled "ALARM QUERY SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo in the top left. To the right of the logo is a button labeled "Alarms" with a downward arrow. Below the logo, there are two input fields: "Site Name:" with a dropdown menu showing "CEF", and "Report Title:" with a text box. At the bottom of the form area, there are three buttons: "Continue...", "Restart" with a circular arrow icon, and "Close" with a red X icon. The bottom of the window shows a status bar with the text "Unsigned Java Applet Window".

Figure 16-14. DND GUI: Sample ALARM QUERY Report Form

Alarm Query Report (Continued)

DND Forms: Sample Report Form

Figure 16-15 displays a sample ALARM QUERY Report form.

The screenshot displays a window titled "DND USER INTERFACE". Inside the window, the "Status:" field is empty, and the "Alarms:" field lists three entries: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below these fields is a large rectangular area labeled "ALARM QUERY SEARCH CRITERIA". Inside this area, the text "Site Name: A-CEF-01-NJ-Manalapan" is displayed. At the bottom of the window, there is a prompt "Enter site name:" followed by a text input field. To the right of the input field, the text "jessica: UI-03" is visible. At the very bottom of the window, there is a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-15. DND Forms: Sample ALARM QUERY Report Form

Alarm Query Report (Continued)

Sample ALARM QUERY Report

Figure 16-16 displays a sample ALARM QUERY Report.

```
09 Mar 99 13:02:28
A-CEF-01-NJ-Manalapan-----ALARM QUERY REPORT-----

Alarm Conditions Outstanding
  A-CEF-01-NJ-Manalapan is alarming
    Critical, Major, Minor.

Summary totals for A-CEF-01-NJ-Manalapan:
  A-CEF-01-NJ-Manalapan has 1 Critical alarm(s).
  A-CEF-01-NJ-Manalapan has 2 Major alarm(s).
  A-CEF-01-NJ-Manalapan has 1 information indication(s).

Subtotals of frame summary alarms:
  1 Major alarm(s).

DACS II Entities:
  Cross Connect Network (XC) 1 is in major alarm.

Subtotals for DS3 facility Alarm(s):
  1 Critical alarm(s).

DS3 Facility Alarm Information:
  Unit 11 facility 1 is in critical alarm.

Subtotals for FTU Network Processing Circuit (NPC) Alarm(s):
  1 Major alarm(s).
  1 Information indication(s).

Facility Terminating Unit (FTU) NPC Alarm(s):
  Unit 02 module 2 npc 01 (0201) is in major alarm.
  Unit 02 module 2 npc 15 (0215) has information.
```

Figure 16-16. Sample ALARM QUERY Report

History Log Report

Description

The HISTORY LOG Report lists the output messages from the selected DACS site. Each entry appears in chronological order.

The only field on the DND GUI HISTORY LOG Report form is the **Site Name**. A HISTORY LOG Report can be generated in DND Forms, but there is no DND Forms HISTORY LOG Report form.

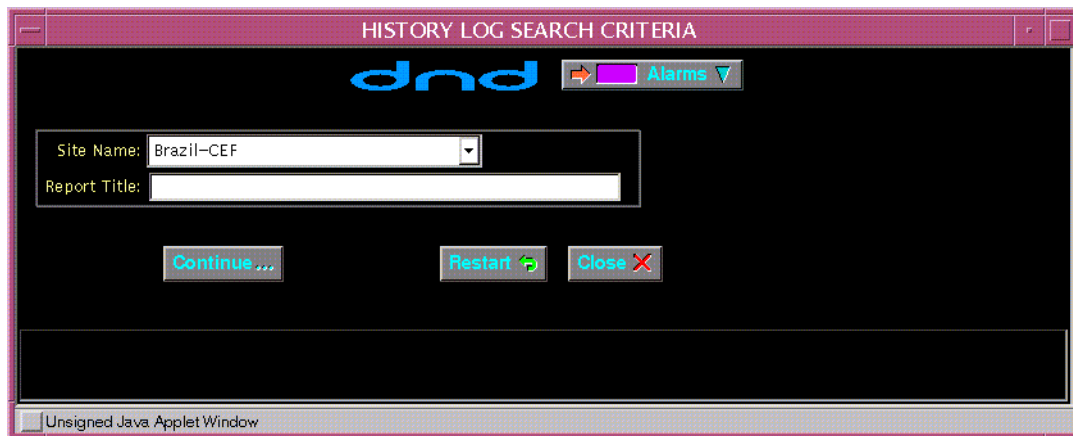
Most command responses that are sent to the HISTORY LOG are generated from commands executed in multiplex passthrough, full passthrough, or SNIDER link commands (issued at the DACS). RTRV type messages that are generated in response to an audit/sync operation are not logged in the HISTORY LOG. Table shows the commands whose responses are not logged into the HISTORY LOG.

Table 16-6. Messages Not Logged In History Log

Category	Command Code	Number	Use
NPC Provisioning	RTRV-STATE-EQPT::NPC	O.56311, O.56312	Utility query NPC state
NxDS0 Test Access	RTRV-TACC-T0::TG RTRV-TACC-T0::NPCTG	O.53081 O.53091, O.53092	Utility query test groups Utility query test group NPC
Audit/Sync	RTRV-CRS-T1 RTRV-PRMTR-T0 RTRV-PRMTR-T1 RTRV-STATE-EQPT::NPC::EQPD RTRV-ALM-EQPT RTRV-ALM-EQPT::NPC RTRV-PRMTR-EQPT::NPC:ALMOPT:AIS	O.52011 O.52041, O.52042 O.52051, O.52052 O.52053 O.52061, O.52071 O.53041 O.53111 O.81001 O.56021	Cross-connect map Utility query TO/FROM Utility query TO/FROM Utility query NPCs equipped Utility query alarms Utility query facility alarms Utility query AIS alarm option

History Log Report (Continued)

DND GUI: Sample Report Form Figure 16-17 displays a sample HISTORY LOG Report form.



The screenshot shows a Java applet window titled "HISTORY LOG SEARCH CRITERIA". The window has a dark background with the "dnd" logo in blue. Below the logo, there is a "Site Name:" dropdown menu with "Brazil-CEF" selected, and a "Report Title:" text input field. To the right of the logo is an "Alarms" button with a red arrow icon. At the bottom, there are three buttons: "Continue...", "Restart" with a circular arrow icon, and "Close" with a red X icon. The status bar at the bottom of the window reads "Unsigned Java Applet Window".

Figure 16-17. DND GUI: Sample HISTORY LOG Report Form

History Log Report (Continued)

Sample HISTORY LOG Report Figure 16-18 displays a sample HISTORY LOG Report.

The screenshot displays the DND USER INTERFACE window. At the top, the title bar reads "DND USER INTERFACE". Below the title bar, the "Status:" field is empty, and the "Alarms:" field lists three entries: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". The main content area is titled "A-CEF-01-NJ-Manalapan HISTORY LOG" and contains three entries, each preceded by a semicolon (;). The first entry is dated "99-03-22 11:32:20" and shows "A 061.154 REPT EVT EQPT" with parameters "/* [0.01321] */", "LINK-5:TN-X-FFFF.ERR", and "STATUS:00.00.02". The second entry is dated "99-03-22 11:32:20" and shows "A 062.155 REPT EVT EQPT" with parameters "/* [0.01321] */", "LINK-5:TN-X-FFFF.ERR", and "STATUS:00.00.03". The third entry is dated "99-03-22 11:32:37" and shows "A 063.156 REPT EVT EQPT". At the bottom right of the main content area, it says "Page 1 of 656" and "Display Page: 1". Below the main content area, the user name "jessica: UI-03" is displayed. At the very bottom, there is a row of buttons: "HELP", "NEXTPAGE", "PREVPAGE", "QUIT", "TOPPAGE", "TOP MENU", "PRINT", and "LASTPAGE".

Figure 16-18. Sample HISTORY LOG Report

Message Log Report

Description

The MESSAGE LOG Report lists the messages that have been retrieved from the selected DACS site. Each entry appears in chronological order.

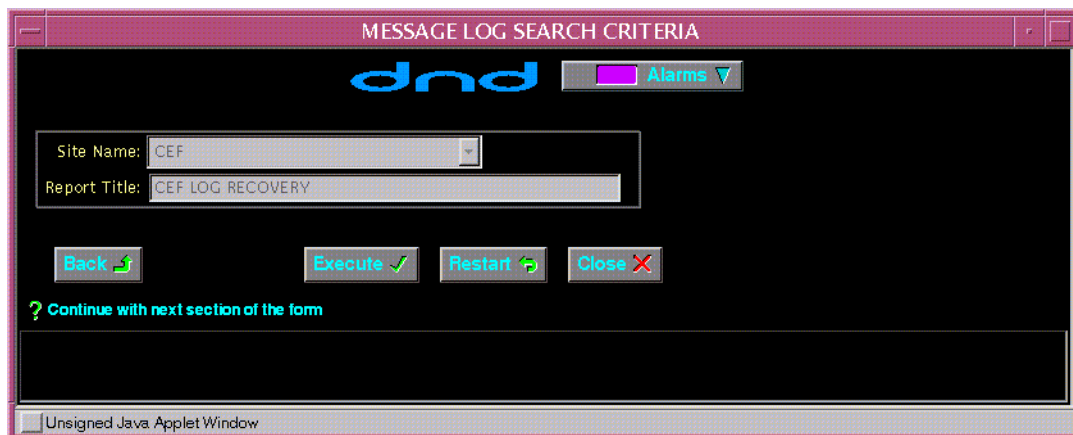
The message log supports the recovery of DACS events when restoring a DACS link when the **DACS Message Log** feature is enabled. If the time the link was down is greater than the specified **DACS Link Failure Length** time, a DACS log recovery is performed. The DND makes a request to the DACS to send all DACS messages that were output during the link outage. If the number of messages in the DACS message log is greater than what is provisioned by the **DACS Recovery Log**, the log recovery will not be performed.

For information on turning on the message log feature, see Chapter 2, *Getting Started*. For information on provisioning the **DACS Recovery Log** and **DACS Link Failure Length** time, see Chapter 5, *NE Provisioning*.

The only fields on the DND GUI MESSAGE LOG Report form are the **Site Name** and **Report Title**.

Message Log Report (Continued)

DND GUI: Sample Report Form Figure 16-19 displays a sample MESSAGE LOG Report form.



The screenshot shows a Java applet window titled "MESSAGE LOG SEARCH CRITERIA". Inside the window, there is a dark background with the "dnd" logo in blue. To the right of the logo is a button labeled "Alarms" with a downward arrow. Below the logo, there are two text input fields: "Site Name:" with the value "CEF" and "Report Title:" with the value "CEF LOG RECOVERY". Below these fields are four buttons: "Back" with a left arrow, "Execute" with a checkmark, "Restart" with a circular arrow, and "Close" with an X. Below the buttons, there is a green question mark icon followed by the text "Continue with next section of the form". At the bottom of the window, there is a status bar that says "Unsigned Java Applet Window".

Figure 16-19. DND GUI: Sample MESSAGE LOG Report Form

Message Log Report (Continued)

DND GUI: Sample Report

Figure 16-21 displays a sample MESSAGE LOG Report.

REPORT TITLE: A sample message log report

```
111
    99-12-17 09:53:21 LINK-701
M  LGT USER:::DACSADM COMPLD
;
112
    99-12-17 09:53:21
A  093.101 REPT EVT EQPT
/* [0.01321] */
"LINK-701:TN-X-FFFF,ERR"
"STATUS:01,00,01"
;
113
    99-12-17 09:53:37
A  094.102 REPT EVT EQPT
/* [0.01321] */
"LINK-701:TN-X-FFFF,ERR"
"STATUS:00,00,01"
;
```

Figure 16-20. DND GUI: Sample Message LOG Report

Script Log Report

Description

The SCRIPT LOG Report lists the contents of a user's script file. Script files can be edited, deleted, etc. using the FRAME COMMAND SCRIPT form obtained from the PASSTHROUGH MENU.

Sample SCRIPT LOG Report

Figure 16-21 displays a sample SCRIPT LOG Report.

The screenshot shows a window titled "DND USER INTERFACE". The main text area displays the following information:

```
13:47 23 Mar 1999 DND R2.0.1 / DND Forms R7.0.1
Status: Script name "COMMCEF" is completed for site A-CEF-01-NJ-Manalapan
Alarms:      A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
```

Below this, a section titled "A-CEF-01-NJ-Manalapan SCRIPT LOG" contains:

```
Site: A-CEF-01-NJ-Manalapan   Script Name: COMMCEF (24 commands)
Mar-23-99   13:38:59

===== Mar-23-99 13:38:59 =====
LGN-USER:::DAX,hello000:

      99-03-23 13:35:43 LINK-502
M LGN USER:::0030610009:DAX DENY
SNVS
/* [0.39001.01] */
/* A user is already logged in on the link/vc */
;
```

At the bottom of the main text area, it says "Page 1 of 19" and "Display Page: 1".

Below the main text area, the text "jessica: UI-03" is displayed. At the very bottom, there is a row of buttons: HELP, NEXTPAGE, PREVPAGE, QUIT, TOPPAGE, TOP MENU, PRINT, and LASTPAGE.

Figure 16-21. Sample SCRIPT LOG Report

Circuit Report

Description

The CIRCUIT Report form provides reports on circuit records. Four default formats are provided. Each concentrates on a different aspect of the information that has been created about the circuit. The data is from information that was entered in the CIRCUIT PROVISIONING form, or placed in the database through ERP or by audit/synchronization.

The SEARCH CRITERIA form is similar to the CIRCUIT PROVISIONING form. You can search for circuits of a given **Status** and other fields given on the form in addition to the ones that will appear in the report.

Circuit Report (Continued)

DND GUI: Sample Report Form Figure 16-22 displays a sample CIRCUIT Report form.

The screenshot shows a Java applet window titled "CIRCUIT PROVISIONING SEARCH CRITERIA". The window has a dark background with various input fields and buttons. At the top, there is a "dnd" logo and a button labeled "Alarms". The form is organized into several sections:

- SITE AND FORMAT**: Includes "Site Name" (dropdown), "Available Formats" (dropdown), and "Report Title" (text field).
- Circuit ID**: Includes "Circuit ID" (text field), "Bandwidth Type" (dropdown), and "Bandwidth" (text field).
- Ckt Class**: Includes "Ckt Class" (dropdown), "Status" (dropdown), and "DMB Mode" (dropdown).
- NPC**: Includes "NPC Specifier" (checkboxes for ID, Hier, Extd), "NPC" (text field), and "Range" (checkboxes for =, >, <).
- CHANNELS**: Includes "Channel" (text field) and "Range" (checkboxes for =, >, <).
- CIRCUIT INFORMATION**: Includes "Circuit Options" (No Transmit (NTR) dropdown, NAM, AIS, RDLN, OOS, INCL, DCC, TLA checkboxes) and "Circuit Data" (Priority, Customer Name, Location A, Location Z, Remarks text fields).
- Channel Options**: Includes "Trunk Conditioning" (dropdown), "Insertion Word" (dropdown), "Signaling Conversion" (text field), and "Framing" (text field).
- Service Date**: Includes "Day", "Month", "Year" (dropdowns) and "Range" (checkboxes for =, >, <).

At the bottom, there are three buttons: "Continue...", "Restart", and "Close". The window title bar indicates it is an "Unsigned Java Applet Window".

Figure 16-22. DND GUI: Sample CIRCUIT Report Form

Circuit Report (Continued)

DND Forms: Sample Report Form

Figure 16-23 displays a sample CIRCUIT Report form.

The screenshot displays a terminal window titled "DND USER INTERFACE". The interface shows the following information:

Status:
Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia

CIRCUIT PROVISIONING SEARCH CRITERIA

Site Name: A-CEF-01-NJ-Manalapan
Ckt ID: _____
Ckt Status: _____ Ckt Class: _____

FROM/TO Connection:
Hier Ext NPC ID Ch Mode
- - - - -

Bandwidth: _ _ Bandwidth Type: C Options: _____ NTR: E
TC: _____ IW: _____ SC: _____ Framing: _____

Customer Name: Company Q Service Date: > 20 Mar 99 Ckt Priority: _____
Loc A: ■ Loc Z: _____
Rmks: _____

Enter Location A. _____

jessica: UI-03

HELP [] QUIT [] TOP MENU PRINT EXECUTE

Figure 16-23. DND Forms: Sample CIRCUIT Report Form

Circuit Report (Continued)

Field Descriptions The field values for the CIRCUIT Report form are described in Table 16-7.

Table 16-7. Field Descriptions for the CIRCUIT Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI and Forms:</i> Available Formats (For <i>Forms</i> , it is a separate pop-up window)	(Combo box) Select a CIRCUIT Report format. The default choices are: ■ CIRCUIT CONNECTIONS - Identifies circuit and endpoints by Circuit ID; NPC and Channel number is displayed for FROM and TO sides in addition to Priority, Ckt Status, Ckt Class, Bandwidth, and Bandwidth Type ■ CIRCUIT OPTIONS - Concentrates on circuit characteristics as specified by the Circuit Options ■ CIRCUIT INFORMATION - Concentrates on circuit characteristics for each Circuit ID; includes Trunk conditioning and Insertion Word ■ CIRCUIT AVAILABILITY - Concentrates on the availability of the circuits; includes Service Date, Priority, and Ckt Status Additional customized formats can be created using the DND Forms Interface.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI: Circuit ID</i> <i>Forms: Ckt ID</i>	(Text field) Enter the circuit name to receive a report for a particular circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Bandwidth	(Text field) Enter the Bandwidth to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-7. Field Descriptions for the CIRCUIT Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> Bandwidth Type	(Combo box) Select the Bandwidth Type to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Status</i> <i>Forms: Ckt Status</i>	(Combo box) Select the status of the circuit to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Ckt Class	(Combo box) Select the class of the circuit to display in the report. The choices are: ■ <i>FDX: FULL-DUPLEX</i> ■ <i>HDX: HALF-DUPLEX</i> ■ <i>BBL: BACKBONE LEG</i> ■ <i>BRD: BROADCAST LEG</i> ■ <i>DMB: DIGITAL MPT BRIDGE</i> ■ <i>BKB: BCON BACKBONE</i> ■ <i>LEG: BCON TRIBUTARY</i>
<i>GUI: DMB Mode</i> <i>Forms: Mode</i>	(Combo box) Select the usage of Channel in a DMB circuit to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: NPC Specifier/</i> NPC <i>Forms: Hier/Ext/</i> NPC ID	(Radio buttons) Select the NPC in which to display a report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the range criteria of NPCs in which to display alarm report information. The choices are: ■ = - (<i>GUI only</i>) Displays NPC alarms for NPC numbers EQUAL to the NPC specified ■ > - Displays NPC alarms for NPC numbers GREATER than the NPC specified ■ < - Displays NPC alarms for NPCs numbers LESS than the NPC specified
<i>GUI: Channel</i> <i>Forms: Ch</i>	(Text field) Select the Channel to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-7. Field Descriptions for the CIRCUIT Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> (Channel) Range	(Radio buttons) Select the range criteria of channels in which to display report information. The choices are: ■ = - (<i>GUI only</i>) Displays the channel number EQUAL to the Channel specified ■ > - Displays the channel number GREATER than the Channel specified ■ < - Displays the channel number LESS than the Channel specified
<i>GUI: No Transmit (NTR)</i> <i>Forms: NTR</i>	(Combo box) Select the No transmit direction to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Circuit Options</i> <i>Forms: Options</i>	(Checkboxes) Select the Circuit Options to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Trunk Conditioning</i> <i>Forms: TC</i>	(Combo box) Select the Trunk Conditioning to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Insertion Word</i> <i>Forms: IW</i>	(Combo box) Select the Insertion Word to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Signaling Conversion</i> <i>Forms: SC</i>	(Text field) Enter the Signaling Conversion value to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Framing	(Text field) Enter the Framing value to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Location A</i> <i>Forms: Loc A</i>	(Text field) Enter the near-end location. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Location Z</i> <i>Forms: Loc Z</i>	(Text field) Enter the far-end location. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Customer Name	(Text field) Enter the name of the customer. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-7. Field Descriptions for the CIRCUIT Report Form (Continued)

Field	Description
<i>GUI: Priority</i> <i>Forms: Ckt Priority</i>	(Text field) Enter the Priority value to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Remarks</i> <i>Forms: Rmks</i>	(Text field) Enter comments about the circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Service Date	(Combo boxes) Select the date the circuit was placed in service. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Service Date) Range	(Radio buttons) Select the service date criteria for the circuit. The choices are: ■ = - (<i>GUI only</i>) Displays a report for circuits placed In-Service on the Service Date specified ■ > - Displays a report for circuits placed In-Service AFTER the Service Date specified ■ < - Displays a report for circuits placed In-Service BEFORE the Service Date specified

Circuit Report (Continued)

Sample CIRCUIT Reports

The four default CIRCUIT Report formats are:

- *CIRCUIT AVAILABILITY*
- *CIRCUIT INFORMATION*
- *CIRCUIT OPTIONS*
- *CIRCUIT CONNECTIONS*

CIRCUIT AVAILABILITY

CIRCUIT AVAILABILITY concentrates on the availability of the circuits. The service date, circuit priority and status are listed for each Circuit ID, as well as the user informational location A and location Z. Figure 16-24 displays an example of this format.

```
09 Mar 1999 15:52:22
-----A-CEF-01-NJ-Manalapan-----CIRCUITS-----CIRCUIT AVAILABILITY-----
Circuit_ID          Status      CP Svc_Date Loc_A      Loc_Z
ERP 02213-001 02214-002 BW/0 ACTIVE      00 03Mar99
ERP 02213-005 02214-006 BW/0 ACTIVE      00 03Mar99
SYN 02425-001 99101-002 BW/0 DEACTIVATED 00 17Jan99
```

Figure 16-24. Sample CIRCUIT Report - *CIRCUIT AVAILABILITY* Format

(Continued on next page)

Circuit Report (Continued)

Sample CIRCUIT Reports, Continued

CIRCUIT INFORMATION

CIRCUIT INFORMATION concentrates on the circuit characteristics for each Circuit ID. The report includes trunk conditioning and insertion word. Figure 16-25 displays an example of this format.

```
09 Mar 1999 15:52:22
-----A-CEF-01-NJ-Manalapan-----CIRCUITS-----CIRCUIT INFORMATION-----
Circuit_ID      TC          IW  SC      NAM AIS RDL D OOS INCL DCC
Chicago-CKT2    0011,0011      TRB
ERP 02201-012 02205-
ckt1            X-FF,X-FF      FF
ckt1            X-FF,X-FF      FF
ckt1            X-FF,X-FF      FF
```

Figure 16-25. Sample CIRCUIT Report - *CIRCUIT INFORMATION* Format

CIRCUIT OPTIONS

CIRCUIT OPTIONS concentrates on the circuit characteristics specified in options. Figure 16-26 displays an example of this format.

```
09 Mar 1999 15:52:22
-----A-CEF-01-NJ-Manalapan-----CIRCUITS-----CIRCUIT OPTIONS-----
Circuit_ID      TC          IW  SC      NAM AIS RDL D OOS INCL DCC
Chicago-CKT2    0011,0011      TRB
ERP 02201-012 02205-001
ckt1            X-FF,X-FF      FF
ckt1            X-FF,X-FF      FF
ckt1            X-FF,X-FF      FF
```

Figure 16-26. Sample CIRCUIT Report - *CIRCUIT OPTIONS* Format

(Continued on next page)

Circuit Report (Continued)

Sample CIRCUIT Reports, Continued

CIRCUIT CONNECTIONS

CIRCUIT CONNECTIONS identifies circuit and end points by Circuit ID. For each cross-connection, the NPC and channel number of the NPC in which it occurs is stated for both the FROM and the TO sides. High-rate and multipoint circuits are presented as multiple cross-connections. The report includes circuit priority, status, class, bandwidth and bandwidth type. Figure 16-27 displays an example of this format.

```
09 Mar 1999 15:52:22
-----A-CEF-01-NJ-Manalapan-----CIRCUITS-----CIRCUIT CONNECTIONS-----
Circuit_ID          CP Status      Cls BW BT F_NPC Ch  T_NPC Ch
Chicago-CKT2        00 ACTIVE      FDX 01 C 02201 001 02221 007
ERP 02201-012 02205-012 BW/01 FDX 00 ACTIVE      FDX 01 C 02201 012 02205 012
ckt1                00 ACTIVE      FDX 03 C 02213 001 02215 004
ckt1                00 ACTIVE      FDX 03 C 02213 002 02215 005
ckt1                00 ACTIVE      FDX 03 C 02213 003 02215 006
```

Figure 16-27. Sample CIRCUIT Report - *CIRCUIT CONNECTIONS* Format

Channel Report

Description

The CHANNEL Report form provides one default format of *CHANNEL USAGE*. This format lists the use of each channel within each facility NPC that has been equipped. The information in this report is taken from both NPC and circuit data. On the report form, you can select by NPC, circuit, or connecting NPC.

**NOTE:**

Selecting *NULL* in the **Status** field of the form selects channels which are not in use.

Channel Report (Continued)

DND GUI: Sample Report Form Figure 16-28 displays a sample CHANNEL Report form.

The screenshot shows a Java applet window titled "CHANNEL USAGE SEARCH CRITERIA". The window has a dark background with a pink border. At the top, there is a "dnd" logo and an "Alarms" button. The form is divided into several sections:

- SITE AND FORMAT**: Contains a "Site Name" dropdown menu (set to "Brazil-CEF"), an "Available Formats" dropdown menu (set to "CHANNEL USAGE"), and a "Report Title" text field.
- NPC Search Information**: Contains an "NPC" section with "NPC Specifier" (radio buttons for ID, Hier, Extd), "NPC" text field, and "Range" (radio buttons for =, >, <). It also has a "CHANNELS" section with "Channel" text field and "Range" (radio buttons for =, >, <).
- Used By**: Contains "Circuit ID", "Ckt Class", "Trunk Conditioning", "Termination State", "Status", and "Insertion Word" fields.
- Connecting To**: Contains an "NPC" section with "NPC Specifier" (radio buttons for ID, Hier, Extd), "NPC" text field, and "Range" (radio buttons for =, >, <). It also has a "CHANNELS" section with "Channel" text field and "Range" (radio buttons for =, >, <).

At the bottom, there are three buttons: "Continue...", "Restart", and "Close". The window title bar at the bottom left says "Unsigned Java Applet Window".

Figure 16-28. DND GUI: Sample CHANNEL Report Form

Channel Report (Continued)

DND Forms: Sample Report Form

Figure 16-29 displays a sample CHANNEL Report form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The window contains the following text:

```
12:41 23 Mar 1999 DND R2.0.1 / DND Forms R7.0.1
Status: Snmp_hdlr007 exited abnormally status=0 Signal 9. Restarting.
Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
```

Below this text is a section titled "CHANNEL USAGE SEARCH CRITERIA" in a black box. The form contains the following fields and values:

- Site Name: A-CEF-01-NJ-Manalapan
- NPC: Hier 02205 Ext NPC ID Ch
- Status: ACTIVE
- Used by Circuit ID:
- TC: IW: Termination State: Class: HDX
- TO NPC: Hier Ext NPC ID Ch

At the bottom of the form, there is a prompt: "Enter search character '<<', '>>' or leave blank". Below this prompt, the text "jessica: UI-03" is displayed.

At the bottom of the window, there are several buttons: HELP, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 16-29. DND Forms: Sample CHANNEL Report Form

Channel Report (Continued)

Field Descriptions The field values for the CHANNEL Report form are described in Table 16-8.

Table 16-8. Field Descriptions for the CHANNEL Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select a CHANNEL Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>CHANNEL USAGE</i>
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI:</i> NPC Specifier/NPC <i>Forms: NPC/NPC ID</i>	(Radio buttons/Text field) Select the NPC of one side of a circuit to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the Range criteria of NPCs in which display alarm report information. The choices are: ■ = - (<i>GUI only</i>) Displays NPC alarms for NPC numbers EQUAL to the NPC specified ■ > - Displays NPC alarms for NPC numbers GREATER than the NPC specified ■ < - Displays NPC alarms for NPCs numbers LESS than the NPC specified
<i>GUI: (NPC)</i> Channel <i>Forms: Ch</i>	(Text field) Select the Channel number of the NPC to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-8. Field Descriptions for the CHANNEL Report Form (Continued)

Field	Description
<i>DND and Forms:</i> (NPC - Channel) Range	(Radio buttons) Select the range criteria of channels in which display report information. The choices are: ■ = - (<i>GUI only</i>) Displays a report for the channel number EQUAL to the Channel specified ■ > - Displays a report for channel numbers GREATER than the Channel specified ■ < - Displays a report for channel numbers LESS than the Channel specified
<i>GUI: Circuit ID Forms: Used by Circuit ID</i>	(Text field) Enter the circuit name to receive a report for a particular circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> Status	(Combo box field) Select the status of the circuit to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Ckt Class Forms: Class</i>	(Combo box field) Select the class of the circuit to display in the report. The choices are: ■ <i>FDX: FULL-DUPLEX</i> ■ <i>HDX: HALF-DUPLEX</i> ■ <i>BBL: BACKBONE LEG</i> ■ <i>BRD: BROADCAST LEG</i> ■ <i>DMB: DIGITAL MPT BRIDGE</i> ■ <i>BKB: BCON BACKBONE</i> ■ <i>LEG: BCON TRIBUTARY</i>
<i>GUI: Trunk Conditioning Forms: TC</i>	(Combo box) Select the Trunk Conditioning to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Insertion Word Forms: IW</i>	(Combo box) Select the Insertion Word to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-8. Field Descriptions for the CHANNEL Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> Termination State	(Combo box) Select to display circuits with ONE of the following termination states: ■ * - All termination states ■ TLR - Terminate and leave released ■ TLA - Terminate and leave active
<i>GUI: (Connecting To)</i> NPC Specifier/NPC <i>Forms: TO NPC</i>	(Radio buttons/Text field) Select the NPC of the other side of the circuit in which to display alarms. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Connecting To NPC) Range	(Radio buttons) Select the range criteria of NPCs in which display alarm report information. The choices are: ■ = - Displays NPC alarms for NPC numbers EQUAL to the NPC specified ■ > - Displays NPC alarms for NPC numbers GREATER than the NPC specified ■ < - Displays NPC alarms for NPCs numbers LESS than the NPC specified
<i>GUI: (Connecting To)</i> Channel <i>Forms: Ch</i>	(Text field) Enter the Channel to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Connecting To - Channel) Range	(Radio buttons) Select the range criteria of channels in which display report information. The choices are: ■ = - Displays the channel number EQUAL to the Channel specified ■ > - Displays the channel number GREATER than the Channel specified ■ < - Displays the channel number LESS than the Channel specified

Channel Report (Continued)

Sample CHANNEL Report

Figure 16-30 displays a sample CHANNEL Report.

```
09 Mar 1999 16:10:33
-----A-ISX-05-TX-Dallas-----CHANNELS-----CHANNEL USAGE-----
NPC  Ch  Status      Circuit_ID                      CIs To_NPC Ch
01107 000 NULL
01107 001 ACTIVE
01107 002 ACTIVE
01107 003 ACTIVE      SYN 0007-003 0007-004 BW/01 FDX      FDX 01107 004
01107 004 ACTIVE      SYN 0007-003 0007-004 BW/01 FDX      FDX 01107 003
01107 005 ACTIVE      SYN 0007-003 0007-004 BW/01 FDX      FDX 01107 003
01107 006 NULL
01107 007 NULL
01107 008 NULL
01107 009 NULL
01107 010 NULL
```

Figure 16-30. Sample CHANNEL Report



NOTE:

A full CHANNEL report takes some time to generate, since the DND must check every channel of every NPC. It is suggested you limit the search to one or a few NPCs.

Test Access Report

Description

The TEST ACCESS Report displays the test access status of circuits. One default format is provided which lists information for OBJECT UNDER TEST circuits through either test ports or test groups. The fields that appear on the form contain information that was entered using the TEST ACCESS form.

DND GUI: Sample Report Form

Figure 16-31 and Figure 16-32 display a sample TEST ACCESS Report form.

Top of Form:

The screenshot shows the 'TEST ACCESS SEARCH CRITERIA' window. At the top, there is a 'dnd' logo and an 'Alarms' button. The form is divided into several sections: 'SITE AND FORMAT' with fields for 'Site Name' (Brazil-CEF), 'Available Formats' (UNDER TEST), and 'Report Title'; 'TEST OBJECT' with fields for 'Test State', 'Object Type', 'TG Number' (Number and Range), 'Insertion Word', 'Bandwidth', and 'Trunk Conditioning'; 'FROM NPC' and 'TO NPC' sections, each containing 'NPC Specifier' (ID, Hier, Extd), 'NPC', and 'Range' fields; and 'CHANNELS' sections for both 'FROM NPC' and 'TO NPC' with 'Channel' and 'Range' fields. The 'Range' fields include checkboxes for '=', '>', and '<'. The window title bar indicates it is an 'Unsigned Java Applet Window'.

Figure 16-31. DND GUI: Sample TEST ACCESS Report Form - Top half

(Continued on next page)

Test Access Report (Continued)

DND GUI: Sample Bottom of Form:
Report Form,
Continued

The screenshot shows the bottom half of the 'TEST ACCESS SEARCH CRITERIA' form. The form is titled 'OBJECT UNDER TEST' and contains the following fields and controls:

- Circuit ID:** A text input field.
- Termination State:** A dropdown menu with a '*' symbol.
- FROM NPC:** A section containing:
 - NPC Specifier:** Three checkboxes: ☒ ID, ☐ Hier, ☐ Extd.
 - NPC:** A text input field.
 - Range:** A set of four buttons: ☒ =, ☐ >, ☐ <, and ☐.
- CHANNELS:** A section containing:
 - Channel:** A text input field.
 - Range:** A set of four buttons: ☒ =, ☐ >, ☐ <, and ☐.
- TO NPC:** A section containing:
 - NPC Specifier:** Three checkboxes: ☒ ID, ☐ Hier, ☐ Extd.
 - NPC:** A text input field.
 - Range:** A set of four buttons: ☒ =, ☐ >, ☐ <, and ☐.
- CHANNELS:** A section containing:
 - Channel:** A text input field.
 - Range:** A set of four buttons: ☒ =, ☐ >, ☐ <, and ☐.

At the bottom of the form are three buttons: 'Continue ...', 'Restart' (with a circular arrow icon), and 'Close' (with a red X icon). The window title bar at the bottom reads 'Unsigned Java Applet Window'.

Figure 16-32. DND GUI: Sample TEST ACCESS Report Form - Bottom half

Test Access Report (Continued)

DND Forms: Sample Report Form

Figure 16-33 displays a sample TEST ACCESS Report form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The status bar at the top indicates "Status:" and "Alarms:" with three active alarms: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". The main content area is titled "TEST ACCESS SEARCH CRITERIA". It contains the following fields and values:

- Site Name: A-CEF-01-NJ-Manalapan
- Test Object
- Test State: **MONITOR**
- Object Type: **IG** Number: Bandwidth: TC: IW: AtoMU:
- Hier Ext NPC ID Ch
- FROM: 02202 001
- TO: 02203 001
- Object Under Test
- Ckt ID:
- Termination State:
- Channel Connection
- Hier Ext NPC ID Ch
- FROM:
- TO:

Below the form, there is a prompt "Enter Circuit ID for circuit under test:" followed by the text "jessica: UI-03". At the bottom of the window, there is a row of buttons: "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-33. DND Forms: Sample TEST ACCESS Report Form

Test Access Report (Continued)

Field Descriptions The field values for the TEST ACCESS Report form are described in Table 16-9.

Table 16-9. Field Descriptions for the TEST ACCESS Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select a CHANNEL Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>UNDER TEST</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> Test State	(Combo box) Select the state of the test access connection. For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.
<i>GUI and Forms:</i> Object Type	(Combo box) Select the TEST OBJECT type. For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.
<i>GUI and Forms:</i> (TG) Number	(Text field) Enter the number of the TEST OBJECT used for the test access. For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.
<i>GUI and Forms:</i> (TG) Range	(Radio buttons) Select the TEST OBJECT Number range. The choices are: ■ = - (<i>GUI only</i>) Displays test access information for the test group with a number EQUAL to the Number specified ■ > - Displays test access information for test groups with numbers GREATER than the Number specified ■ < - Displays test access information for test groups with numbers LESS than the Number specified.

**Table 16-9. Field Descriptions for the TEST ACCESS Report Form
(Continued)**

Field	Description
<i>GUI: Insertion Word</i> <i>Forms: IW</i>	(Combo box) Select the Insertion Word for the TEST OBJECT. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms: Bandwidth</i>	(Text field) Enter the bandwidth of the TEST OBJECT. For additional information, refer to the Field Description tables in Chapter 17, Test Port and Test Access.
<i>GUI: Trunk Conditioning</i> <i>Forms: TC</i>	(Combo box) Select the Trunk Conditioning for the TEST OBJECT. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: (TEST OBJECT: FROM NPC/TO NPC) NPC Specifier/NPC</i> <i>Forms: FROM/TO/ NPC ID</i>	(Radio buttons and Text fields) Select the TEST OBJECT's FROM and TO NPCs. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: Channel</i> <i>Forms: Ch</i>	(Text field) Enter the channel number for the TEST OBJECT's FROM and TO NPCs. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms: (Channel/Ch) Range</i>	(Radio buttons) Select the TEST OBJECT's Channel range. The choices are: ■ = - (<i>GUI only</i>) Displays test access information for the TEST OBJECT with a number EQUAL to the Channel specified ■ > - Displays test access information for the TEST OBJECT groups with numbers GREATER than the Channel specified ■ < - Displays test access information for the TEST OBJECT with numbers LESS than the Channel specified.
<i>GUI: (OBJECT UNDER TEST: FROM NPC/TO NPC) NPC Specifier/NPC</i> <i>Forms: FROM/TO/ NPC ID</i>	(Radio buttons and Text fields) Select the OBJECT UNDER TEST's FROM and TO NPCs. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

**Table 16-9. Field Descriptions for the TEST ACCESS Report Form
(Continued)**

Field	Description
<i>GUI: Channel</i> <i>Forms: Ch</i>	(Text field) Enter the channel number for the OBJECT UNDER TEST's FROM and TO NPCs. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI and Forms:</i> (Channel/Ch) Range	(Radio buttons) Select the OBJECT UNDER TEST Channel range. The choices are: ■ = - (<i>GUI only</i>) Displays test access information for the OBJECT UNDER TEST with a number EQUAL to the Channel specified ■ > - Displays test access information for the OBJECT UNDER TEST groups with numbers GREATER than the Channel specified ■ < - Displays test access information for the OBJECT UNDER TEST with numbers LESS than the Channel specified.
<i>GUI: Circuit ID</i> <i>Forms: Ckt ID</i>	(Text field) Enter the circuit name of the OBJECT UNDER TEST. For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.
<i>GUI and Forms:</i> Termination State	(Combo box) Enter the termination state of the OBJECT UNDER TEST. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Test Access Report (Continued)

Sample TEST ACCESS Report

Figure 16-34 displays a sample TEST ACCESS Report.

09 Mar 1999 18:15:57

-----A-CEF-01-NJ-Manalapan-----TEST ACCESS-----UNDER TEST-----

Obj	Num	F_NPC	Ch	TOBJF	Ch	TOBJT	Ch	T_NPC	Ch	BW	STATE	TERM

TG	-01	02206	002	02206	017	02214	017	02214	001	01	MONIT	TLR

TG	001	02201	001	02201	020	02205	020	02205	004	03	MONIT	TLR

TG	002	02319	001	02319	013	02320	013	02320	003	02	MONIT	TLA-F

Figure 16-34. Sample TEST ACCESS Report

NPC Report

Description

The NPC Report provides a report on NPC records. The data was entered in the NPC PROVISIONING form, or placed in the database through ERP or audit/synchronization.

This form has four different variations - the generic NPC Report form, which displays if no PM option is specified, and the specific NPC Report forms with special fields for the NAS, CEPT, or CEPT PA PM options.

The SEARCH CRITERIA form is similar to the NPC PROVISIONING forms. You can specify search criteria for fields that do not appear on the report. Moreover, you can use search criteria in the status fields, which are not accessible on the NPC PROVISIONING form.

NPC Report (Continued)

DND GUI: Sample Report Form Figure 16-35 displays a sample NPC Report form.

The screenshot shows the 'NPC PROVISIONING SEARCH CRITERIA' window. At the top, there is a 'dnd' logo and an 'Alarms' button. The form is divided into several sections:

- SITE AND FORMAT**: Includes 'Site Name' (Brazil-CEF), 'Available Formats' (NPC NUMBERS), and 'Report Title'.
- NPC Search Information**: Includes 'NPC Specifier' (ID, Hier, Extd), 'NPC' (text field), 'Range' (checkboxes for =, >, <), and 'NPC State Information' (Alarm State, Service State).
- DACS Provisioning Options**: Includes 'NPC Type', 'Insertion Word (IW)', 'Alarm Indication Signal (AIS)', 'Loopback Transmission', 'Loopback Direction', 'TSO', 'TSOM', and 'NFS'.
- DND Provisioning Options**: Includes 'Alarm Age' and 'Range' (checkboxes for =, >, <).
- PERFORMANCE MONITORING SPECIFICATION**: Includes 'Specify PM Options' (none, NAS, CEPT, CEPT PA).

At the bottom, there are 'Continue...', 'Restart', and 'Close' buttons. The window title bar indicates it is an 'Unsigned Java Applet Window'.

Figure 16-35. DND GUI: Sample NPC Report Form - No PM Options

NPC Report (Continued)

DND Forms: Sample Report Form

Figure 16-36 displays a sample NPC Report form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The status bar at the top lists "Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". The main form is titled "NPC PROVISIONING SEARCH CRITERIA". It contains the following fields and values:

- Site Name: A-CEF-01-NJ-Manalapan
- NPC Number (Hier): (Ext):
- NPC ID: Type: DA100 IW: AIS:
- Alarm State: CRIT Alarm Aging: FE Site:
- Service State: OOS TS0: TSOM: NFS:
- Lpbk Trans: A Dir: N

Below these fields are two sections for performance options:

NAS Performance Options

	BER	Frame Align	Slips	Err Sec	Sev Err Sec
Minor:	-	█	-	-	-
Major:	-	-	-	-	-

CEPT Performance Options

	Slips	Degraded Min	Unavail Sec	Err Sec	Sev Err Sec
Short:	_____	_____	_____	_____	_____
Long:	_____	_____	_____	_____	_____

At the bottom of the form, it says "-- Press NEXTPAGE for CEPT PA Performance Options --". Below the form, there is a prompt "Enter the minor frame alignment threshold option." and the user input "jessica: UI-03". At the very bottom, there is a navigation bar with buttons: HELP, NEXTPAGE, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 16-36. DND Forms: Sample NPC Report Form

NPC Report Form (Continued)

Field Descriptions The field values for the NPC Report form are described in Table 16-10.

Table 16-10. Field Descriptions for the NPC Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI and Forms:</i> Available Formats (For <i>Forms</i> , it is a separate pop-up window)	(Combo box) Select an NPC Report format. The default choices are: ■ <i>NPC NUMBERS</i> -displays a report that is sorted by hierarchical NPC number with alarm and service state information included. ■ <i>NPC IDS</i> - displays a report of the NPCs in the database sorted by NPC ID. Additional customized formats can be created using the DND Forms Interface.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI:</i> NPC Specifier/NPC <i>Forms: NPC ID</i>	(Radio buttons/Text field) Select the NPC in which to display alarms. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms:</i> (NPC) Range	(Radio buttons) Select the range criteria of NPCs in which display alarm report information. The choices are: ■ = - Displays NPC alarms for NPC numbers EQUAL to the NPC specified ■ > - Displays NPC alarms for NPC numbers GREATER than the NPC specified ■ < - Displays NPC alarms for NPCs numbers LESS than the NPC specified
<i>GUI: NPC Type</i> <i>Forms: Type</i>	(Text field) Enter the NPC Type to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.

Table 16-10. Field Descriptions for the NPC Report Form (Continued)

Field	Description
<i>GUI: Insertion Word</i> <i>Forms: IW</i>	(Text field) Enter the Insertion Word to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI: Alarm Indication Signal (AIS)</i> <i>Forms: AIS</i>	(Combo box) Select the user-defined severity of an NPC AIS alarm to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms: TS0</i>	(Text field) Enter the Time slot 0 transmit value. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms: TS0M</i>	(Text field) Enter the Time slot 0 monitor. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI: Alarm Age</i> <i>Forms: Alarm Aging</i>	(Text field) Enter the alarm age of the NPCs to display the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms: Range</i>	(Radio buttons) Select the range criteria of the Alarm Age in which display report information. The choices are: ■ = - Displays NPCs with an alarm age EQUAL to the Alarm Age specified ■ > - Displays NPCs with an alarm age GREATER than the Alarm Age specified ■ < - Displays NPCs with an alarm age LESS than the Alarm Age specified
<i>GUI and Forms: Alarm State</i>	(Combo box) Select the alarm status of the NPC(s). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI and Forms: Service State</i>	(Combo box) Select the service state of the NPC(s). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI: Loopback Transmission</i> <i>Forms: Loopback Trans</i>	(Combo box) Select the loopback transmission option for the NPC(s). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.

Table 16-10. Field Descriptions for the NPC Report Form (Continued)

Field	Description
<i>GUI:</i> Loopback Direction <i>Forms: Dir</i>	(Combo box) Select the loopback direction option for the NPC(s). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
<i>GUI: NFW</i> <i>Forms: NFS</i>	(Text field) For PA type NPCs only. Enter the Non-frame word setting value to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI: Far End Site</i> <i>Forms: FE Site</i>	(Combo box - displayed only if Facility is selected in the Alarm Type field.) Select the name of the DACS at the Far End.
<i>GUI: Specify PM Options</i> <i>Forms: (All PM Options appear on the form.)</i>	(Radio buttons) Select the PM options to display in the report. The choices are: ■ NONE - For a report on all NPCs ■ NAS - For a report on NAS NPCs ■ CEPT - For a report on CEPT NPC ■ CEPT PA - For a report on PA type CEPT NPCs In DND <i>GUI</i>, click Continue... to display the PM options. In the <i>Forms</i> Interface, press NEXTPAGE to display the CEPT PA PM options. For additional information, refer to Chapter 8, NPC Provisioning.

NPC Report (Continued)

Sample Reports

Two default formats are provided. Each contains similar information, but the records are sorted on different fields. The two default NPC Report formats are:

- NPC NUMBERS
- NPC IDS

NPC NUMBERS

NPC NUMBERS contains records that are sorted by hierarchical NPC number. Alarm and service state information is included. The entries are sorted by NPC number. Figure 16-37 displays an example of this format.

```
09 Mar 1999 10:37:14
-----A-CEF-01-NJ-Manalapan-----NPCS-----NPC NUMBERS-----
NPC   NPC_ID                               Svc  Type  FE_Site  Alm
02201 02201NPC001                         IS   PA164                PBA
02202 02202NPC001                         OOS   PA164                NONE
02205 02205NPC001                         IS   PA164                INFO
02206 02206NPC001                         IS   PA164                INFO
02213 02213NPC001                         IS   PB100                NONE
02214 02214NPC001                         IS   PB100                NONE
02215  NPC02215                            IS   PA100                INFO
02219 02219NPC001                         OOS   PA100                NONE
02319 02319NPC001                         IS   DE100                NONE
02320 02320NPC001                         IS   DE100                NONE
02425  NPC02425                            OOS   PC100                NONE
99101  VIRTUAL1                             IS
99102  VIRTUAL2                             IS
99103  VIRTUAL3                             IS
99104  VIRTUAL4                             IS
99105  VIRTUAL5                             IS
99106  VIRTUAL6                             IS
```

Figure 16-37. Sample NPC Report - NPC NUMBERS Format

(Continued on next page)

NPC Report (Continued)

Sample Reports, Continued

NPC IDS

NPC IDS contains a record of NPCs that are in the database. The NPC ID and various information, such as the type and status are included. The report lines are sorted by NPC ID. Figure 16-38 displays an example of this format.

```

09 Mar 1999 10:41:23
-----A-CEF-01-NJ-Manalapan-----NPCS-----NPC IDS-----
NPC_ID      NPC   Svc  Type  FE_Site  Alm
02201NPC001 02201 IS   PA164      PBA
02202NPC001 02202 OOS  PA164      NONE
02205NPC001 02205 IS   PA164      INFO
02206NPC001 02206 IS   PA164      INFO
02213NPC001 02213 IS   PB100      NONE
02214NPC001 02214 IS   PB100      NONE
02219NPC001 02219 OOS  PA100      NONE
02319NPC001 02319 IS   DE100      NONE
02320NPC001 02320 IS   DE100      NONE
NPC02215     02215 IS   PA100      INFO
NPC02425     02425 OOS  PC100      NONE
VIRTUAL1     99101 IS
VIRTUAL2     99102 IS
VIRTUAL3     99103 IS
VIRTUAL4     99104 IS
VIRTUAL5     99105 IS
VIRTUAL6     99106 IS

```

Figure 16-38. Sample NPC Report - NPC IDS Format

Database Audit/Synchronization Report

Description

The DATABASE AUDIT/SYNCHRONIZATION Report lists discrepancies found between the DND and DACS databases during the most recent database audit/synchronization operation. The selection criteria comprise **Site Name**, **Action**, **NPC Hier**, **Ext**, **ID**, **Date**, and **Time**. The form parallels the DATABASE AUDIT/SYNCHRONIZATION form. You need to enter the same **Action** and range on the report form as you did on the DATABASE AUDIT/SYNCHRONIZATION form in order to obtain the desired report.

Database Audit/Synchronization Report (Continued)

DND GUI: Sample Report Form Figure 16-39 displays a sample AUDIT/SYNCHRONIZATION Report form.

The screenshot shows a Java applet window titled "AUDIT/SYNCHRONIZATION SEARCH CRITERIA". The interface includes the "dnd" logo and an "Alarms" button. The form is divided into several sections: "SITE AND FORMAT" with a "Site Name" dropdown (set to "Brazil-CEF") and a "Report Title" text field; "WHICH?" with a list of actions (ALARM SYNC, CHANNEL AUDIT, CHANNEL SYNC, NPC AUDIT, NPC SYNC, MMFG AUDIT, MMFG SYNC, UPLOAD) and a "Report Type" section (Detailed, Exceptions Only); "Date and Time Search Information" with "DATE" and "TIME" filters, each containing dropdowns for Day, Month, Year, Hour, Minute, and Second, and a "Range" section with comparison operators. At the bottom are "Continue...", "Restart", and "Close" buttons. The status bar at the bottom indicates "Unsigned Java Applet Window".

Figure 16-39. DND GUI: Sample AUDIT/SYNCHRONIZATION Report Form

Database Audit/Synchronization Report (Continued)

DND Forms: Sample Report Form

Figure 16-40 displays a sample DATABASE AUDIT/SYNCHRONIZATION Report form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty, and the "Alarms:" field lists "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below this is a section titled "AUDIT/SYNCHRONIZATION SEARCH CRITERIA". The "Site Name:" field is set to "A-CEF-01-NJ-Manalapan". The "Action:" field is set to "ALARM SYNC" and the "Report Type:" field is set to "DETAILED". The "NPC ID:" field is set to "Hier: 02301" and the "Ext:" field is empty. The "LAST NPC ID:" field is set to "Hier: 02310" and the "Ext:" field is empty. The "Date:" field is set to "_ _ _ _" and the "Time:" field is set to "_ _ : _ _ : _ _". Below the search criteria section is a prompt "Enter the NPC Number (Extended format):" followed by the text "jessica: UI-03". At the bottom of the window are five buttons: "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-40. DND Forms: Sample DATABASE AUDIT/SYNCHRONIZATION Report Form

Database Audit/Synchronization Report (Continued)

Field Descriptions The field values for the AUDIT/SYNCHRONIZATION Report form are described in Table 16-11.

Table 16-11. Field Descriptions for the AUDIT/SYNCHRONIZATION Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI and Forms:</i> Action	(Radio buttons) Select the type of Audit/Sync report to generate. For additional information, refer to the Field Descriptions tables in Chapter 17, Database Audit/Synchronization.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> Report Type	(Radio buttons) Select the kind of information to display in the report. The choices are: ■ Detailed - Display a detailed report ■ Exceptions Only - Display a report only showing the differences between the databases.
<i>GUI: NPC Specifier/ NPC/Last NPC Forms: NPC ID/Hier/ Ext/Last NPC ID</i>	(Radio buttons/Text field) Select the NPC(s) to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 8, NPC Provisioning.
<i>GUI: MMFG Specifier/ MMFG/Last MMFG</i>	(Radio buttons/Text field) Select the MMFG(s) to display in the report. For additional information, refer to the Field Descriptions tables in Chapter 10, MMFG Provisioning.
<i>GUI and Forms:</i> Date	(Combo boxes) Select the date criteria for the report. The Date fields are: ■ Day - Select the day (01 through 31) ■ Month - Select the month (Jan through Dec) ■ Year - Select the year (1990 through 2037)

Table 16-11. Field Descriptions for the AUDIT/SYNCHRONIZATION Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> (Date) Range	(Radio buttons) Select the Date range for the report. The choices are: ■ = - Displays alarms which occurred ON the Date ■ > - Displays alarms which occurred AFTER the Date ■ < - Displays alarms which occurred BEFORE the Date
<i>GUI and Forms:</i> Time	(Combo boxes) Select the time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)
<i>GUI and Forms:</i> (Time) Range	(Radio buttons) Select the Time range to display in the report. The choices are: ■ = - Displays alarms which occurred ON the Time ■ > - Displays alarms which occurred AFTER the Time ■ < - Displays alarms which occurred BEFORE the Time

Database Audit/Synchronization Report (Continued)

Sample AUDIT/ SYNC Report

Figure 16-41 displays a sample DATABASE AUDIT/SYNCHRONIZATION Report.

```
10 Mar 1999  11:21:05
-----A-CEF-03-WA-Olympia-----AUDIT/SYNCHRONIZATION-----RESULTS-----
Action: NPC SYNC      Date: 10Mar99  Time: 11:14:49  Master_DB: Frame

NPC: 02303  ID: 02303NPC001

          -Local-                      -Frame-

Mismatch: IS/DE100/7F                      NPC not equipped

Remove      02303NPC001
  The Local Remove command completed successfully
Delete      02303NPC001
  The Local Delete command completed successfully
```

Figure 16-41. Sample DATABASE AUDIT/SYNCHRONIZATION Report

Echoed Response Processing Report

Description

The ECHOED RESPONSE PROCESSING (ERP) Report lists messages that are received by the DND, and were initiated by a DACS independently; for example, they report changes in provisioning that were not in response to user requests through the DND.

The form allows you to search by type of message, date and time. On this form, the **Site Name** is a mandatory entry.

DND GUI: Sample Report Form

Figure 16-42 displays a sample ECHOED RESPONSE PROCESSING Report form.

The screenshot shows a Java applet window titled "ECHOED RESPONSE PROCESSING SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo and an "Alarms" button in the top right. The form is divided into several sections:

- SITE AND FORMAT**: Contains a "Site Name" dropdown menu with "Brazil-CEF" selected, and a "Report Title" text input field.
- WHICH?**: A section for selecting the ERP Type, with a list of checkboxes: "All" (checked), "Circuit", "NPC", "Test Access", and "DS3 (MMFC)".
- DATE**: Contains dropdown menus for "Day", "Month", and "Year", each with an asterisk in the first position. To the right is a "Range" section with a checked checkbox and three navigation buttons: "=", ">", and "<".
- TIME**: Contains dropdown menus for "Hour", "Minute", and "Second", each with an asterisk in the first position. To the right is a "Range" section with a checked checkbox and three navigation buttons: "=", ">", and "<".

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The bottom status bar of the window reads "Unsigned Java Applet Window".

Figure 16-42. DND GUI: Sample ECHOED RESPONSE PROCESSING Report Form

Echoed Response Processing Report (Continued)

DND Forms: Sample Report Form

Figure 16-43 displays a sample ECHOED RESPONSE PROCESSING Report form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The status bar at the top indicates "Status:" and "Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". The main content area is titled "ECHOED RESPONSE PROCESSING SEARCH CRITERIA" and contains the following fields:

- Site Name:** A-CEF-01-NJ-Manalapan
- Type:** CKT
- Date:** ≥ 01 Mar 99
- Time:** ≥ 12:00:00

Below the form, there is a prompt "Enter site name:" and a user identifier "jessica: UI-03". At the bottom, there is a row of buttons: HELP, CHOICES, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 16-43. DND Forms: Sample ECHOED RESPONSE PROCESSING Report Form

Echoed Response Processing Report (Continued)

Field Descriptions The field values for the ECHOED RESPONSE PROCESSING Report form are described in Figure 16-12.

Table 16-12. Field Descriptions for the ECHOED RESPONSE PROCESSING Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI: ERP Type</i> <i>Forms: Type</i>	(Radio buttons) Select the ERP messages to display in the report. The choices are: ■ All - Display all ERP messages ■ Circuit - Display all Circuit ERP messages ■ NPC - Display all NPC ERP messages ■ Test Access - Display all test access ERP messages
<i>GUI and Forms:</i> Date	(Combo boxes) Select the date criteria for the report. The Date fields are: ■ Day - Select the day (01 through 31) ■ Month - Select the month (Jan through Dec) ■ Year - Select the year (1990 through 2037)

Table 16-12. Field Descriptions for the ECHOED RESPONSE PROCESSING Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> (Date) Range	(Radio buttons) Select the date Range for the report. The choices are: ■ = - Displays alarms which occurred ON the Date ■ > - Displays alarms which occurred AFTER the Date ■ < - Displays alarms which occurred BEFORE the Date
<i>GUI and Forms:</i> Time	(Combo boxes) Select the time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)
<i>GUI and Forms:</i> (Time) Range	(Radio buttons) Select the time Range to display in the report. The choices are: ■ = - Displays alarms which occurred ON the Time ■ > - Displays alarms which occurred AFTER the Time ■ < - Displays alarms which occurred BEFORE the Time

Echoed Response Processing Report (Continued)

Sample ERP Report

Figure 16-44 displays a sample ECHOED RESPONSE PROCESSING report.

```
10 Mar 1999 11:35:20
-----A-CEF-03-WA-Olympia-----ECHOED RESPONSE PROCESSING-----RESULTS-----
Date      Time      Type Action      Identifier      E
08Mar99   13:14:19  CKT  ACTIVATE    ERP 02319-001 02319-002 BW/01 FDX:0
The command completed successfully

08Mar99   13:22:22  CKT  DELETE      ERP 02319-001 02319-002 BW/01 FDX:0
The command completed successfully

09Mar99   16:15:17  NPC  RESTORE      No.: 02205 ID: UNEQUIPPED
The NPC does not exist in the DND database

09Mar99   16:16:03  NPC  GROWTH       No.: 02206 ID: 02206NPC001
The command completed successfully

09Mar99   16:16:08  NPC  RESTORE      No.: 02206 ID: 02206NPC001
The command completed successfully

09Mar99   16:21:31  CKT  ACTIVATE      NPC 02205 not in DB for ERP circuit
NPC "02205" does not exist in A-CEF-03-WA-Olympia

10Mar99   11:15:52  NPC  REMOVE        No.: 02201 ID: UNEQUIPPED
The NPC does not exist in the DND database

10Mar99   11:17:20  NPC  RESTORE      No.: 02201 ID: UNEQUIPPED
The NPC does not exist in the DND database
```

Figure 16-44. Sample ECHOED RESPONSE PROCESSING Report

NPC Report

Description

The NPC Report provides a report on NPC records. The data was entered in the NPC PROVISIONING form, or placed in the database through ERP or audit/synchronization.

This form has four different variations - the generic NPC Report form, which displays if no PM option is specified, and the specific NPC Report forms with special fields for the NAS, CEPT, or CEPT PA PM options.

The SEARCH CRITERIA form is similar to the NPC PROVISIONING forms. You can specify search criteria for fields that do not appear on the report. Moreover, you can use search criteria in the status fields, which are not accessible on the NPC PROVISIONING form.

MMFG Provisioning Report (Continued)

DND GUI: Sample Report Form

Figure 16-45 and Figure 16-46 display a sample MMFG PROVISIONING Report form

Top Part.

The screenshot shows a Java applet window titled "MMFG PROVISIONING SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo and a red "Alarms" button. The form is divided into several sections:

- SITE AND FORMAT**: Contains a "Site Name" dropdown menu with "CEF" selected, an "Available Formats" dropdown menu with "MMFG PM OPTIONS 15MN" selected, and a "Report Title" text field with "Sample MMFG Provisioning Report" entered.
- MMFG**: Contains an "MMFG ID" text field and a "Number" text field.
- MXR**: Contains an "MXR State" section with radio buttons for "All" (selected), "IS", and "OOS". Below it is an "MXR Type" section with radio buttons for "All" (selected), "MX100", "MX200", "EX100", "EX200", "HX110", and "HX100".
- MIU**: Contains an "MIU State" section with radio buttons for "All" (selected), "IS", and "OOS". Below it is an "MIU Type" section with radio buttons for "All" (selected) and "MI100".

The bottom of the window shows a status bar with the text "Unsigned Java Applet Window".

Figure 16-45. DND GUI: Sample MMFG Provisioning Report Form - Top Part

MMFG Provisioning Report (Continued)

DND GUI: Sample Report Form

Figure 16-45 displays the bottom part of a sample MMFG PROVISIONING Report form.

MMFG PROVISIONING SEARCH CRITERIA

DACS Provisioning Options

BERM (bit error rate method): ☒ All ☐ BPV ☐ PARITY ☐ BPV+PARITY

BERT (bit error rate threshold): ☒ All ☐ 10-3 ☐ 10-6

LBO (line buildout): ☒ All ☐ On ☐ Off

Line PM

Near End 15 Minute Counts

Coding Violations: *
Errored Seconds: *
Severely Errored Seconds: *

Near End 24 Hour Counts

Coding Violations: *
Errored Seconds: *
Severely Errored Seconds: *

Path PM

Near End 15 Minute Counts

Coding Violations: *
F and M Bit Violations: *
Errored Seconds: *
Severely Errored Seconds: *
Unavailable Seconds: *

Near End 24 Hour Counts

Coding Violations: *
F and M Bit Violations: *
Errored Seconds: *
Severely Errored Seconds: *
Unavailable Seconds: *

Far End 15 Minute Counts

Severely Errored Seconds: *

Far End 24 Hour Counts

Severely Errored Seconds: *

Back **Execute** **Restart** **Close**

The command completed successfully

Unsigned Java Applet Window

Figure 16-46. DND GUI: Sample MMFG Provisioning Report Form - Bottom Part

MMFG Provisioning Report (Continued)

Field Descriptions The field values for the MMFG PROVISIONING Report form are described in Table 16-13.

Table 16-13. Field Descriptions for the MMFG Provisioning Report Form

Field	Description
Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Available Formats	(Combo box) Select an MMFG Provisioning Report format. The following formats are available: ■ <i>MMFG PM Options 15MN</i> ■ <i>MMFG Provisioning</i> ■ <i>MMFG PM Options 24HR</i>
Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
MMFG ID	(Text Field) Enter the Circuit ID . For additional information, refer to the Field Description tables in Chapter 10Z, MMFG Provisioning.
Number	(Text Field) Enter the number of the MMFG. For additional information, refer to the Field Description tables in Chapter 10, MMFG Provisioning.
MXR State	(Combo box) Select an MXR State . ■ <i>All</i> ■ <i>IS</i> - in service ■ <i>OOS</i> - out of service

Table 16-13. Field Descriptions for the MMFG Provisioning Report Form

Field	Description
MXR Type	(Combo box) Select an MXR Type . ■ MX100 - KCR-1 circuit pack with M13 framing ■ MX200 - KCR-1 circuit pack with C-bit parity framing ■ EX100 - KCR-5 circuit pack with M13 framing ■ EX200 - KCR-5 circuit pack with C-bit parity framing ■ HX110 - KCR-8 Hybrid circuit pack with M13 framing and ANSI interpretation of X-bit values ■ HX100 - KCR-8 Hybrid circuit pack with M13 framing and reverse ANSI interpretation of X-bit values
MIU State	(Combo box) Select an MIU State . ■ <i>All</i> ■ <i>IS</i> - in service ■ <i>OOS</i> - out of service
MIU Type	(Combo box) Select an MIU Type . ■ <i>All</i> ■ <i>MI100</i>
BERM	(Radio Button) Select a BERM (bit error rate calculation method). For additional information, refer to the Field Description tables in Chapter 10, MMFG Provisioning. ■ <i>All</i> ■ <i>BPV</i> - Bipolar violations ■ <i>PARITY</i> - DS3 Parity Errors ■ <i>BPV+PARITY</i>
BERT	(Radio Button) Select a BERT (bit error rate threshold). For additional information, refer to the Field Description tables in Chapter 10, MMFG Provisioning. ■ <i>All</i> ■ <i>10-3</i> ■ <i>10-6</i>

Table 16-13. Field Descriptions for the MMFG Provisioning Report Form

Field	Description
LBO	(Radio Button) Select an LBO (line buildout). For additional information, refer to the Field Description tables in Chapter 10, MMFG Provisioning. ■ <i>All</i> ■ <i>ON</i> ■ <i>OFF</i>
Line PM	(Combo boxes) Select values for the following Line Performance Monitoring options: ■ Near End 15 Minute Counts — Coding Violations — Errored Seconds — Severely Errored Seconds ■ Near End 24 Hour Counts — Coding Violations — Errored Seconds — Severely Errored Seconds  NOTE: For additional information, refer to the Field Description tables in Chapter 10, MMFG Provisioning.

Table 16-13. Field Descriptions for the MMFG Provisioning Report Form

Field	Description
Path PM	(Combo boxes) Select values for the following Path Performance Monitoring options: ■ Near End 15 Minute Counts — Coding Violations — F adn M Bit Violations — Errored Seconds — Severely Errored Seconds — Unavailable Seconds ■ Near End 24 Hour Counts — Coding Violations — F adn M Bit Violations — Errored Seconds — Severely Errored Seconds — Unavailable Seconds ■ Far End 15 Minute Counts — Severely Errored Seconds ■ Far End 24 Hour Counts — Severely Errored Seconds

MMFG Provisioning Report (Continued)

Sample Reports Figure 16-47 to Figure 16-49 display sample MMFG PROVISIONING Reports. Not all Provisioning Options are show in these samples.

REPORT TITLE: Sample MMFG PM Options 15 MN Report

```

17 Dec 1999 15:47:09
-----CEF-----MMFG PROVISIONING-----MMFG PM OPTIONS 15MN----
MMFG_Num MXR_Type MIU_Type CV15mNEline ERS15mNEline SERS15mNEline CV15mNEpath FM15mNEpath ERS
11-P EX100 0 0 0 0 0 0
11-1 HX100 0 0 0 0 0 0
11-3 EX200 MI100
11-4 MX100
11-6 EX200 2 3 3 3 3 3

```

Figure 16-47. DND GUI: Sample MMFG PROVISIONING Report Form - MMFG PM Options 15MM Format

REPORT TITLE: Sample MMFG Provisioning Report

```

17 Dec 1999 15:54:47
-----CEF-----MMFG PROVISIONING-----MMFG PROVISIONING-----
MMFG_ID MMFG_Num MXR_ServState MXR_Type MIU_ServState MIU_Type BERM BERT L
PMMFG000 11-P OOS EX100
111MMFG000 11-1 OOS HX100 BPV 10-3 0
113MMFG000 11-3 IS EX200 IS MI100 BPV 10-3 0
114MMFG000 11-4 IS MX100 BPV 10-3 0
116MMFG000 11-6 IS EX200 BPV 10-3 0

```

Figure 16-48. DND GUI: Sample MMFG PROVISIONING Report Form - MMFG PROVISIONING Forma

MMFG Provisioning Report (Continued)

Sample Reports (Continued)

REPORT TITLE: MMFG PM OPTIONS 24 HR

17 Dec 1999 15:59:20

```
-----CEF-----MMFG PROVISIONING-----MMFG PM OPTIONS 24HR-----  
MMFG_Num MXR_Type MIU_Type CV24hNEline ERS24hNEline SERS24hNEline CV24hNEpath FM24hNEpath ER  
11-P      EX100           0           0           0           0           0           0  
11-1      HX100           0           0           0           0           0           0  
11-3      EX200      MI100  
11-4      MX100  
11-6      EX200           3           3           3           3           3           3
```

**Figure 16-49. DND GUI: Sample MMFG PROVISIONING Report Form -
MMFG PM Options 24H Format**

User Administration Report

Description

The USER ADMINISTRATION Report displays user login information. The fields that appear in the report contain information that was entered in the USER ADMINISTRATION form.

DND GUI: Sample Report Form

Figure 16-50 displays a sample USER ADMINISTRATION Report form.

USER ADMINISTRATION SEARCH CRITERIA

dnd Alarms

Available Formats: USER LOGINS

Report Title:

User Information

Login Name Phone

User Name Address

Printer City

User Class

User Class: ☒ All ☐ OPERATOR ☐ ADMIN ☐ CONTROLLER

Alarm Audible

Alarm Audible: ☒ All ☐ ON ☐ OFF

UI Idle

UI Idle: ☒ All ☐ ON ☐ OFF

Back Continue... Restart Close

? Enter a report title to label the report window.

Unsigned Java Applet Window

Figure 16-50. DND GUI: Sample USER ADMINISTRATION Report Form - USER LOGIN Format

User Administration Report (Continued)

DND Forms: Sample Report Form

Figure 16-51 displays a sample USER ADMINISTRATION Report form.

The screenshot displays a terminal window titled "DND USER INTERFACE". The window shows the following text:

```
15:39 23 Mar 1999  DND R2.0.1 / DND Forms R7.0.1
Status: Snmp_hdlr000 exited abnormally status=0 Signal 9. Restarting.
Alarms:      A-CEF-01-NJ-Manalapan  A-CEF-02-ND-Fargo  A-CEF-03-WA-Olympia
```

Below this text is a section titled "USER ADMINISTRATION SEARCH CRITERIA" enclosed in a box. The form contains the following fields:

- Login Name: tabby
- User Class: OPERATOR
- User Name: Tabby Terwilliger
- Phone: 740.989.0342
- Printer Name: CONSOLE PRINTER
- Address: _____
- City: Cape May, NJ
- Alarm Audible: ON
- UI Idle Option: ■

Below the box, there is a prompt: "Enter the UI Idle Option".

At the bottom of the window, the text "jessica: UI-03" is displayed. Below this is a row of buttons: **HELP**, **CHOICES**, **QUIT**, **TOP MENU**, **PRINT**, and **EXECUTE**.

**Figure 16-51. DND Forms: Sample USER ADMINISTRATION Report Form -
USER LOGINS Available Format**

User Administration Report (Continued)

Field Descriptions The field values for the USER ADMINISTRATION Report form are described in Table 16-14.

Table 16-14. Field Descriptions for the USER ADMINISTRATION Report

Field	Description
<i>GUI and Forms:</i> Available Formats	(Combo box) Select a USER ADMINISTRATION Report format. The default choices are: ■ <i>USER PARTITION</i> - Displays the partitions associated with a user login. ■ <i>USER CONNECTIVITY</i> - Displays the connection status of each user login. ■ <i>USER LOGINS</i> - Displays the login characteristics of each user login.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> Network Partition Name	(Combo box -displayed only if the <i>USER PARTITION</i> format is selected) Select the name of the partition. For additional information, refer to Chapter 13, User Administration.
<i>GUI and Forms:</i> Login Name	(Text field, 8 characters) Enter the name used for a user's login. For additional information, refer to Chapter 13, User Administration.
<i>GUI and Forms:</i> User Name	(Text field, 40 characters) Enter the name of the user. For additional information, refer to Chapter 13, User Administration.
<i>GUI: Printer Forms:</i> Printer Name	(Combo box - displayed only if the <i>USER LOGINS</i> format is selected) Select the printer used by particular users. For additional information, refer to Chapter 13, User Administration.
<i>GUI and Forms:</i> Phone	(Text field) Enter the phone number of a user. For additional information, refer to Chapter 13, User Administration.
<i>GUI and Forms:</i> Address	(Text field) Enter the address of a user. For additional information, refer to Chapter 13, User Administration.

**Table 16-14. Field Descriptions for the USER ADMINISTRATION Report
(Continued)**

Field	Description
<i>GUI and Forms:</i> City	(Text field) Enter the city of a user. For additional information, refer to Chapter 13, User Administration.
<i>GUI and Forms:</i> User Class	(Radio buttons) The choices are: ■ <i>All</i> - Display report entries for all DND users ■ <i>OPERATOR</i> - Display report entries for all operators ■ <i>ADMIN</i> - Display report entries for all administrators ■ <i>CONTROLLER</i> - Display report entries for all controllers.
<i>GUI: User Type</i> <i>Forms: Type</i>	(Radio buttons - displayed only if the <i>USER CONNECTIVITY</i> format is selected) The choices are: ■ <i>All</i> - Display report entries for users connected via any connection ■ <i>ASYNC</i> - Display report entries for users connected via an asynchronous link ■ <i>X25</i> - Display report entries for users connected via an X.25 link ■ <i>LOCAL</i> - Display report entries for users connected directly to the DND ■ <i>BROWSR</i> - Display report entries for users connected via a browser.
<i>GUI and Forms:</i> Alarm Audible	(Radio buttons - displayed only if the <i>USER LOGINS</i> format is selected) Select the Alarm Audible option. The choices are: ■ <i>All</i> - Display report entries for users set with either Alarm Audible option. ■ <i>ON</i> - Display report entries for users with the Alarm Audible option <i>ON</i>. ■ <i>OFF</i> - Display report entries for users with the Alarm Audible option <i>OFF</i>.

**Table 16-14. Field Descriptions for the USER ADMINISTRATION Report
(Continued)**

Field	Description
<i>GUI: UI Idle</i> <i>Forms: UI Idle Option</i>	(Radio buttons - displayed only if the <i>USER LOGINS</i> format is selected) Select the UI Idle option. The choices are: ■ <i>All</i> - Display report entries for users set with either UI Idle option. ■ <i>ON</i> - Display report entries for users with the UI Idle option <i>ON</i>. ■ <i>OFF</i> - Display report entries for users with the UI Idle option <i>OFF</i>.

User Administration Report (Continued)

Sample USER ADMIN Reports

The three default USER ADMINISTRATION Report formats are:

- USER PARTITION
- USER CONNECTIVITY
- USER LOGINS

USER PARTITION

USER PARTITION concentrates on the partitions associated with each user logged into the system. The user's login, partition, and class are listed. Figure 16-52 displays an example of this format.

10 Mar 1999 16:53:07

-----COMMON-----USER ADMINISTRATION-----USER PARTITION-----

Login	Partition	Class
adm-East	East-Coast-Region	ADMIN
bobm	East-Coast-Region	CONTROLLER
cscan	East-Coast-Region	CONTROLLER
ems	East-Coast-Region	OPERATOR

Figure 16-52. Sample USER ADMINISTRATION Report - *USER PARTITION* Format

(Continued on next page)

User Administration Report (Continued)

Sample USER ADMIN Reports, Continued

USER CONNECTIVITY

USER CONNECTIVITY concentrates on the connection status of each user logged into the system. The user's login, name, connectivity type and class are listed. Figure 16-53 displays an example of this format.

10 Mar 1999 16:57:16

-----COMMON-----USER ADMINISTRATION-----USER CONNECTIVITY-----

Login	Name	Type	Class
dacsadm	Default ADMIN Login	BROWSR	ADMIN
dacsadm	Default ADMIN Login	BROWSR	ADMIN

Figure 16-53. Sample USER ADMINISTRATION Report - *USER CONNECTIVITY* Format

USER LOGINS

USER LOGINS concentrates on the login characteristics of each user logged into the system. The user's login, name, phone, and login class are listed. Figure 16-54 displays an example of this format.

10 Mar 1999 17:05:07

-----COMMON-----USER ADMINISTRATION-----USER LOGINS-----

Login	Name	Phone	Class
cain	Cain Abelson		OPERATOR
cindy	Cindy Evans		OPERATOR
cscan	CSCAN	654-2222	CONTROLLER

Figure 16-54. Sample USER ADMINISTRATION Report - *USER LOGINS* Format

DACS Frames/Links Report

Description

The DACS FRAMES/LINKS Report provides information entered into the DND during the provisioning of DACS frames and the links through which communication to the DACS is effected. Three default formats are provided. The fields that appear on the form contain information that was entered on the FRAME ADMINISTRATION (DND Forms)/NE PROVISIONING (DND GUI) and X.25 LINK ADMINISTRATION (DND Forms) forms. The report form allows users to search by both frame and link data.

DACS Frames/Links Report (Continued)

DND GUI: Sample Report Form

Figure 16-55 and Figure 16-56 display a sample DACS FRAMES/LINKS Report form.

Top of Form:

The screenshot shows the 'DACS FRAMES/LINKS SEARCH CRITERIA' window. It features a 'dnd' logo and an 'Alarms' button. The form is organized into several sections:

- SITE AND FORMAT:** Includes a 'Site Name' dropdown, an 'Available Formats' dropdown (currently showing 'FRAME CONTROL'), and a 'Report Title' text field.
- DACS Information:** Contains checkboxes for 'Dacs Type' (All, DACS II, D II ISX), 'Protocol' (All, SNIDER, X.25, TCP), 'Language' (All, MML, PDS), 'NPC Addressing' (All, HIER, EXT3, EXT4), 'Generic' text field, 'Location' text field, and a 'Site Status' list with checkboxes for All, OOS, IS P, IS B, ALM, QRY, ERR, and AS.
- Primary Line:** Includes a 'Primary Line' text field, a 'Range' dropdown, 'Snider Speed' checkboxes (All, 1200, 2400, 4800, 9600), a 'Range' dropdown, 'Connection Type' (All, DIRECT, PDN), 'Network Address' text field, and a 'Line Status' list with checkboxes for All, OOS, IS P, IS B, ALM, QRY, ERR, and AS.
- Backup Line:** Includes a 'Backup Line' text field, a 'Range' dropdown, 'Connection Type' (All, DIRECT, PDN), 'Network Address' text field, and a 'Line Status' list with checkboxes for All, OOS, IS P, IS B, ALM, QRY, ERR, and AS.

The window is identified as an 'Unsigned Java Applet Window' at the bottom.

**Figure 16-55. DND GUI: Sample DACS FRAMES/LINKS Report Form -
Top half**

(Continued on next page)

DACS Frames/Links Report (Continued)

DND GUI: Sample Bottom of Form: Report Form, Continued

The screenshot displays the 'DACS FRAMES/LINKS SEARCH CRITERIA' window. It contains several sections for configuring search parameters:

- TCP/IP Communications Protocol Information:** Includes input fields for 'IP address' and 'DACS user name'.
- DND Processing Options:**
 - Alarm Sync:** Features an 'Alarm Sync' input field and a 'Range' selector with checkboxes for '=', '>', and '<'.
 - Conditional ERP:** Includes checkboxes for 'All', 'ON', and 'OFF'.
 - Alarm Intervention:** Includes checkboxes for 'All', 'ON', and 'OFF'.
- Message Log Recovery Information:**
 - DACS Log Recovery:** Features a 'DACS Log Recovery' input field and a 'Range' selector with checkboxes for '=', '>', and '<'.
 - DACS Link Failure Length:** Features a 'DACS Link Failure Length' input field and a 'Range' selector with checkboxes for '=', '>', and '<'.

At the bottom of the form are three buttons: 'Continue...', 'Restart' (with a circular arrow icon), and 'Close' (with a red X icon). The window title bar indicates it is an 'Unsigned Java Applet Window'.

Figure 16-56. DND GUI: DACS FRAMES/LINKS Report Form - Bottom half

DACS Frames/Links Report (Continued)

DND Forms: Sample Report Form

Figure 16-57 displays a sample FRAMES/LINKS Report form.

The screenshot displays a terminal window titled "DND USER INTERFACE". The interface shows the following information:

Status:
Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia

FRAMES/LINKS PROVISIONING SEARCH CRITERIA

Site Name: A-CEF-01-NJ-Manalapan Site Status: ERR
Type: DACS II Protocol: X.25 Language: MHL
NPC Addressing: HIER Location: _____ Generic: _____
ERP Control: ON Alarm Sync: _____

Primary Line: 1 _____
Connection Type: _____ Network Address: _____ Status: _____
Snider Speed: _____

Backup Line: _____
Connection Type: _____ Network Address: _____ Status: _____

Enter search character '<', '>' or leave blank _____
jessica: UI-03

At the bottom, there are several buttons: **HELP**, **QUIT**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 16-57. DND Forms: Sample FRAMES/LINKS Report Form

DACS Frames/Links Report (Continued)

Field Descriptions The field values for the DACS FRAMES/LINKS Report form are described in Table 16-15.

Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI and Forms:</i> Available Formats (In <i>Forms</i> , this is a pop-up window)	(Combo box) Select a DACS FRAMES/LINKS Report format. The choices are: ■ <i>FRAME CONTROL</i> - Lists the values of various control fields from the FRAME PROVISIONING/NE PROVISIONING forms ■ <i>LINK CONNECTIVITY</i> - Lists information for the primary and backup links that have been connected to a given DACS. If the backup line data is not present, then the backup line have not been provisioned. ■ <i>PROVISIONING</i> - Lists identifying information for the frames that have been provisioned.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI: DACS Type</i> <i>Forms: Type</i>	(Radio buttons) Select the type of DACS frame. The choices are: ■ <i>All</i> - Display DACS II and DACS II ISX frames ■ <i>DACS II</i> - Display DACS II frames ■ <i>D II ISX</i> - Display DACS II ISX frames.

**Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> Protocol	(Radio buttons) The choices are: ■ <i>All</i> - Display DACS frames with SNIDER and X.25 protocol ■ <i>SNIDER</i> - Display DACS frames with SNIDER protocol ■ <i>X.25</i> - Display DACS frames with X.25 protocol ■ <i>TCP/IP</i> - Display DACS frames with TCP/IP protocol.
<i>GUI and Forms:</i> Generic	(Text field) Enter the software generic number running on the DACS in the format x.y.
<i>GUI and Forms:</i> Language	(Radio buttons) Select the language used to communicate with the DACS. The choices are: ■ <i>All</i> - Display DACS frames using MML and PDS languages (currently, this will default to MML) ■ <i>MML</i> - Display DACS frames using the MML language ■ <i>PDS</i> - Display DACS frames using the PDS language (currently inoperable).
<i>GUI and Forms:</i> NPC Addressing	(Radio buttons) Select the NPC Addressing scheme assigned to the DACS. The choices are: ■ <i>All</i> - Display DACS frames using hierarchical, 3-digit extended, and 4-digit extended numbering ■ <i>HIER</i> - Display DACS frames using hierarchical numbering ■ <i>EXT3</i> - Display DACS frames using 3-digit extended numbering ■ <i>EXT4</i> - Display DACS frames using 4-digit extended numbering
<i>GUI and Forms:</i> Location	(Text field) Enter the location of the DACS.

**Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> Site Status	(Radio buttons) Select the service status of the DACS. The choices are: ■ <i>All</i> - Display DACS frames of every status ■ <i>OOS</i> - Display DACS frames which are Out-of Service ■ <i>IS P</i> - Display DACS frames which are In-Service via the primary line ■ <i>IS B</i> - Display DACS frames which are In-Service via the backup line ■ <i>ALM</i> - Display DACS frames which are in alarm ■ <i>QRY</i> - Display DACS frames which are in query ■ <i>ERR</i> - Display DACS frames which are in error (i.e. the IP address of the database and the actual line do not match) ■ <i>AS</i> - Display DACS frames in audit/sync.
<i>GUI and Forms:</i> Primary Line	(Text field) Enter the number of the primary line. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.
<i>GUI and Forms:</i> (Primary Line) Range	(Radio buttons) Select the Primary Line range. The choices are: ■ = - (<i>GUI only</i>) Display information for the line with the number EQUAL to Primary Line ■ > - Display information for the lines with numbers GREATER than Primary Line ■ < - Display information for the lines with numbers GREATER than Primary Line
<i>GUI and Forms:</i> Snider Speed	(Radio buttons) Select the speed of the SNIDER connection. The choices are: ■ <i>All</i> - Display DACS frames running on all speeds ■ <i>1200</i> - Display DACS frames running on 1.2 kbps ■ <i>2400</i> - Display DACS frames running on 2.4 kbps ■ <i>4800</i> - Display DACS frames running on 4.8 kbps ■ <i>9600</i> - Display DACS frames running on 9.6 kbps

**Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (Snider Speed) Range	(Radio buttons) Select the Snider Speed range. The choices are: ■ = - (<i>GUI only</i>) Display DACS frames with the speed EQUAL to Snider Speed ■ > - Display DACS frames with speeds GREATER than Snider Speed ■ < - Display DACS frames with speeds GREATER than Snider Speed
<i>GUI: (Primary and Backup Line) Line Status</i> <i>Forms: Status</i>	(Radio buttons) Select the primary/backup line status. The choices are identical to the Site Status choices previously described in this table.
<i>GUI and Forms:</i> (Primary and Backup Line) Connection Type	(Radio buttons) Select the primary/backup connection type. The choices are: ■ <i>All</i> - Display DACS frames with direct and packet-data network connections ■ <i>DIRECT</i> - Display DACS frames with direct connections ■ <i>PDN</i> - Display DACS frames with packet-data network (indirect) connections
<i>GUI and Forms:</i> (Primary and Backup Line) Network Address	(Text field) Enter the IP address of the primary/backup line.
<i>GUI and Forms:</i> Backup Line	(Text field) Enter the number of the backup line. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.
<i>GUI and Forms:</i> IP Address	(Text field) Enter the IP address at the DACS. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.
<i>GUI and Forms:</i> DACS User Name	(Text field) Enter the DACS User Name at the DACS. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.

**Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (Backup Line) Range	(Radio buttons) Select the Backup Line range. The choices are: ■ = - (<i>GUI only</i>) Display information for the line with the number EQUAL to Backup Line ■ > - Display information for the lines with numbers GREATER than Backup Line ■ < - Display information for the lines with numbers GREATER than Backup Line
<i>GUI and Forms:</i> Alarm Sync	(Text field) Enter the Alarm Sync value for the DACS. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.
<i>GUI and Forms:</i> (Alarm Sync) Range	(Radio buttons) Select the Alarm Sync range. The choices are: ■ = - Display DACS frames with an Alarm Sync value EQUAL to Alarm Sync ■ > - Display DACS frames with an Alarm Sync value GREATER than Alarm Sync ■ < - Display DACS frames with an Alarm Sync value LESS than Alarm Sync.
<i>GUI and Forms:</i> DACS Log Recovery	(Text field) Enter the Log Recovery value for the DACS. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.
<i>GUI and Forms:</i> (DACS Log Recovery) Range	(Radio buttons) Select the Log Recovery range. The choices are: ■ = - Display DACS frames with an Log Recovery value EQUAL to Log Recovery ■ > - Display DACS frames with an Log Recovery value GREATER than Log Recovery ■ < - Display DACS frames with an Log Recovery value LESS than Log Recovery.
<i>GUI and Forms:</i> DACS Link Failure Length	(Text field) Enter the Link Failure Length value for the DACS. For additional information, refer to the Field Description tables in Chapter 5, NE Provisioning.

**Table 16-15. Field Descriptions for the DACS FRAMES/LINKS Report Form
(Continued)**

Field	Description
<i>GUI and Forms:</i> (DACS Link Failure Length) Range	(Radio buttons) Select the Link Failure Length range. The choices are: ■ = - Display DACS frames with an Link Failure Length value EQUAL to Link Failure Length ■ > - Display DACS frames with an Link Failure Length value GREATER than Link Failure Length ■ < - Display DACS frames with an Link Failure Length value LESS than Link Failure Length.
<i>GUI and Forms:</i> Alarm Intervention	(Radio buttons) Select the Alarm Intervention control. The choices are: ■ All - Display DACS frames with Alarm Intervention on and off ■ ON - Display DACS frames with Alarm Intervention turned on ■ OFF - Display DACS frames with Alarm Intervention turned off.
<i>GUI: Conditional ERP Forms: ERP Control</i>	(Radio buttons) Select the ERP control. The choices are: ■ All - Display DACS frames with conditional ERP on and off ■ ON - Display DACS frames with conditional ERP turned on ■ OFF - Display DACS frames with conditional ERP turned off.

DACS Frames/Links Report (Continued)

Sample DACS FRAMES/LINKS Reports

The three default DACS FRAMES/LINKS Report formats are:

- FRAME CONTROL
- LINK CONNECTIVITY
- PROVISIONING

FRAME CONTROL

FRAME CONTROL concentrates on the frame characteristics of the DACS. The DACS' site name, location, generic, ERP control, and alarm sync codes are listed. Figure 16-58 displays an example of this format.

10 Mar 1999 17:45:59

```
-----COMMON-----FRAMES/LINKS-----FRAME CONTROL-----  
  
Sitename           Location      Generic  ERP Alm_Sync  
  
A-ISX-01-NJ-Manalapan  Manalapan    3.1      OFF 00  
A-ISX-02-ND-Bismarck   lab          3.1      OFF 00  
A-ISX-03-WA-Olympia    lab          3.1      OFF 00  
A-ISX-04-AZ-Phoenix    Phoenix      3.1      OFF 00  
A-ISX-05-TX-Dallas     JR & Bobby   3.1      OFF 01
```

Figure 16-58. Sample DACS FRAMES/LINKS Report - *FRAME CONTROL* Format

(Continued on next page)

DACS Frames/Links Report (Continued)

Sample DACS FRAMES/LINKS Reports, Continued

LINK CONNECTIVITY

LINK CONNECTIVITY concentrates on the link connection information of the DACS. The DACS' site name, protocol, network address, and speed are listed. Figure 16-59 displays an example of this format.

10 Mar 1999 17:27:34

-----COMMON-----FRAMES/LINKS-----LINK CONNECTIVITY-----

Sitename	Protcl	Network_Addr	Speed	Network_Addr
A-CEF-01-NJ-Manalapan	X.25	7327853406		
A-CEF-02-ND-Fargo	X.25	3166171134		3166171134
A-CEF-03-WA-Olympia	X.25	8089980434		8089980434
A-CEF-04-AZ-Phoenix	X.25	7304345512		7304345512
A-CEF-05-TX-Dallas	X.25	9076740456		9076740456

Figure 16-59. Sample DACS FRAMES/LINKS Report - *LINK CONNECTIVITY* Format

(Continued on next page)

DACS Frames/Links Report (Continued)

Sample DACS FRAMES/LINKS Reports, Continued

PROVISIONING

PROVISIONING concentrates on the provisioning characteristics of the DACS. The DACS' site name, service status, DACS type, protocol, language, and NPC addressing are listed. Figure 16-60 displays an example of this format.

10 Mar 1999 17:49:55

-----COMMON-----FRAMES/LINKS-----PROVISIONING-----

Sitename	Status	C	Type	Protocol	Lang	NPC_Addr
A-CEF-01-NJ-Manalapan	IS	P	* DACS II	X.25	MML	HIER
A-CEF-02-ND-Fargo	IS	P	* DACS II	X.25	MML	HIER
A-CEF-03-WA-Olympia	IS	P	* DACS II	X.25	MML	HIER
A-CEF-04-AZ-Phoenix	IS	P	* DACS II	X.25	MML	HIER
A-CEF-05-TX-Dallas	IS	P	* DACS II	X.25	MML	HIER

Figure 16-60. Sample DACS FRAMES/LINKS Report - PROVISIONING Format

DACS Frames/Links Report (Continued)

Sample DACS FRAMES/LINKS Reports, Continued

TCP/IP CONNECTIVITY

TCP/IP CONNECTIVITY concentrates on the provisioning characteristics of the DACS. The DACS' site name, service status, DACS type, protocol, language, and NPC addressing are listed. Figure 16-60 displays an example of this format.

REPORT TITLE: TCP CONNECTIVITY

30 Dec 1999 11:01:44

-----COMMON-----FRAMES/LINKS-----TCP CONNECTIVITY-----

Sitename	Protocol	IP_Address	DACS_UserName
Brazil-CEF	X.25		
CEF	TCP	205.229.223.173	DACSADM
CEF-3	TCP	205.229.223.173	DACSADM
CEF2	TCP	205.229.223.173	DACSADM
England-ISX	SNIDER		
Japan-CEF	X.25		
WashingtonDC-CEF	X.25		
x	TCP	205.229.223.173	DACSADM

**Figure 16-61. Sample DACS FRAMES/LINKS Report - TCP/IP
CONNECTIVITY Format**

Task Schedule Reports

Description

There are two types of Task Schedule reports:

- TASK SCHEDULE LIST Report
- TASK SCHEDULE RESULTS Report.

TASK SCHEDULE LIST Report

The TASK SCHEDULE LIST Report lists all DND tasks scheduled to be executed. The report form uses the site name and user ID as selection criteria.

TASK SCHEDULE RESULTS Report

The TASK SCHEDULE RESULTS Report lists all scheduled tasks that were executed, along with the results of the execution. This report form also uses the site name and user ID as selection criteria.

DND GUI: Sample Report Form

Figure 16-62 displays a sample TASK SCHEDULE LIST Report form. The TASK SCHEDULE RESULTS Report Form is similar to this form.

The screenshot shows a Java applet window titled "TASK SCHEDULING LIST SEARCH CRITERIA". The window has a dark background with a light blue "dnd" logo in the top left. In the top right, there is a button labeled "Alarms" with a downward arrow. Below the logo, there is a section titled "SITE AND FORMAT" in blue. This section contains three input fields: "Site Name:" with a dropdown menu showing "*", "Available Formats:" with a dropdown menu showing "LIST", and "Report Title:" with a text input field. Below these fields is a "User ID" label followed by a text input field. At the bottom of the form, there are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The bottom of the window shows a status bar with the text "Unsigned Java Applet Window".

Figure 16-62. DND GUI: Sample TASK SCHEDULE LIST Report Form

Task Schedule Reports (Continued)

DND Forms: Sample Report Form

Figure 16-63 displays a sample TASK SCHEDULE LIST Report form. The TASK SCHEDULE RESULTS Report Form is similar to this form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty. The "Alarms:" field displays three entries: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below this is a section titled "TASK SCHEDULING SEARCH CRITERIA" which contains two input fields: "Site Name:" with the value "A-CEF-01-NJ-Manalapan" and "User ID:" with the value "dacsad". Below the search criteria section is a large empty box with the prompt "Enter the User Identifier" at the bottom left. At the bottom of the window, there is a status bar showing "jessica: UI-03" and a row of buttons: "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-63. DND Forms: TASK SCHEDULE LIST/RESULTS Report Form

Task Schedule Reports (Continued)

Field Descriptions The field values for the TASK SCHEDULE LIST and TASK SCHEDULE RESULTS Report forms are described in Table 16-16.

Table 16-16. Field Descriptions for the TASK SCHEDULE LIST/RESULTS Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of Network Element names.
<i>GUI only:</i> Available Formats	(Combo box) Select a TASK SCHEDULE Report format. If no customized formats were created using the DND Forms Interface, the only formats available will be: ■ TASK SCHEDULE LIST Report Form: <i>LIST</i> ■ TASK SCHEDULE RESULTS Report Form: <i>RESULTS</i>.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> User ID	(Text field) Enter the user's login name. For additional information, refer to the Field Description tables in Chapter 13, User Administration.

Sample TASK SCHEDULE LIST Report

Figure 16-64 displays a sample TASK SCHEDULE LIST Report.

User_ID	SiteName	Next_Date	Time	Interval	Last_Date_Time	Status	Description
dacsadm	A-CEF-01-NJ	12Mar99	12:30:00	once		dormant	CREATE NPC npc2404 02404 (0284) PB100
dacsadm	A-CEF-01-NJ	12Mar99	13:00:00	once		dormant	RESTORE NPC 02202NPC001 02202 (0202)
dacsadm	A-CEF-01-NJ	12Mar99	13:05:00	once		dormant	RESTORE NPC 02206NPC001 02206 (0206)
dacsadm	A-CEF-01-NJ	12Mar99	13:06:00	once		dormant	ACTIVATE Circuit ID: npc2202-to-npc2206
dacsadm	A-CEF-01-NJ	13Mar99	00:00:00	once		dormant	CREATE NPC npc2403 02403 (0283) PB100

Figure 16-64. Sample TASK SCHEDULE LIST Report

Task Schedule Reports (Continued)

Sample TASK SCHEDULE RESULTS Report

Figure 16-65 displays a sample TASK SCHEDULE RESULTS Report.

User_ID	Sitename	Omp_Date	Time	Status
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:19:08	CREATE NPC NJ02223 02223 (0223) PA164^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:40:42	RESTORE NPC NJ02223 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:45:57	MODIFY NPC 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:48:00	RESTORE NPC NJ02223 02223 (0223)^The NPC is in service in the DND database
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:48:01	RESTORE NPC NJ02223 02223 (0223)^The NPC is in service in the DND database
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:52:06	LOOPBACK NPC NJ02223 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	19:56:06	LOOPBACK NPC NJ02223 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	20:00:07	REMOVE NPC NJ02223 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	08Feb99	20:03:05	DELETE NPC NJ02223 02223 (0223)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	09Feb99	11:37:00	RESTORE NPC npc-02223 02223 (0223)^The NPC does not exist in the DND database
dacsadm	A-CEF-01-NJ-Manalapan	09Feb99	11:37:01	RESTORE NPC npc-02223 02223 (0223)^The NPC does not exist in the DND database
dacsadm	A-CEF-01-NJ-Manalapan	24Feb99	09:13:04	REMOVE NPC 02319NPC001 02319 (0259)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	24Feb99	13:16:10	RESTORE NPC 02319NPC001 02319 (0259)^The command completed successfully
dacsadm	A-CEF-01-NJ-Manalapan	25Feb99	13:00:00	alarm synchronization^The command will be executed in background
dacsadm	A-CEF-01-NJ-Manalapan	25Feb99	13:05:00	NPC Synch: All facility npc [frame]^The command will be executed in background
dacsadm	A-CEF-01-NJ-Manalapan	25Feb99	13:05:00	alarm synchronization^Command denied - database audit/sync is in progress.

Figure 16-65. Sample TASK SCHEDULE RESULTS Report

Termination Name Reports

Description

The TERMINATION NAME Report displays a list of all termination names that have been provisioned, the alarms associated with each termination name, any remarks associated with each termination name, and the intertie information relating to that termination name.

Sample Report Form

Figure 16-75 displays a sample TERMINATION NAME Report form

The screenshot shows a Java Applet window titled "TERMINATION NAME SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo in the top left. In the top right, there is a button with a right-pointing arrow, a red box, and the text "Alarms". Below the logo, the form is organized into three sections: "SITE AND FORMAT", "TERMINATION", and "Intertie Information".

- SITE AND FORMAT:** Contains a "Site Name:" dropdown menu with "Argentina-AX-11" selected, an "Available Formats:" dropdown menu with "ALARMS" selected, and a "Report Title:" text input field.
- TERMINATION:** Contains a "Termination Name:" text input field, a "Port Name:" text input field, a "Channel:" text input field, a "DSO Bandwidth:" text input field, and an "Alarm Severity:" dropdown menu with "*" selected.
- Intertie Information:** Contains an "Intertie ID:" text input field, a "Far End Site:" dropdown menu with "*" selected, and an "Element Type:" section with a list of checkboxes: "All" (checked), "DACS II", "DACS II ISX", "DACS II AX", "AAC", "IMACS", and "Other".

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). Below these buttons is a question mark icon followed by the text "The name of the network element". At the very bottom of the window, a status bar reads "Unsigned Java Applet Window".

Figure 16-66. DND GUI: Sample TERMINATION NAME Report Form

Termination Name Report (Continued)

Field Descriptions The field values for the TERMINATION NAME Report form are described in Table 16-17.

Table 16-17. Field Descriptions for the TERMINATION NAME Report Form

Field	Description
Site Name	(Combo box) Select the name of the SNMP where the report will be processed. Clicking this field will display a list of SNMP names.
Available Formats	(Combo box) Select an TERMINATION NAME Report format. The following formats are available: ■ <i>Alarms</i> ■ <i>Remarks</i> ■ <i>Intertie Information</i> ■ <i>Channels</i>
Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
Termination Name	Enter the Termination Name . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
Port Name	Enter the Port Name . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
Channels	Enter the Channel . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
DS0 Bandwidth	Enter the DS0 Bandwidth . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
Alarm Severity	(Combo box) Select an Alarm Severity .

Table 16-17. Field Descriptions for the TERMINATION NAME Report Form

Field	Description
Intertie ID	(Text field) Enter the Name of the Intertie ID.
Far End Site	(Text field) Enter the name of the Network Element at the far end.
Element Type	(Radio buttons) Select the site type. The choices are: ■ All - all site types ■ DACS II ■ DACS II ISX ■ DACS II AX ■ AAC ■ IMACS ■ Other - The SNMP type created as "Other."

Termination Name Report (Continued)

Sample Reports

Figure 16-67 to Figure 16-70 display sample TERMINATION NAME Reports.

REPORT TITLE: ALARMS

```
17 Dec 1999 17:46:25
-----Argentina-AX-11-----TERMINATION NAME-----ALARMS-----
Term_Name                               Port   Alarm_Type   Severity
term_1                                  P1-1    T1NearEndLOF   Major
term_2                                  P1-2    T1NearEndLossOfSignal Critical
```

Figure 16-67. DND GUI: Sample TERMINATION NAME Report Form - Alarms Format

REPORT TITLE: REMARKS

```
17 Dec 1999 17:47:38
-----Argentina-AX-11-----TERMINATION NAME-----REMARKS-----
Term_Name                               Port   Remark
term_1                                  P1-1    Termination #1
term_2                                  P1-2    Termination #2
arg_term1                               P1-3
arg_term2                               P1-4
```

Figure 16-68. DND GUI: Sample TERMINATION NAME Report Form - Remarks Format

REPORT TITLE: Intertie Information

```
17 Dec 1999 17:49:24
-----Argentina-AX-11-----TERMINATION NAME-----INTERTIE INFO-----
Term_Name   Port   Intertie_Name   Far_End_Name   Far_End_Type
term_1       P1-1    Brazil-Areentina Brazil-CEF      DACS II
term_2       P1-2    ax-11-aac-800   Chile-AAC-800   AAC
arg_term1    P1-3
arg_term2    P1-4
```

Figure 16-69. DND GUI: Sample TERMINATION NAME Report Form - Intertie Information Format

Termination Name Report (Continued)

Sample Reports (Continued)

REPORT TITLE: Channels

```
17 Dec 1999 17:50:51
-----Argentina-AX-11-----TERMINATION NAME-----CHANNELS-----
Term_Name          Port      BW Channels
term_1             P1-1     03 01,02,03
term_2             P1-2     03 01,02,03
arg_term1          P1-3     04 01,02,03,04
arg_term2          P1-4     04 05,06,07,08
```

**Figure 16-70. DND GUI: Sample TERMINATION NAME Report Form -
Channels Format**

Termination Mapping Report

Description

The TERMINATION MAPPING Report displays a list of all termination connections that have been provisioned, the alarms associated with each termination mapping, any remarks associated with each termination mapping, and the channels relating to that termination mapping.

DND GUI: Sample Report Form

Figure 16-75 displays a sample TERMINATION MAPPING Report form

The screenshot shows a Java applet window titled "TERMINATION MAPPING SEARCH CRITERIA". The window has a dark background with a "dnd" logo in the top left. A "Alarms" button with a dropdown arrow is in the top right. The form is organized into sections: "SITE AND FORMAT" with fields for "Site Name" (set to "Argentina-AX-11"), "Available Formats" (set to "ALARMS"), and "Report Title"; "CIRCUIT" with fields for "Circuit ID" and "DSO Bandwidth"; "FROM TERMINATION" with fields for "Termination Name", "Port Name", and "Channel"; "TO TERMINATION" with fields for "Termination Name", "Port Name", and "Channel"; and "Alarm Severity" with a dropdown menu. At the bottom are "Continue", "Restart", and "Close" buttons. A status bar at the very bottom displays the message "request sent to server, please stand by..." and the text "Unsigned Java Applet Window" is visible in the bottom-left corner of the window frame.

Figure 16-71. DND GUI: Sample TERMINATION MAPPING Report Form

Termination Mapping Report (Continued)

Field Descriptions The field values for the TERMINATION MAPPING Report form are described in Table 16-18.

Table 16-18. Field Descriptions for the TERMINATION MAPPING Report Form

Field	Description
Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Available Formats	(Combo box) Select an TERMINATION MAPPING Report format. If no customized formats were created using the DND Forms Interface, the following formats will be available: ■ <i>Alarms</i> ■ <i>Remarks</i> ■ <i>Mappings</i>
Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
Circuit ID	(Text Field) Enter the Circuit ID . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
DS0 Bandwidth	(Text Field) Enter the DS0 Bandwidth . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
From Termination	(Text Fields) Enter the Termination Name or the Port Name and Channel . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
To Termination	(Text Fields) Enter the Termination Name or the Port Name and Channel . For additional information, refer to the Field Description tables in Chapter 11, Termination Naming and Connections.
Alarm Severity	(Combo box) Select an Alarm Severity .

Termination Mapping Report (Continued)

Sample Reports Figure 16-67 to Figure 16-70 display sample TERMINATION MAPPING Reports.

REPORT TITLE: ALARMS

```
17 Dec 1999 17:52:18
-----Argentina-AX-11-----TERMINATION MAPPING-----ALARMS-----
CktID                      Alarm_Type                      Severity
term_map_1                 T1NearEndLossOfSignal          Critical
```

Figure 16-72. DND GUI: Sample TERMINATION MAPPING Report Form - Alarms Format

REPORT TITLE: REMARKS

```
17 Dec 1999 17:53:36
-----Argentina-AX-11-----TERMINATION MAPPING-----REMARKS-----
CktID                      Remark
arg_term1_to_arg_term2    map the terminations
term_map_1                termination circuit map for Argentina Customer A
```

Figure 16-73. DND GUI: Sample TERMINATION MAPPING Report Form - Remarks Format

REPORT TITLE:

```
17 Dec 1999 17:55:28
-----Argentina-AX-11-----TERMINATION MAPPING-----MAPPINGS-----
CktID      Term1_Name  Term1_Port  Term1_Ch  Term2_Name  Term2_Port  Term2_(
arg_term1_to_arg_term2  arg_term1   P1-3       01      arg_term2   P1-4       05
arg_term1_to_arg_term2  arg_term1   P1-3       02      arg_term2   P1-4       06
arg_term1_to_arg_term2  arg_term1   P1-3       03      arg_term2   P1-4       07
arg_term1_to_arg_term2  arg_term1   P1-3       04      arg_term2   P1-4       08
term_map_1      term_1      P1-1       01      term_2      P1-2       01
term_map_1      term_1      P1-1       02      term_2      P1-2       02
term_map_1      term_1      P1-1       03      term_2      P1-2       03
```

Figure 16-74. DND GUI: Sample TERMINATION MAPPING Report Form - Mappings Format

Outage Report

Description

The OUTAGE Report provides a report for NPC or circuit outage information. The information generated in this report is not automatically generated by the DND - it was previously entered into the database by the user via the OUTAGE LOG form.

DND GUI: Sample Report Form

Figure 16-75 displays a sample OUTAGE Report form.

The screenshot shows a Java applet window titled "OUTAGE SEARCH CRITERIA". The interface includes the following sections:

- SITE AND FORMAT:** Site Name (dropdown menu showing "CEF"), Available Formats (dropdown menu showing "OUTAGE INFORMATION"), and Report Title (text input field).
- OUTAGE TYPE:** Outage Type (radio buttons for "All", "NPC", and "Circuit"; "All" is selected).
- Record Number:** Record Number (text input field) and Range (radio buttons for "=", ">", and "<"; "=" is selected).
- OUTAGE ID:** ID (text input field).
- CIRCUIT PRIORITY:** Priority (text input field).
- OUT Date and Time Search Information:** Includes DATE (Day, Month, Year dropdowns) and TIME (Hour, Minute, Second dropdowns) fields, each with a Range selection ("=", ">", "<" radio buttons).
- IN Date and Time Search Information:** Similar to the OUT section, with DATE and TIME fields and Range selections.
- Buttons:** "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon).

The bottom of the window shows the status "Unsigned Java Applet Window".

Figure 16-75. DND GUI: Sample OUTAGE Report Form

Outage Report (Continued)

DND Forms: Sample Report Form

Figure 16-76 displays a sample OUTAGE Report form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty. The "Alarms:" field lists three items: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below this is a section titled "OUTAGE SEARCH CRITERIA" enclosed in a box. Inside this box, the "Site Name:" field is filled with "A-CEF-02-ND-Fargo". The "Outage Type:" field is filled with "CIRCUIT", and the "Record Number:" field is filled with "< 0003". The "CKT ID:" field is empty, and the "CP:" field is filled with "1". Below these fields are two rows of date and time input fields: "Date Out:" and "Time Out:" on the first row, and "Date In:" and "Time In:" on the second row. Below the box, there is a prompt "Enter alphanumeric Circuit Priority" followed by the text "jessica: UI-03". At the bottom of the window is a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-76. DND Forms: Sample OUTAGE Report Form

Outage Report (Continued)

Field Descriptions The field values for the OUTAGE Report form are described in Table 16-19.

Table 16-19. Field Descriptions for the OUTAGE Report Form

Field	Description
<i>GUI and Forms:</i> Site Name	(Combo box) Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
<i>GUI only:</i> Available Formats	(Combo box) Select an OUTAGE Report format. If no customized formats were created using the DND Forms Interface, the only format available will be <i>OUTAGE INFORMATION</i> .
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
<i>GUI and Forms:</i> Outage Type	(Radio buttons) The choices are: ■ <i>All</i> - Display NPC and circuit outages ■ <i>NPC</i> - Display NPC outages ■ <i>Circuit</i> - Display circuit outages
<i>GUI and Forms:</i> Record Number	(Text field) Enter the outage entry number assigned to a particular outage via the OUTAGE LOG form.
<i>GUI and Forms:</i> (Record Number) Range	(Radio buttons) The choices are: ■ <i>=</i> - (<i>GUI only</i>) Displays the outage for the record EQUAL to the Record Number ■ <i>></i> - Displays the outages for the records GREATER than the Record Number ■ <i><</i> - Displays the outages for the records LESS than the Record Number.
<i>GUI: (Outage) ID</i> <i>Forms: CKT ID</i>	(Text field) Enter a circuit name related to an outage. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
<i>GUI: (Circuit) Priority</i> <i>Forms: CP</i>	(Text field) Enter the priority code for the circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-19. Field Descriptions for the OUTAGE Report Form (Continued)

Field	Description
<i>GUI and Forms:</i> (OUT and IN Information) DATE	(Combo boxes) Select the Date range for the report. The fields are: ■ Day - Select the day (01 through 31) ■ Month - Select the month (Jan through Dec) ■ Year - Select the year (1990 through 2037)
<i>GUI and Forms:</i> (OUT and IN Information: DATE) Range	(Radio buttons) Select the Date range for the report. The choices are: ■ = - (<i>GUI only</i>) Displays outages which occurred ON the Date ■ > - Displays outages which occurred AFTER the Date ■ < - Displays outages which occurred BEFORE the Date
<i>GUI and Forms:</i> (OUT and IN Information) TIME	(Combo boxes) Select the time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)
<i>GUI and Forms:</i> (OUT and IN Information: DATE) Range	(Radio buttons) Select the time range. The choices are: ■ = - (<i>GUI only</i>) Displays outages which occurred ON the Time ■ > - Displays outages which occurred AFTER the Time ■ < - Displays outages which occurred BEFORE the Time

Outage Report (Continued)

Sample OUTAGE Report

Figure 16-77 displays a sample OUTAGE Report.

12 Mar 1999 12:22:36

-----A-CEF-01-NJ-Manalapan-----OUTAGES-----OUTAGE INFORMATION-----

Type	Num	Outage_ID	Date_Str	Date_End
CIRCUIT 1		ckt3	01Mar99	02Mar99
CIRCUIT 1		ckt2	11Mar99	12Mar99
CIRCUIT 1		ckt1	12Mar99	12Mar99

Figure 16-77. Sample OUTAGE Report

SNMP Alarm Log Report

Description

The SNMP ALARM LOG Report lists the history of alarm messages for an SNMP unit. If an SNMP unit icon is in the alarm state (ALM) or error state (ERR), then, an SNMP ALARM LOG Report should be run to find the cause of the alarm. The three types of alarm messages for an SNMP unit are:

- **State changes** - The state changes you will see most often are:

- Query (QRY)
- In-service (IS)
- Out-of-service (OOS)
- Alarm (ALM)
- Error (ERR).

If DND detects a state change, the user is notified in the SNMP Alarm Log by this message: NE STCHG: <new_change>

- **Standard trap messages** - DND can receive SNMP traps from an SNMP network element, as long as DND and the network element are configured to communicate with each other. For details, see Chapter 5.

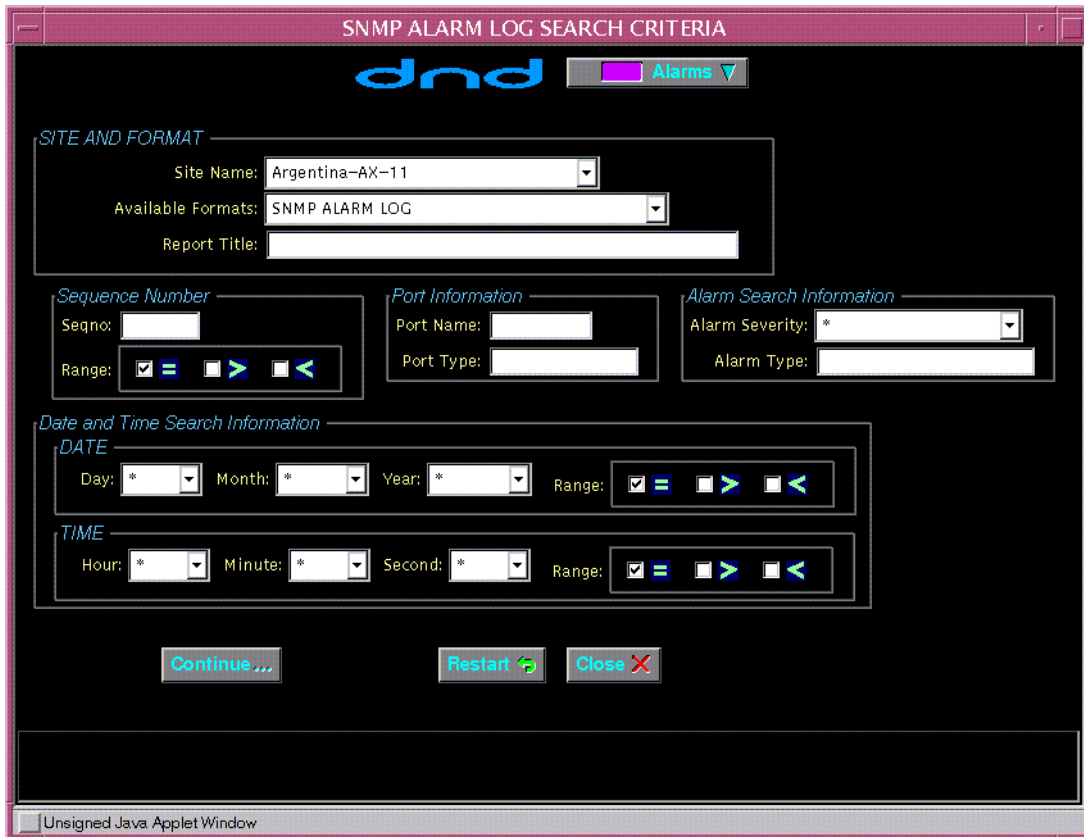
- **Gap alarm messages** - Each SNMP trap is assigned a sequence number. If DND detects a skip in sequence numbers, the user is notified in the SNMP Alarm Log by this message: <Seqno> NE SEQNO GAP

A skip indicates that the SNMP device sent out traps that were not received by DND. Missed traps indicate that an error occurred at the SNMP device and may require further investigation. Missed traps may occur if the TCP/IP connection is down or the SNMP network element is not responding.

SNMP Alarm Log Report (Continued)

Sample Report Form

Figure 16-78 displays a sample SNMP ALARM LOG Report form.



The image shows a Java applet window titled "SNMP ALARM LOG SEARCH CRITERIA". The window has a dark background with a blue "dnd" logo in the top left. A purple bar at the top right contains the word "Alarms" with a downward arrow. The form is organized into several sections:

- SITE AND FORMAT**: Contains a "Site Name" dropdown menu (showing "Argentina-AX-11"), an "Available Formats" dropdown menu (showing "SNMP ALARM LOG"), and a "Report Title" text input field.
- Sequence Number**: Includes a "Seqno:" text input field and a "Range:" section with a checked checkbox and three navigation buttons (left, right, and a middle button).
- Port Information**: Includes a "Port Name:" text input field and a "Port Type:" text input field.
- Alarm Search Information**: Includes an "Alarm Severity:" dropdown menu (showing "*") and an "Alarm Type:" text input field.
- Date and Time Search Information**:
 - DATE**: Includes "Day:", "Month:", and "Year:" dropdown menus (all showing "*") and a "Range:" section with a checked checkbox and three navigation buttons.
 - TIME**: Includes "Hour:", "Minute:", and "Second:" dropdown menus (all showing "*") and a "Range:" section with a checked checkbox and three navigation buttons.

At the bottom of the form are three buttons: "Continue ...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The window's title bar at the bottom left reads "Unsigned Java Applet Window".

Figure 16-78. Sample SNMP ALARM LOG Report Form

SNMP Alarm Log Report (Continued)

Field Descriptions The field values for the SNMP ALARM LOG Report form are described in Table 16-20.

Table 16-20. Field Descriptions for the SNMP ALARM LOG Report Form

Field	Description
Site Name	(Combo box) Select the name of the SNMP site where the report will be processed. Clicking this field will display a list of SNMP names.
Available Formats	(Combo box) The only format available is <i>SNMP ALARM LOG</i> . This report cannot be customized.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
Seqno	(Text field) Enter the sequence number of the trap.
(Seqno) Range	(Radio buttons) The choices are: ■ = - Display the report entry for the sequence number EQUAL to Seqno ■ > - Display the report entries for sequence numbers GREATER than Seqno ■ < - Display the report entries for sequence numbers LESS than Seqno
Port Name	(Text field) Enter the name of the port whose alarms will be displayed in the report.
Port Type	(Text field) Enter the type of port whose alarms will be displayed in the report.
Alarm Severity	(Combo box) Select the severity of port alarms to display in the report.
Alarm Type	(Text field) Enter the type of port alarms to display in the report.
DATE	(Combo boxes) Select the date criteria for the report. The Date fields are: ■ Day - Select the day (01 through 31) ■ Month - Select the month (Jan through Dec) ■ Year - Select the year (1990 through 2037)

**Table 16-20. Field Descriptions for the SNMP ALARM LOG Report Form
(Continued)**

Field	Description
(DATE) Range	(Radio buttons) Select the Date range for the report. The choices are: ■ = - Displays alarms which occurred ON the Date ■ > - Displays alarms which occurred AFTER the Date ■ < - Displays alarms which occurred BEFORE the Date
TIME	(Combo boxes) Select the time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)
(TIME) Range	(Radio buttons) Select the Time range to display in the report. The choices are: ■ = - Displays alarms which occurred ON the Time ■ > - Displays alarms which occurred AFTER the Time ■ < - Displays alarms which occurred BEFORE the Time

SNMP Alarm Log Report (Continued)

Sample SNMP ALARM LOG Report

Figure 16-79 displays a sample SNMP ALARM LOG Report.

Seqno	Alarm_Type	Port	Port_Type	Severity	Date	Time	Description
14 Apr 1999 11:58:00							
A-AAC-01-NJ-Manalapan							
	NE STCHG: IS			Clear	04/13/99	19:36:08	
	NE STCHG: ALM			Major	04/13/99	19:35:45	Enterprise MIB GET timeout
	NE STCHG: IS			Clear	04/13/99	16:05:13	
	NE STCHG: QRY			Clear	04/13/99	16:05:12	
	NE STCHG: IS			Clear	04/13/99	15:22:30	
	NE STCHG: QRY			Clear	04/13/99	15:22:27	
	NE STCHG: IS			Clear	04/13/99	15:02:37	
	NE STCHG: ALM			Major	04/13/99	15:01:50	Cannot initialize SNMP library
	NE STCHG: QRY			Clear	04/13/99	15:01:50	
80	NE SEQNO GAP			Major	04/13/99	13:57:24	22 - 80
	NE STCHG: IS			Clear	04/13/99	13:57:15	
	NE STCHG: QRY			Clear	04/13/99	13:57:13	
	NE STCHG: ERR			Major	04/13/99	13:14:21	Generic not supported- 4.12
	NE STCHG: ALM			Major	04/13/99	12:32:17	Timed out waiting for the reply from the frame
	NE STCHG: QRY			Clear	04/13/99	12:32:16	
	NE STCHG: ALM			Major	04/13/99	09:40:08	Cannot initialize SNMP library
	NE STCHG: QRY			Clear	04/13/99	09:40:08	
	NE STCHG: ALM			Major	04/11/99	00:09:31	Cannot initialize SNMP library
	NE STCHG: QRY			Clear	04/11/99	00:09:31	
	NE STCHG: IS			Clear	04/10/99	16:45:33	
	NE STCHG: ALM			Major	04/10/99	16:44:36	Timed out waiting for the reply from the frame
	NE STCHG: IS			Clear	04/09/99	18:54:39	
	NE STCHG: ALM			Major	04/09/99	18:54:36	Cannot initialize SNMP library
	NE STCHG: QRY			Clear	04/09/99	18:54:36	
21	losClear	W1-2	DSX+DSX	Clear	04/09/99	15:55:09	
20	nosClear	W1-1	DSX+DSX	Clear	04/09/99	15:55:09	
19	oosClear	P1	ADPCM-64x1	Clear	04/09/99	15:55:09	
21	los	W1-2	DSX+DSX	Minor	04/09/99	15:55:08	

Figure 16-79. Sample SNMP ALARM LOG Report

SNMP Port Alarm Report

Description

The SNMP PORT ALARM Report displays all active port alarms on an SNMP unit.

Sample Report Form

Figure 16-80 displays a sample SNMP PORT ALARM Report form.

The screenshot shows a Java applet window titled "SNMP PORT ALARM SEARCH CRITERIA". The window has a dark background with a "dnd" logo in the top left. A tab labeled "Alarms" is selected. The form is divided into several sections:

- SITE AND FORMAT:** Contains three fields: "Site Name" (a dropdown menu showing "Argentina-AX-11"), "Available Formats" (a dropdown menu showing "SNMP PORT ALARMS"), and "Report Title" (a text input field).
- Port Information:** Contains two fields: "Port Name" and "Port Type", both text input fields.
- Alarm Search Information:** Contains two fields: "Alarm Severity" (a dropdown menu showing "*") and "Alarm Type" (a text input field).

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The bottom of the window shows a status bar with the text "Unsigned Java Applet Window".

Figure 16-80. Sample SNMP PORT ALARM Report Form

SNMP Port Alarm Report (Continued)

Field Descriptions The field values for the SNMP PORT ALARM Report form are described in Table 16-21.

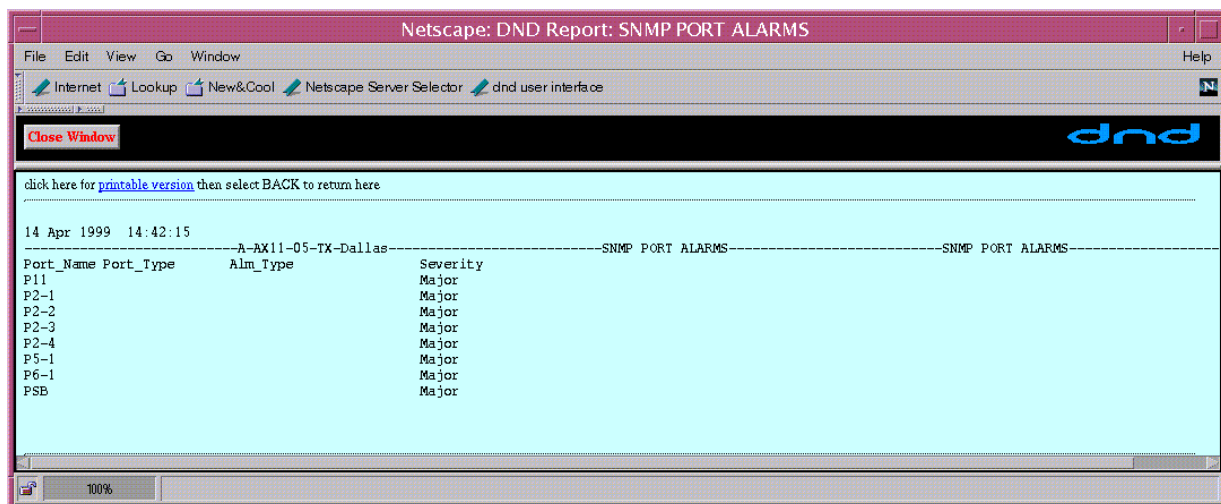
Table 16-21. Field Descriptions for the SNMP PORT ALARM Report Form

Field	Description
Site Name	(Combo box) Select the name of the SNMP site where the report will be processed. Clicking this field will display a list of SNMP names.
Available Formats	(Combo box) The only format available is <i>SNMP PORT ALARMS</i> . This report cannot be customized.
Port Name	(Text field) Enter the name of the port whose alarms will be displayed in the report.
Port Type	(Text field) Enter the type of port whose alarms will be displayed in the report.
Alarm Severity	(Combo box) Select the severity of port alarms to display in the report.
Alarm Type	(Text field) Enter the type of port alarms to display in the report.

SNMP Port Alarm Report (Continued)

Sample SNMP PORT ALARM Report

Figure 16-81 displays a sample SNMP PORT ALARM Report.



Port_Name	Port_Type	Alm_Type	Severity
P11			Major
P2-1			Major
P2-2			Major
P2-3			Major
P2-4			Major
P5-1			Major
P6-1			Major
PSB			Major

Figure 16-81. Sample SNMP PORT ALARM Report

SNMP Communications Report

Description

The SNMP COMMUNICATIONS Report displays SNMP and communications information for an SNMP unit.

Sample Report Form

Figure 16-82 displays a sample SNMP COMMUNICATIONS Report form.

The screenshot shows a Java applet window titled "SNMP COMMUNICATIONS SEARCH CRITERIA". The window has a dark background with a "dnd" logo and an "Alarms" button in the top right. The form is divided into several sections:

- SITE AND FORMAT:** Contains a "Site Name:" dropdown menu with an asterisk, an "Available Formats:" dropdown menu set to "SNMP COMMUNICATIONS", and a "Report Title:" text field.
- SNMP Information:** Includes an "Element Type:" section with checkboxes for "All" (checked), "DACS II AX", "AAC", "IMACS", and "Other". It also has a "Location:" text field.
- Communications information:** Includes a "Site Status:" section with checkboxes for "All" (checked), "OOS", "IS", "ALM", "QRY", and "ERR". It also has "IP address:" and "Community:" text fields.

At the bottom of the form are three buttons: "Continue...", "Restart" (with a circular arrow icon), and "Close" (with a red X icon). The status bar at the bottom of the window reads "Unsigned Java Applet Window".

Figure 16-82. Sample SNMP COMMUNICATIONS Report Form

SNMP Communications Report (Continued)

Field Descriptions The field values for the SNMP COMMUNICATIONS Report form are described in Table 16-22.

Table 16-22. Field Descriptions for the SNMP COMMUNICATIONS Report Form

Field	Description
Site Name	(Combo box) Select the name of the SNMP site where the report will be processed. Clicking this field will display a list of SNMP names.
Available Formats	(Combo box) The only format available is <i>SNMP COMMUNICATIONS</i> . This report cannot be customized.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
Element Type	(Radio buttons) Select the SNMP site type. The choices are: ■ All - All types of SNMPs ■ DACS II AX ■ AAC ■ IMACS ■ Other - The SNMP type created as "Other."

Table 16-22. Field Descriptions for the SNMP COMMUNICATIONS Report Form (Continued)

Field	Description
Site Status	(Radio buttons) Select the status of the site to display in the report. The choices are: ■ All - Display report entries for every site status ■ OOS - Display report entries for Out-of-Service sites. ■ IS - Display report entries for In-Service sites ■ ALM - Display report entries for sites in alarm ■ QRY - Display report entries for sites in query ■ ERR - Display report entries for sites in error.
IP address	(Text field) Enter the IP address of an SNMP site.
Community	(Text field) Enter the Community code for an SNMP site.

SNMP Communications Report (Continued)

Sample SNMP COMM. Report

Figure 16-83 displays a sample SNMP PORT ALARM Report.

10 Mar 1999 19:44:42

-----COMMON-----SNMP COMMUNICATIONS-----SNMP COMMUNICATIONS-----

Site_Name	Site_Type	Comm_Status	IP_Address	Community	Location
A-AAC-01-NJ-Manalapan	AAC	IS	291.186.1.1	Manager	lab
A-AAC-02-ND-Rugby	AAC	IS	102.178.10.21	Manager	lab
A-AAC-04-AZ-Phoenix	AAC	IS	192.118.11.4	Manager	lab
A-AAC-05-TX-Dallas	AAC	IS	292.108.12.2	Manager	Texas
HOBBS-AAC-131-NM	AAC	IS	111.18.10.13	Manager	lab
HOBBS-AAC-132-NM	AAC	IS	296.18.78.130	Manager	lab
HOBBS-AAC-133-NV-Vegas	AAC	IS	152.68.65.138	Manager	casino
HOBBS-AAC-134-NV-Vegas	AAC	IS	152.198.10.14	Manager	casino
HOBBS-AAC-135-NV-Reno	AAC	IS	182.138.10.55	Manager	farm
HOBBS-AAC-136-NV-Reno	AAC	IS	199.198.10.0	Manager	farm

Figure 16-83. Sample SNMP COMMUNICATIONS Report

Altroutes/Preemptions Report

Description

The ALTROUTES/PREEMPTIONS Report provides information on altrouted and/or preempted circuits. Two default formats are provided. The fields that appear on the report contain information that was entered in the CIRCUIT PROVISIONING form, and its associated ALTROUTE form. The report form allows you to select by the altrouted circuit ID names, circuit characteristics, endpoint NPC and channel number, and by the preempted circuit identifiers.

Sample Report Form

Figure 16-84 displays a sample ALTROUTES/PREEMPTIONS Report form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty. The "Alarms:" field lists "A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". Below this is a section titled "ALTROUTED/PREEMPTED CIRCUIT SEARCH CRITERIA".

Site Name: A-CEF-02-ND-Fargo

Ckt ID: _____ CP: 2B

TC: 0011.0011 IW: IRB

Altroute Date: 21 Feb 99 Altroute Time: _ _ : _ _ : _ _

	Hier	Ext	NPC ID	Ch
NORMAL	—	—	—	—
ALTRROUTE	—	—	—	—

Preempted Ckt ID: _____ CP: _____

Enter search character '<', '>' or leave blank _____

jessica: UI-03

HELP [] QUIT [] TOP MENU [] PRINT [] EXECUTE []

Figure 16-84. Sample ALTROUTES/PREEMPTIONS Report Form

Altroutes/Preemptions Report (Continued)

Field Descriptions The field values for the ALTROUTES/PREEMPTIONS Report form are described in Table 16-23.

Table 16-23. Field Descriptions for the ALTROUTES/PREEMPTIONS Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Available Formats	Select an ALTROUTES/PREEMPTIONS Report format. The default choices are: ■ <i>PREEMPTED CIRCUITS</i> - Identifies the preempted circuits and the altrouted endpoints that caused their preemption ■ <i>ALTROUTED CIRCUITS</i> - Identifies circuits in the ALTROUTED status. One line lists the altrouted circuit ID and identifies one endpoint of the altrouted circuit. The normal hierarchical number and channel is listed along with the altrouted hierarchical number and channel. One two-point circuit is thus identified by two report lines, one of each point. A multipoint circuit results in more than two report lines. Note that NPC and its channel will not be different from the altrouted NPC and its channel if that point was not changed.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
Ckt ID	Enter the circuit name of the altrouted or preempted circuit.
(Altrouted Ckt ID) CP	Enter the priority code of the circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
TC	Select the Trunk Conditioning to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-23. Field Descriptions for the ALTROUTES/PREEMPTIONS Report Form (Continued)

Field	Description
IW	Select the Insertion Word to display in the report. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(Altroute Date) Range	Select the Date range for the report. The choices are: ■ > - Displays information for circuits which were altrouted/preempted AFTER the Altroute Date ■ < - Displays information for circuits which were altrouted/preempted BEFORE the Altroute Date
Altroute Date	Enter the date criteria for the report. The Date fields are: ■ Day - Enter the day (01 through 31) ■ Month - Enter the month (Jan through Dec) ■ Year - Enter the year (1990 through 2037)
(Altroute Time) Range	Enter the time range. The choices are: ■ > - Displays information for circuits which were altrouted/preempted AFTER the Altroute Time ■ < - Displays information for circuits which were altrouted/preempted BEFORE the Altroute Time
Altroute Time	Enter the time criteria for the report. The Time fields are: ■ Hour - Enter the hour (00 through 23) ■ Minute - Enter the minute (00 through 59) ■ Second - Enter the second (00 through 59)
(FROM/TO Hier/Ext) Range	Enter the range criteria of NPCs in which display report information. The choices are: ■ > - Displays NPC altroute/preemption information for NPC numbers GREATER than the Hier/Ext specified ■ < - Displays NPC altroute/preemption information for NPC numbers LESS than the Hier/Ext specified.
(NORMAL/ALTRROUTE) Hier/Ext	Enter the normal/altrouted NPC number in which to display in the report. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.

Table 16-23. Field Descriptions for the ALTROUTES/PREEMPTIONS Report Form (Continued)

Field	Description
NPC ID	Enter the name of the normal/altrouted NPC.
Ch	Enter the channel number of the normal/altrouted NPC.
Preempted Ckt ID	Enter the circuit name of the preempted circuit.
(Preempted Ckt) CP	Enter the priority code of the preempted circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning

Altroutes/Preemptions Report (Continued)

Sample ALTROUTES/ PREEMPTIONS Reports

The two default ALTROUTES/PREEMPTIONS Report formats are:

- *ALTROUTED CIRCUITS*
- *PREEMPTED CIRCUITS*

ALTROUTED CIRCUITS

Figure 16-85 displays a sample ALTROUTED CIRCUITS Report, showing two altrouted circuits.

```
-----stest1-----ALTROUTES/PREEMPTIONS-----ALTROUTED CIRCUITS-----
```

Circuit_ID	CP	NPC	Ch	A_NPC	Ch	Date	Time	Pr_Ckt_ID
Circuit1	00	01103	005	01103	004	3/23/99	08:01	
Circuit1	00	01104	011	01104	012	3/23/99	08:01	
Circuit2	00	01104	004	01104	004	3/23/99	08:02	
Circuit2	00	01104	005	01104	006	3/23/99	08:02	

Figure 16-85. Sample ALTROUTED CIRCUITS Report

PREEMPTED CIRCUITS

Figure 16-86 displays a sample PREEMPTIONS Report, showing one circuit preemption, **Circuit7**. The TO channel of **Circuit8** was altrouted from NPC 01102, Channel 010, to NPC 01102, Channel 005, which was already in use.

10 Mar 1999 19:44:42

```
-----stest1-----ALTROUTES/PREEMPTIONS-----PREEMPTED CIRCUITS-----
```

Circuit_ID	CP	NPC	Ch	Alt_Ckt_ID	CP	Date	Time
		01101	010	Circuit8	00	22May99	09:26:22
Circuit7	00	01102	005	Circuit8	00	22May99	09:26:28

Figure 16-86. Sample PREEMPTED CIRCUITS Report

Test Port Report

Description

The TEST PORT Report displays test port and test port group status. Two default formats are provided. The fields that appear in the report contain information that was entered in the TEST PORT PROVISIONING form and the TEST ACCESS form. The report form permits search by test port or test circuit connection data and characteristics.

Sample Report Form

Figure 16-87 displays a sample TEST PORT Report form.

The screenshot shows a window titled "DND USER INTERFACE" with a form for "TEST PORT SEARCH CRITERIA". The form contains the following fields and sections:

- Status:** (empty)
- Alarms:** A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
- TEST PORT SEARCH CRITERIA** (Section Header)
- Site Name:** A-CEF-02-ND-Fargo
- Test Port**
 - Number:** 05
 - Group:** (empty)
 - State:** MONITOR
 - NPC Hier:** (empty)
 - Ext:** (empty)
 - ID:** (empty)
 - Static TC:** (empty)
 - Static IW:** (empty)
- Circuit Under Test**
 - Ckt ID:** (empty)
 - Termination State:** (empty)
- CHANNEL CONNECTION**

	Hier	Ext	NPC ID	Ch
FROM	(empty)	(empty)	(empty)	(empty)
TO:	(empty)	(empty)	(empty)	(empty)
- Enter search character '<', '>' or leave blank:** (empty)
- Footer:** jessica: UI-03
- Buttons:** HELP, QUIT, TOP MENU, PRINT, EXECUTE

Figure 16-87. Sample TEST PORT Report Form

Test Port Report (Continued)

Field Descriptions The field values for the TEST PORT Report form are described in Table 16-24.

Table 16-24. Field Descriptions for the TEST PORT Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names
Available Formats	Select a TEST PORT Report format. The choices are: ■ <i>TEST PORT PROVISIONING</i> - Identifies information on the test ports and lists conditioning information to be applied to the circuits under test. ■ <i>TEST PORT STATUS</i> - Identifies information on test port and test circuit status information. The test port number, hierarchical number of its NPC, ID of the circuit under test, and type of test connection are listed.
<i>GUI only:</i> Report Title	(Text Field) Enter a title for the report. This title will be displayed in the report and will also appear on the title bar of the report window.
(Test Port: Number) Range	Select the test port Number range. The choices are: ■ > - Displays test port entries for numbers GREATER than the Number entered ■ < - Displays test port entries for numbers LESS than the Number entered
(Test Port) Number	Enter the test port number (1 through 96).
(Test Port: Group) Range	Select the test port Number range. The choices are: ■ > - Displays test port group entries for numbers GREATER than the Number entered ■ < - Displays test port group entries for numbers LESS than the Number entered
(Test Port) Group	Enter the test port group (1 through 8).
State	Enter the state of the test port. For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.

Table 16-24. Field Descriptions for the TEST PORT Report Form (Continued)

Field	Description
Static TC	Select the Trunk Conditioning of the Test Port. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
Static IW	Select the Insertion Word of the Test Port. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning
(Circuit Under Test) Ckt ID	Enter the circuit name of the CIRCUIT UNDER TEST .
(Circuit Under Test) Termination State	Select the termination state of the CIRCUIT UNDER TEST . For additional information, refer to the Field Description tables in Chapter 17, Test Ports and Test Access.
(FROM/TO Hier/Ext) Range	Select the range criteria of CIRCUIT UNDER TEST NPCs. The choices are: ■ > - Displays NPCs with numbers GREATER than the Hier/Ext specified ■ < - Displays NPCs with numbers LESS than the Hier/Ext specified.
(FROM/TO) Hier/Ext	Enter the FROM/TO NPC number of the CIRCUIT UNDER TEST . For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(FROM/TO) NPC ID	Enter the FROM/TO NPC name of the CIRCUIT UNDER TEST .
(FROM/TO) Ch	Enter the FROM/TO channel number of the CIRCUIT UNDER TEST .

Test Port Report (Continued)

Sample TEST PORT Reports

The two default TEST PORT Report formats are:

- *TEST PORT STATUS*
- *TEST PORT PROVISIONING*

TEST PORT STATUS

Figure 16-88 displays a sample TEST PORT STATUS Report.

10 Mar 1999 19:44:42

```
-----stest1-----TEST PORT-----TEST PORT STATUS-----  
  
TP          TP_State    Ckt_ID_Under_Test      F_NPC    F_Ch    T_NPC    T_Ch  
  
1           RELEASE  
  
2           MONITOR     Circuit2                01110    004     01112    005
```

Figure 16-88. Sample TEST PORT STATUS Report

TEST PORT PROVISIONING

Figure 16-89 displays a sample TEST PORT PROVISIONING Report.

10 Mar 1999 19:44:42

```
-----stest1-----TEST PORT-----TEST PORT PROVISIONING-----  
  
TP_Grp      TP_NPC      TP          Static_TC    Static_IW    TP_State  
  
1           01103       1           0011,0011    7F          TLR
```

Figure 16-89. Sample TEST PORT PROVISIONING Report

NPC Roll Results Report

Description

The NPC ROLL RESULTS Report lists the results of NPC rolls. The circuit IDs of rolled circuits, as well as the status of the circuits are included. The report form uses the NPC identifiers as search criteria.

Sample Report Form

Figure 16-90 displays a sample NPC ROLL RESULTS form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The window contains the following text:

```
18:40 23 Mar 1999 DND R2.0.1 / DND Forms R7.0.1
Status: Snmp_hdlr000 exited abnormally status=0 Signal 9. Restarting.
Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
```

Below the status and alarms, there is a section titled "NPC ROLL RESULTS SEARCH CRITERIA". This section contains a form with the following fields:

- Site Name: A-CEF-02-ND-Fargo
- Current: Hier Ext NPC ID Type
- Roll To: Hier Ext NPC ID Type

The "Type" field is set to "PA100" for both "Current" and "Roll To".

At the bottom of the form, there is a prompt "Enter site name:" followed by a text input field containing "jessica: UI-03".

Below the input field, there is a row of buttons: HELP, CHOICES, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 16-90. Sample NPC ROLL RESULTS Report Form

NPC Roll Results Report (Continued)

Field Descriptions The field values for the NPC ROLL RESULTS Report form are described in Table 16-25.

Table 16-25. Field Descriptions for the NPC ROLL RESULTS Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
(Current/Roll To) Hier/Ext	Enter the number of the current/rolled NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(Current/Roll To) NPC ID	Enter the name of the current/rolled NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(Current/Roll To) Type	Enter the NPC type. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.

Sample NPC ROLL RESULTS Report

Figure 16-91 displays a sample NPC ROLL RESULTS Report.

```

10 Mar 1999  19:44:42
-----pnfst-----NPC ROLL-----RESULTS-----
Cur_NPC      Roll_NPC    Circuit_ID    Ckt_Status
npc105        npc100      Ckt1          ACTIVE

The Command Completed Successfully

```

Figure 16-91. Sample NPC ROLL RESULTS Report

Lost Response Log

Description

Although listed as a REPORT OPERATIONS MENU option, the LOST RESPONSE LOG only contains data if the DND system interfaces to the Event Management System. The lost responses that get logged originate with the DND in reply to network traffic. However, for some reason, they cannot now be returned to the upstream network controller.

The **Request** field on the report represents the originator of the request, and can be frame, NPC, or circuit. The **Reason** field on the report is truncated to 31 characters to conserve space.

Sample Report Form

Figure 16-92 displays a sample LOST RESPONSE LOG form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The status bar at the top displays "Status:" and "Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". The main area is titled "LOST RESPONSE LOG SEARCH CRITERIA". It contains fields for "Date: _ _ _ _" and "Time: > 01 :00:00". Below these are "Request Type: FRAME", "Completion Status: E", and "Message No: █". At the bottom, there is a prompt "Enter the Message Number:" and a status bar showing "jessica: UI-03" and buttons for "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-92. Sample LOST RESPONSE LOG Report Form

Lost Response Log Report (Continued)

Field Descriptions The field values for the LOST REPSONSE LOG Report form are described in Table 16-26.

Table 16-26. LOST RESPONSE LOG Report Form Field Descriptions

Field	Description
(Date) Range	Select the Date range for the report. The choices are: ■ > - Displays lost responses which occurred AFTER the Date ■ < - Displays lost responses which occurred BEFORE the Date.
Date	Enter the date of the lost response. The Date fields are: ■ Day - Enter the day (<i>01</i> through <i>31</i>) ■ Month - Enter the month (<i>Jan</i> through <i>Dec</i>) ■ Year - Enter the year (<i>1990</i> through <i>2037</i>).
(Time) Range	Select the Time range for the report. The choices are: ■ > - Displays lost responses which occurred AFTER the Time ■ < - Displays lost responses which occurred BEFORE the Time.
Time	Enter the time criteria for the report. The Time fields are: ■ Hour - Enter the hour (00 through 23) ■ Minute - Enter the minute (00 through 59) ■ Second - Enter the second (00 through 59).

**Table 16-26. LOST RESPONSE LOG Report Form Field Descriptions
(Continued)**

Field	Description
Request Type	Select the type of LOST RESPONSE LOG Report to generate. The choices are: ■ <i>CIRCUIT</i> - Display lost responses for circuits ■ <i>NPC</i> - Display lost responses for NPCs ■ <i>FRAME</i> - Display lost responses for DACS frames
Completion Status	Select the Completion Status of a provisioning request. The choices are: ■ <i>FAILURE (F)</i> - Display the entries with failed executions. ■ <i>SUCCESS (S)</i> - Display the entries with successful executions.
Message No	Enter the Message Number of the lost response.

**Sample LOST
RESPONSE LOG
Report**

Figure 16-93 displays a sample LOST RESPONSE LOG Report.

10 Mar 1999 19:44:42

```

-----COMMON-----LOST RESPONSE LOG-----MESSAGES-----
Date      Time      Request  S/F Message_No  Reason
01Dec99 15:49:18 FRAME    F    1           The input field primary line is inval

```

Figure 16-93. Sample LOST RESPONSE LOG Report

Reconfiguration Plan Reports

Description

A reconfiguration plan specifies a sequence of circuit-provisioning operations to be executed automatically when the plan is executed. There are five reconfiguration plan report types listed in the RECONFIGURATION SUB-MENU:

- *RECONFIGURATION PLANS*
- *RECONFIGURATION PLANS ALTROUTE*
- *AUTO RECONFIGURATION PLAN*
- *RECONFIGURATION PLAN RESULTS*
- *AUTO RECONFIGURATION PLAN RESULTS*

The fields that appear on these reports contain information that was entered in the RECONFIGURATION PLAN PROVISIONING form.

Reconfiguration Plans Report

The RECONFIGURATION PLANS (RP) Report lists the contents of reconfiguration plans. One default format (*PLAN CONTENTS*) is provided. The circuits and actions for the items of a reconfiguration plan are listed.

The report can be sorted by RP identifying data and circuit state.

Reconfiguration Plan Altroute Report

The RECONFIGURATION PLANS ALTROUTE Report lists the altroutes and preemptions contained in a reconfiguration plan. Two default formats are provided:

- *PLAN ALTROUTED CIRCUITS* - Lists the altrouted circuit ID for the ALTROUTE Action in a reconfiguration plan. One line is reported for each circuit endpoint.
- *PLAN PREEMPTED CIRCUITS* - Lists the preempted circuit ID for circuits preempted by the ALTROUTE Action in a reconfiguration plan. One line is reported for each circuit endpoint.

The report can be sorted by RP identifying data and altrouted/preempted circuit identifiers.

Reconfiguration Plan Reports (Continued)

Automatic Reconfiguration Plan Report

The AUTO RECONFIGURATION PLAN (ARP) Report lists the contents of the two default list types:

- *RP LISTS* - Lists RPs in the ARP. The execution status of the ARP and the location at which the RP will execute are listed.
- *NPC LISTS* - Lists the NPCs whose alarm will trigger the ARP. The same information as in RP LISTS is reported, except the site identification and hierarchical number of the NPC is substituted for the RP site and identifier.

The report can be sorted by **Site Name**, **Plan**, **ARP Status**, **Date**, and **Time**.

Reconfiguration Plan Results Report

The RECONFIGURATION PLAN RESULTS Report lists the results of the latest execution of an RP (RP Action of ACTIVATE, CHECK, or IDLE). It includes one entry for each step in the plan showing either a successful completion or what type of conflict occurred, and an indication of what the last plan action was.

The report can be sorted by sequence number (**Seq**) or by circuit priority (**CP**).

Automatic Reconfiguration Plan Results Report

The AUTO RECONFIGURATION PLAN RESULTS Report lists the results of the latest execution of an ARP. It includes one entry for each RP in the plan. The RP status indicates whether an RP was executed.

The report can be sorted by sequence number (**Seq**) or by reconfiguration plan ID (**RP_ID**).

Reconfiguration Plan Reports (Continued)

Reconfiguration Sub-Menu

The RECONFIGURATION SUB-MENU provides access to the reconfiguration and altroute plans. Figure 16-94 displays the RECONFIGURATION SUB-MENU.

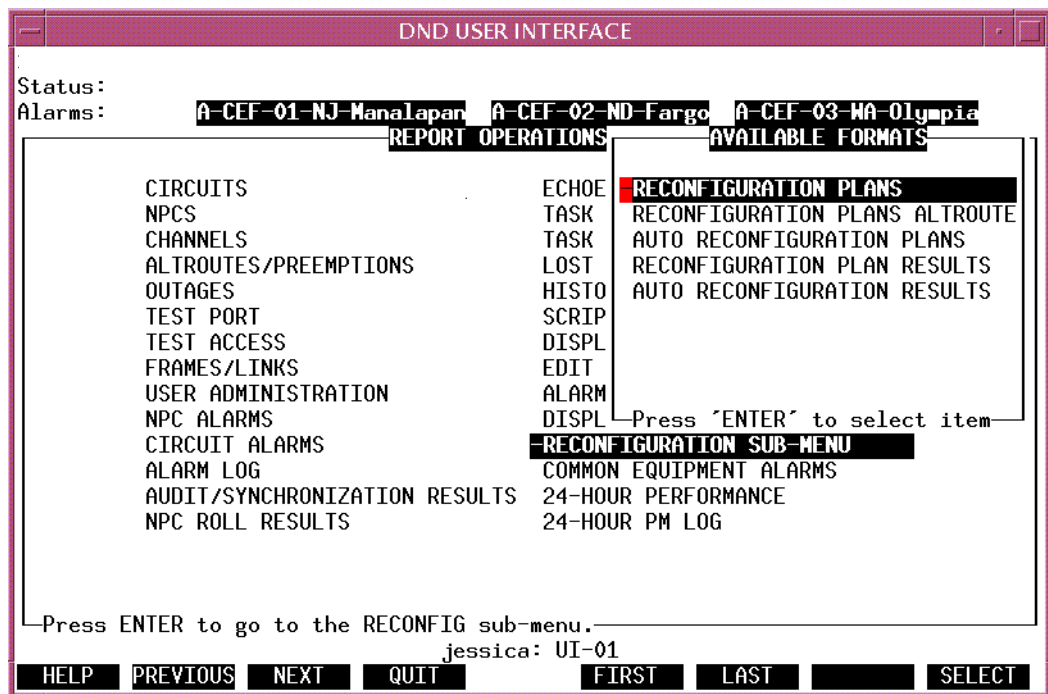


Figure 16-94. RECONFIGURATION SUB-MENU

Sample Report Form

```

DND USER INTERFACE

Status:
Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
RECONFIGURATION PLAN ALTROUTES SEARCH CRITERIA

Site Name: A-CEF-02-ND-Fargo
Reconfiguration ID: █ Sequence:     Side:    
Ckt ID:                                  CP:    

      Hier      Ext      NPC ID      Ch
NORMAL -     -                                      -    
ALTROUTE -     -                                      -    

FROM Preempted Ckt ID:                                  CP:    
TO Preempted Ckt ID:                                  CP:    

Enter alphanumeric Reconfiguration ID                                 
                                jessica: UI-03

HELP  QUIT  TOP MENU  PRINT  EXECUTE

```

**Figure 16-95. Sample RECONFIGURATION Plan Report -
RECONFIGURATION PLANS ALTROUTE Format**

Reconfiguration Plan Reports (Continued)

Field Descriptions The field values for the various RECONFIGURATION PLAN Reports form are described in Table 16-27.

Table 16-27. Field Descriptions for the RECONFIGURATION PLAN Reports

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Reconfiguration ID	Enter the RP ID name. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
RP Status	Select the status of the reconfiguration plan. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
Ckt ID	Enter the name of the circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
Ckt Action	Select the operation performed when the RP was executed. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(Sequence) Range	Select the Sequence range. The choices are: ■ < - Display information for all entries LESS than Sequence. ■ > - Display information for all entries GREATER than Sequence.
Sequence	Enter the reconfiguration plan sequence number (1 through 32768).
Side	Enter the side of the circuit. The choices are: ■ TO - TO side ■ FROM - FROM side
CP	Enter the circuit priority value for the normal/altrouted circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.

Table 16-27. Field Descriptions for the RECONFIGURATION PLAN Reports (Continued)

Field	Description
(NORMAL/ALTRROUTE) Hier/Ext	Enter the normal/altrouted NPC number in either Hierarchical (Hier) or Extended (Ext). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
NPC ID	Enter the NPC ID name. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
Ch	Enter the channel number of the normal/altrouted NPC.
(FROM/TO) Preempted Ckt ID	Enter the FROM/TO preempted circuit names. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(FROM/TO) CP	Enter the circuit priority value for the FROM/TO preempted circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
ARP ID	Enter the automatic reconfiguration plan ID name. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
ARP Status	Select the status of the automatic reconfiguration plan. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
List Type	Select the type of item. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
RP ID	Enter the reconfiguration plan ID name. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(RP Date) Range	Select the RP Date range for the report. The choices are: ■ > - Displays RP items which were executed AFTER the RP Date ■ < - Displays RP items which were executed BEFORE the RP Date

**Table 16-27. Field Descriptions for the RECONFIGURATION PLAN Reports
(Continued)**

Field	Description
RP Date	Select the RP Date range for the report. The fields are: ■ Day - Select the day (01 through 31) ■ Month - Select the month (Jan through Dec) ■ Year - Select the year (1990 through 2037)
(RP Time) Range	Select the RP Time range. The choices are: ■ > - Displays RP items which were executed AFTER the RP Time ■ < - Displays RP items which were executed BEFORE the RP Time
RP Time	Select the RP Time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)

Sample RP Report

Figure 16-96 displays a sample RECONFIGURATION PLANS Report.

10 Mar 1999 19:44:42

```

-----stest1-----RECONFIGURATION PLANS-----PLAN CONTENTS-----
Plan_ID      Status      Seq      Circuit_ID      Ckt_Action
RPlan001     IDLE        1        Circuit1        DEACTIVATE
RPlan001     IDLE        2        Circuit2        DEACTIVATE
RPlan001     IDLE        3        Circuit3        ACTIVATE

```

Figure 16-96. Sample RECONFIGURATION PLANS Report

(Continued on next page)

Reconfiguration Plan Reports (Continued)

Sample RP ALTROUTE Reports

The two default RECONFIGURATION PLANS ALTROUTE Report formats are:

- *PLAN ALTROUTED CIRCUITS*
- *PLAN PREEMPTED CIRCUITS*

PLAN ALTROUTED CIRCUITS

Figure 16-97 displays a sample RECONFIGURATION PLANS ALTROUTED CIRCUITS Report.

10 Mar 1999 19:44:42

```

-----stest1---RECONFIGURATION PLAN ALTROUTES-----PLAN ALTROUTED CIRCUITS-----
Plan_ID      Seq      Alt_Ckt_ID      CP      NPC      Ch      A_NPC      Ch      Pr_Ckt_ID
RPlan001     5          Circuit1        00      0001     001     0003       003     Circuit3
RPlan001     5          Circuit2        00      0002     003     0004       004     Circuit4

```

**Figure 16-97. Sample RECONFIGURATION PLANS ALTROUTE Report -
PLAN ALTROUTED CIRCUITS Format**

PLAN PREEMPTED CIRCUITS

Figure 16-98 displays a sample RECONFIGURATION PLANS PREEMPTED CIRCUITS Report.

10 Mar 1999 19:44:42

```

-----stest1---RECONFIGURATION PLAN ALTROUTES-----PLAN PREEMPTED CIRCUITS-----
Plan_ID      Seq      Pr_Ckt_ID      CP      NPC      Ch      Alt_Ckt_ID      CP
RPlan001     5
RPlan001     5          Circuit1        00

```

**Figure 16-98. Sample RECONFIGURATION PLANS ALTROUTE Report -
PLAN PREEMPTED CIRCUITS Format**

(Continued on next page)

Reconfiguration Plan Reports (Continued)

Sample AUTO RP Reports

The two default AUTO RECONFIGURATION PLANS Report formats are:

- *RP LISTS*
- *NPC LISTS*

RP LISTS

Figure 16-99 displays a sample AUTO RECONFIGURATION PLAN RP LISTS Report.

10 Mar 1999 19:44:42

```
-----stest1-----AUTO RECONFIGURATION PLANS-----RP LISTS-----
ARP_ID      Seq      ARP_Stat  RP_Site      RP_ID      Date      Time
ARP001      1        IDLE      stest1      RP001      01Dec99   11:16:58
ARP001      2        IDLE      stest1      RP002      01Dec99   11:18:32
```

Figure 16-99. Sample AUTO RECONFIGURATION PLAN Report - *RP LISTS* Format

NPC LISTS

Figure 16-100 displays a sample AUTO RECONFIGURATION PLAN NPC LISTS Report.

10 Mar 1999 19:44:42

```
-----stest1-----AUTO RECONFIGURATION PLANS-----NPC LISTS-----
ARP_ID      Seq      ARP_Stat  NPC_Site      NPC      Date      Time
ARP001      1        IDLE      stest1      01105    01Dec99   11:16:58
```

Figure 16-100. Sample AUTO RECONFIGURATION PLAN Report - *NPC LISTS* Format

Reconfiguration Plan Reports (Continued)

Sample RP Results Reports

The two default RECONFIGURATION PLAN RESULTS Report formats are:

- *SEQUENCE SORTED*
- *CP SORTED*

SEQUENCE SORTED

Figure 16-101 displays a sample RECONFIGURATION PLAN RESULTS - SEQUENCE SORTED Report.

```
10 Mar 1999  19:44:42
---A-CEF-01-NJ-Manalapan---RECONFIGURATION PLAN RESULTS---SEQUENCE SORTED-----
Plan_ID      Action  Circuit_ID                      CP Seq
rp1          EXECUTE  rp-ckt                          00 1
The command completed successfully
```

**Figure 16-101. Sample RECONFIGURATION PLANS RESULTS Report -
SEQUENCE SORTED Format**

CP SORTED

Figure 16-102 displays a sample RECONFIGURATION PLAN RESULTS - CP SORTED Report.

```
10 Mar 1999  19:44:42
---A-CEF-01-NJ-Manalapan---RECONFIGURATION PLAN RESULTS---SEQUENCE SORTED-----
Plan_ID      Action  Circuit_ID                      CP Seq
rp1          EXECUTE  rp-ckt                          00 1
The command completed successfully
```

**Figure 16-102. Sample RECONFIGURATION PLANS RESULTS Report - *CP
SORTED* Format**

Reconfiguration Plan Reports (Continued)

Sample Auto RP Results Reports

The two default AUTO RECONFIGURATION PLAN RESULTS Report formats are:

- *SEQUENCE SORTED*
- *RP ID SORTED*

SEQUENCE SORTED

Figure 16-103 displays a sample AUTO RECONFIGURATION PLAN RESULTS - SEQUENCE SORTED Report.

```
10 Mar 1999 19:44:42

-----COMMON-----AUTO RECONFIGURATION RESULTS-----SEQUENCE SORTED-----

ARP_ID      Seq RP_Site              RP_ID      RP_St  Date      Time
arp1        1  A-CEF-01-NJ-Manalapan  rp1        EXECUT 12/30/00 18:21:31

A-CEF-01-NJ-Manalapan RP ID "rp1": 1 attempted, 0 successful
```

**Figure 16-103. Sample AUTO RECONFIGURATION PLAN RESULTS Report -
SEQUENCE SORTED Format**

RP ID SORTED

Figure 16-104 displays a sample AUTO RECONFIGURATION PLAN RESULTS - RP ID SORTED Report.

```
10 Mar 1999 19:44:42

-----COMMON-----AUTO RECONFIGURATION RESULTS-----RP ID SORTED-----

ARP_ID      Seq RP_Site              RP_ID      RP_St  Date      Time
arp1        1  A-CEF-01-NJ-Manalapan  rp1        EXECUT 12/30/00 18:21:31

A-CEF-01-NJ-Manalapan RP ID "rp1": 1 attempted, 0 successful
```

**Figure 16-104. Sample AUTO RECONFIGURATION PLAN RESULTS Report -
RP ID SORTED Format**

Established DS0 Channels Report

Description

The ESTABLISHED DS0 CHANNELS Report displays established DS0 circuit records. This feature is available only if the X.50/X.57 Subrate application is installed on the selected DACS site.

The report can be sorted by Circuit ID, Status, FROM/TO NPC, Channel, Type, Transmission Standard, Transmission Rate, and circuit options.

Sample Report Form

Figure 16-105 displays a sample ESTABLISHED DS0 CHANNELS Report form.

The screenshot shows a window titled "DND USER INTERFACE" containing a form for "ESTABLISHED DS0 CHANNELS SEARCH CRITERIA". The form includes the following fields and controls:

- Status: (empty)
- Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia
- Site Name: A-CEF-01-NJ-Manalapan
- Ckt Status: DEACTIVATED
- Ckt ID: _____
- FROM: Hier Ext NPC ID Ch TYPE
- TO: _____
- Transmission Standard: _____ Transmission Rate: _____
- UMC: _____ MUX: _____ SIG: _____
- Enter search character "<" or ">" or leave blank _____
- Bottom bar: HELP [] QUIT [] TOP MENU PRINT EXECUTE

Figure 16-105. Sample ESTABLISHED DS0 CHANNELS Report Form

Established DS0 Channels Report (Continued)

Field Descriptions The field values for the ESTABLISHED DS0 CHANNELS Report form are described in Table 16-28.

Table 16-28. Field Descriptions for the ESTABLISHED DS0 CHANNELS Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Ckt Status	Select the status of the circuit. The choices are: ■ <i>ACTIVE</i> - The circuit is transmitting traffic ■ <i>DEACTIVATED</i> - The circuit is not transmitting traffic.
Ckt ID	Enter the name of the DS0 circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(FROM/TO Hier/Ext) Range	Select the Hier/Ext range. The choices are: ■ > - Displays NPCs which have numbers GREATER than Hier/Ext. ■ < - Displays NPCs which have numbers LESS than Hier/Ext.
(FROM/TO) Hier/Ext	Enter the FROM/TO NPC number(s) in hierarchical (Hier) or Extended (Ext) format. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(FROM/TO) NPC ID	Enter the name of the NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(FROM Ch) Range	Select the Ch range. The choices are: ■ > - Displays channels which have numbers GREATER than Ch. ■ < - Displays channels which have numbers LESS than Ch.

Table 16-28. Field Descriptions for the ESTABLISHED DS0 CHANNELS Report Form (Continued)

Field	Description
(FROM) Ch	Enter the FROM channel number. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(TO) TYPE	Select the TO Side NPC type. The only choice is <i>SD111</i> .
Transmission Standard	Select the substrate standard. The choices are: ■ X.50 - The X.50 substrate standard ■ X.57 - The X.57 substrate standard.
Transmission Rate	Select the transmission rate. The choices are: ■ 2.4 - 2.4 kbps ■ 4.8 - 4.8 kbps ■ 9.6 - 9.6 kbps
UMC	Enter the Unassigned Multiplexer Code.
MUX	Enter the Multiplexer out of Synchronization code.
SIG	Enter the Signaling Conversion code.

**Sample
ESTABLISHED
DS0 CHANNELS
Report**

Figure 16-106 displays a sample ESTABLISHED DS0 CHANNELS Report.

10 Mar 1999 19:44:42

```
-----dacs2-----ESTABLISHED DS0 CHAN-----ESTABLISHED DS0 CHAN-----
Circuit ID      Status    F_NPC    T_NPC    Ch   Type    Std    Rate    Framg

ckt1            4          0046     0035     001  SD111   X50
ckt1            4          0046     0035     002  SD111   X50
ckt1            4          0046     0035     003  SD111   X57    4.8
```

Figure 16-106. Sample ESTABLISHED DS0 CHANNELS Report

Subrate Circuits Report

Description

The SUBRATE CIRCUITS Report allows users to search for subrate circuit records. This feature is available only if the X.50/X.57 Subrate application is installed on the selected DACS site.

The report can be sorted by Circuit ID, FROM/TO NPC, FROM/TO Channel, FROM/TO Customer, rate, and status.

Sample Report Form

Figure 16-107 displays a sample SUBRATE CIRCUITS Report form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty. The "Alarms:" field displays three items: "A-CEF-01-NJ-Manalapan", "A-CEF-02-ND-Fargo", and "A-CEF-03-WA-Olympia". Below this is a section titled "SUBRATE CIRCUITS SEARCH CRITERIA" enclosed in a box. Inside this box, the "Site Name:" field is filled with "A-CEF-01-NJ-Manalapan". The "Ckt Status:" field is filled with "ACTIVE". The "Ckt ID:" field is empty. Below these fields is a table with columns: "FROM:", "Hier", "Ext", "NPC ID", "Ch", and "Cust". The "FROM:" column contains the text "/ TO". Below the table, the "Data Rate:" field is filled with "19.2". At the bottom of the search criteria box, there is a text input field with the placeholder "Enter the site name.". Below the search criteria box, the text "jessica: UI-03" is displayed. At the very bottom of the window, there is a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-107. Sample SUBRATE CIRCUITS Report Form

Subrate Circuits Report (Continued)

Field Descriptions The field values for the SUBRATE CIRCUITS Report form are described in Table 16-29.

Table 16-29. Field Descriptions for the SUBRATE CIRCUITS Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
Ckt Status	Select the status of the circuit. The choices are: ■ <i>ACTIVE</i> - The circuit is transmitting traffic ■ <i>DEACTIVATED</i> - The circuit is not transmitting traffic.
Ckt ID	Enter the name of the subrate circuit. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(FROM/TO Hier/Ext) Range	Select the Hier/Ext range. The choices are: ■ > - Displays NPCs which have numbers GREATER than Hier/Ext. ■ < - Displays NPCs which have numbers LESS than Hier/Ext.
(FROM/TO) Hier/Ext	Enter the FROM/TO NPC number(s) in hierarchical (Hier) or Extended (Ext) format. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(FROM/TO) NPC ID	Enter the name of the NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(FROM Ch) Range	Select the Ch range. The choices are: ■ > - Displays channels which have numbers GREATER than Ch. ■ < - Displays channels which have numbers LESS than Ch.

**Table 16-29. Field Descriptions for the SUBRATE CIRCUITS Report Form
(Continued)**

Field	Description
(FROM) Ch	Enter the FROM channel number. For additional information, refer to the Field Description tables in Chapter 9, Circuit Provisioning.
(FROM/TO) Cust	Enter the customer for the subrate circuit. For additional information, refer to the Field Description tables in Chapter 10, Subrate Provisioning.
Data Rate	Select the transmission rate. For additional information, refer to the Field Description tables in Chapter 10, Subrate Provisioning.

Sample SUBRATE CIRCUITS Report

Figure 16-108 displays a sample SUBRATE CIRCUITS Report.

10 Mar 1999 19:44:42

```

-----dacs2-----SUBRATE CIRCUITS-----SUBRATE CIRCUITS-----

```

CKT ID	F_NPC	F_ch	F_cust	T_NPC	T_Ch	T_cust	Rate	Status
sub1	0046	001	1-1	0046	002	1-1	2.4	4
sub2	0046	001	1-2	0046	002	1-2	4.8	4
sub3	0046	001	2-1	0046	002	2-1	9.6	4
sub4	0046	001	3-1	0046	002	1	4.8	4

Figure 16-108. Sample SUBRATE CIRCUITS Report

24-Hour Performance Report

Description

The 24-HOUR PERFORMANCE Report displays the 24-Hour performance statistics for all NPCs or a set of NPCs.

Sample Report Form

Figure 16-109 displays a sample 24-HOUR PERFORMANCE Report form.

The screenshot shows a window titled "DND USER INTERFACE" containing a form for "24-HOUR PERFORMANCE SEARCH CRITERIA". The form includes fields for "Status:", "Alarms:" (listing A-CEF-01-NJ-Manalapan, A-CEF-02-ND-Fargo, and A-CEF-03-WA-Olympia), "Site Name:" (A-CEF-01-NJ-Manalapan), "NPC ID:", "Type:", "NPC Number (Hier):", and "(Ext):". Below these are three columns of "AVERAGE" statistics: CRC, UAS, CSS, MER, FES, ERS, DM, ES, FRER, CV, FEBE, FUAS, SLIP, SERS, SES, OFS, UATC, FSES, LOFA, and US. At the bottom, there are fields for "No of Days: Collected: > 010", "Since Reset:", and "Errored:". A search prompt "Enter search character '<', '>' or leave blank" is followed by "jessica: UI-03". The bottom of the window has buttons for "HELP", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

DND USER INTERFACE

Status:

Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia

24-HOUR PERFORMANCE SEARCH CRITERIA

Site Name: A-CEF-01-NJ-Manalapan

NPC ID:

Type: NPC Number (Hier): (Ext):

AVERAGE		
CRC: _____	ES: _____	SES: _____
UAS: _____	FRER: _____	OFS: _____
CSS: _____	CV: _____	UATC: _____
MER: _____	FEBE: _____	FSES: _____
FES: _____	FUAS: _____	LOFA: _____
ERS: _____	SLIP: _____	US: _____
DM: _____	SERS: _____	

No of Days: Collected: > 010 Since Reset: Errored:

Enter search character "<", ">" or leave blank

jessica: UI-03

HELP QUIT TOP MENU PRINT EXECUTE

Figure 16-109. Sample 24-HOUR PERFORMANCE Report Form

24-Hour Performance Report (Continued)

Field Descriptions The field values for the 24-HOUR PERFORMANCE Report form are described in Table 16-30.

Table 16-30. Field Descriptions for the 24-HOUR PERFORMANCE Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
NPC ID	Enter the name of the NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
Type	Enter the NPC Type (in the form ABxyz). For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
NPC Number	Enter the hierarchical (Hier) or Extended (Ext) NPC number. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
Performance Options	Select the desired performance options to display in the report. For additional information, refer to Chapter 8, NPC Provisioning.
(No of Days: Collected) Range	Select the Collected range. The choices are: ■ > - Displays NPC entries for which performance parameters were collected for a number of days GREATER than the Collected value. ■ < - Displays NPC entries for which performance parameters were collected for a number of days LESS than the Collected value.
(No of Days) Collected	Enter the number of days (in the form NNM) the performance parameters were collected.

Table 16-30. Field Descriptions for the 24-HOUR PERFORMANCE Report Form (Continued)

Field	Description
(No of Days: Since Reset) Range	Select the Since Reset range. The choices are: ■ > - Displays NPC entries for which performance parameters were reset for a number of days GREATER than Since Reset. ■ < - Displays NPC entries for which performance parameters were reset for a number of days LESS than Since Reset.
(No of Days) Since Reset	Enter the number of days (in the form <i>NNN</i>) since the performance parameters were reset.
No of Days: Errored) Range	Select the Errored range. The choices are: ■ > - Displays NPC entries which have been in error for a number of days GREATER than Errored. ■ < - Displays NPC entries which have been in error for a number of days LESS than Errored.
(No of Days) Errored	Enter the number of days (in the form <i>NNN</i>) that the NPC was errored.

Sample 24-HOUR PERFORMANCE Report

Figure 16-110 displays a sample 24-HOUR PERFORMANCE Report.

10 Mar 1999 19:44:42

-----CEF-----24-HOUR PERFORMANCE-----24-HOUR PERFORMANCE-----

NPC_Hier	Collected	Reset	Error	ESW_Avg	SES_Avg	UAS_Avg
01105	000	000	000	000000000.0	000000000.0	000000000.0
01114	000	001	000	000000000.0	000000000.0	000002101.0
01114	001	001	000	000000000.0	000000000.0	000002100.0
01116	001	001	000	000000000.0	000000000.0	000001999.0
01119	001	001	000	000000000.0	000000000.0	000023288.0

Figure 16-110. Sample 24-HOUR PERFORMANCE Report

24-Hour PM Log Report

Description

The 24-HOUR PM LOG Report displays information on discrepancies encountered during the processing of the daily 24-Hour PM reports from the DACS II or DACS II ISX.

Sample Report Form

Figure 16-111 displays a sample 24-HOUR PM LOG Report form.

The screenshot displays a terminal window titled "DND USER INTERFACE". The status line shows "Status:" and the alarm line lists "Alarms: A-CEF-01-NJ-Manalapan A-CEF-02-ND-Fargo A-CEF-03-WA-Olympia". Below this is a header "24-HOUR PERFORMANCE LOG SEARCH CRITERIA". The form fields are: "Site Name: A-CEF-01-NJ-Manalapan", "NPC ID: _ _ _ (Hier): _ _ _ (Ext): _ _ _", "Message Type: PM DATA LOST", and "Date: 31 Feb 99 Time: 12:00:00". At the bottom, there is a prompt "Enter site name:" and a user identifier "jessica: UI-03". A row of buttons includes "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 16-111. Sample 24-HOUR PM LOG Report Form

24-Hour PM Log Report (Continued)

Field Descriptions The field values for the 24-HOUR PM LOG Report form are described in Table 16-31.

Table 16-31. Field Descriptions for the 24-HOUR PM LOG Report Form

Field	Description
Site Name	Select the name of the DACS where the report will be processed. Clicking this field will display a list of DACS names.
NPC ID	Enter the name of the NPC. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
Hier/Ext	Enter the hierarchical (Hier) or Extended (Ext) NPC number. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
Message Type	Enter the type of message. For additional information, refer to the Field Description tables in Chapter 8, NPC Provisioning.
(Date) Range	Select the Date range for the report. The choices are: ■ > - Displays report items which were logged AFTER the Date ■ < - Displays report items which were logged BEFORE the Date
Date	Select the Date range for the report. The fields are: ■ Day - Select the day (<i>01</i> through <i>31</i>) ■ Month - Select the month (<i>Jan</i> through <i>Dec</i>) ■ Year - Select the year (<i>1990</i> through <i>2037</i>)

**Table 16-31. Field Descriptions for the 24-HOUR PM LOG Report Form
(Continued)**

Field	Description
(Time) Range	Select the Time range. The choices are: ■ > - Displays report items which were logged AFTER the Time ■ < - Displays report items which were executed BEFORE the Time
Time	Select the Time criteria for the report. The Time fields are: ■ Hour - Select the hour (00 through 23) ■ Minute - Select the minute (00 through 59) ■ Second - Select the second (00 through 59)

**Sample
24-HOUR PM
LOG Report**

Figure 16-112 displays a sample 24-HOUR PM LOG Report.

10 Mar 1999 19:44:42

Date	Time	Error_Msg

29JAN99	00:00:37	01102 - PM data received for unequipped NPC

29JAN99	00:00:37	01103 - PM data received for unequipped NPC

29JAN99	00:00:37	01208 - PM data received for unequipped NPC

Figure 16-112. Sample 24-HOUR PM LOG Report

Intertie Reports

Description

Intertie reports do not use a report form. They are retrieved from selecting the choice in the Intertie pull-down menu. Click the intertie bubble and select the desired choice. The report is automatically generated in a separate Netscape window.

Types

The two types of Intertie reports are:

- Intertie Port Report
- Intertie Alarm Report

Intertie Port Report

The Intertie Port Report displays a listing of NPCs and/or SNMP ports assigned to the intertie. Figure 16-113 displays a sample INTERTIE NPC report

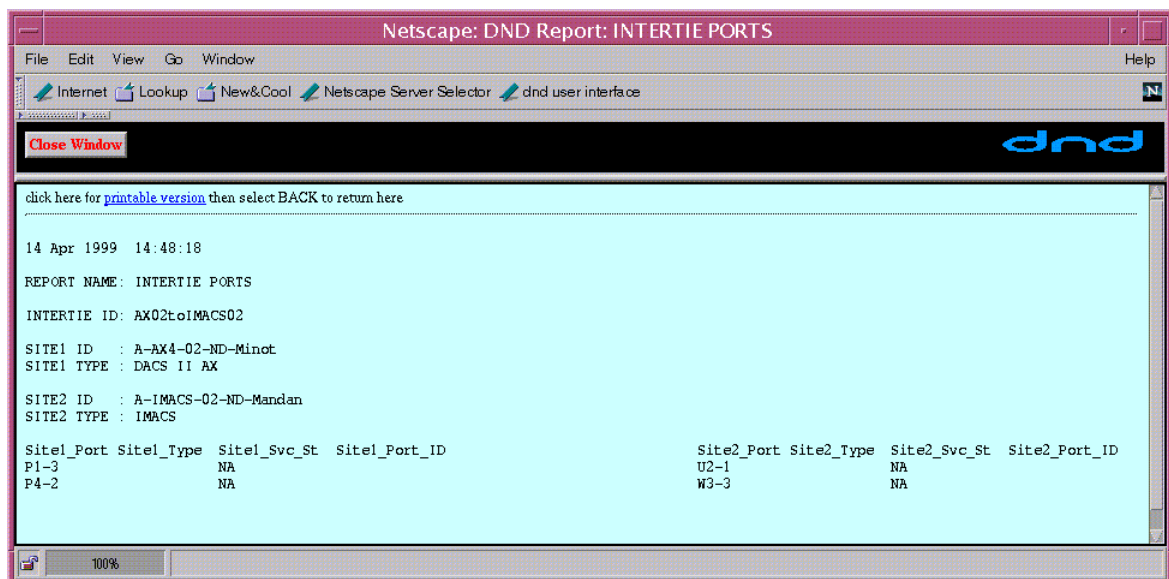


Figure 16-113. Sample INTERTIE PORT Report

(Continued on next page)

Intertie Reports (Continued)

Types, Continued Intertie Alarm Report

The Intertie Alarm Report displays a listing of NPCs and/or SNMP ports assigned to that intertie which are in alarm. Figure 16-114 displays a sample INTERTIE ALARM report

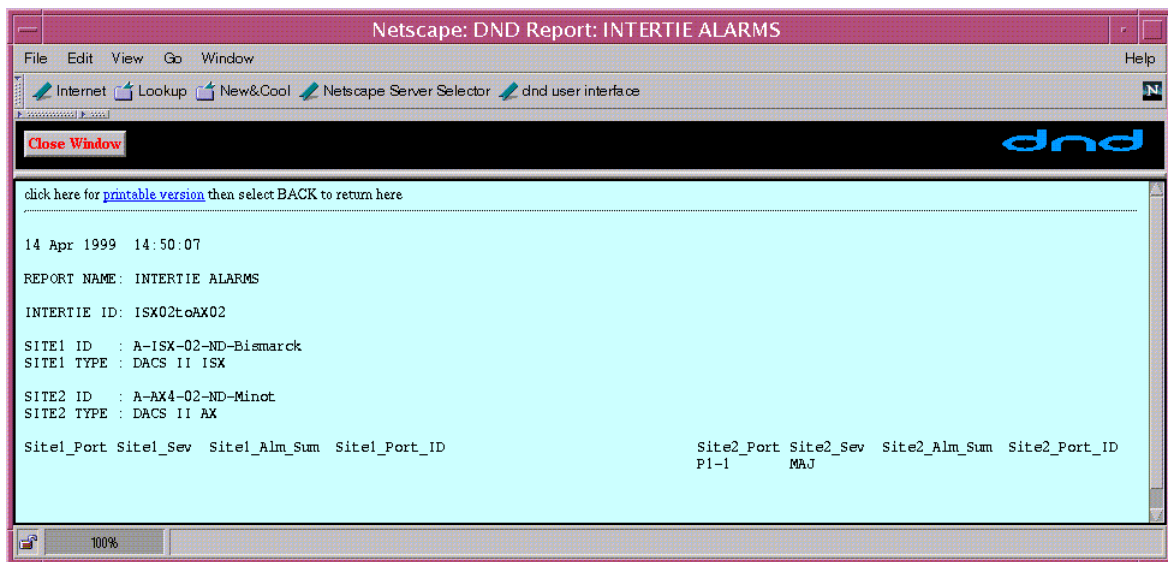


Figure 16-114. Sample INTERTIE ALARM Report

Custom Report Formats (Continued)

Edit Screen and Fields (Continued)

Once you have selected the report form category, the EDIT CUSTOM REPORT FORMAT form, as shown in Figure 16-115, is displayed. This form allows you to customize the report selected.

DND USER INTERFACE

15:15 14 Apr 1999 DND R2.0.1 / DND Forms R7.0.1

Status: Primary X.25 link 3 is on line for site ODIE-CEF-19-IL-Springfie

Alarms: **HOBBES-CEF-01-NM-SantaFe** **HOBBES-CEF-02-NM-SantaFe**

Action: MODIFY Report Name: CIRCUIT AVAILABILITY

----- site name ----- CIRCUITS ----- CIRCUIT AVAILABILITY -----

Status	Circuit_ID	Loc_A	Loc_Z	Svc_Date	CP

SELECT	ORDER	SORT	DEFAULT	COLUMN NAME	OPTIONAL	DATA WIDTH	DEF	OPT	COL	TOTAL WIDTH
				Remarks		72			72	
X	1			Ckt_Status	Status	11			11	78
X	2	1		Circuit_ID		42	28		28	
-				Class		3			5	
-				Customer Name		12			13	
X	3			Location_A	Loc_A	24	12		12	
X	4			Location_Z	Loc_Z	24	12		12	
-				F_NPC_Hier		5			10	

Enter 'X' to Select this field

jessica: UI-03

HELP SCROLLDN SCROLLUP QUIT TOP MENU PRINT EXECUTE

Figure 16-115. Sample EDIT CUSTOM REPORT FORMAT Form

To customize a new report, first CREATE it with a **Report Name**, then MODIFY the report of that name. You will be adding or removing fields from the report. The range of possible fields will be listed under COLUMN NAME. You have simply to select the desired field with an X.

Custom Report Formats (Continued)

Field Descriptions The field values for the EDIT CUSTOM REPORT FORMAT form are described in Table 16-32.

Table 16-32. Field Descriptions for the EDIT CUSTOM REPORT FORMAT Form

Field	Description
Action	Mandatory. The valid actions are: ■ <i>CREATE</i> - Creates an initial report format. ■ <i>DELETE</i> - Deletes an existing format by name. ■ <i>MODIFY</i> - Displays an existing format for editing. ■ <i>RENAME</i> - Renames an existing format.
Report Name	Mandatory. 1 through 30 alphanumeric characters. Enter the name of the report you wish to create or otherwise access with the Action .
SELECT	Accessible in <i>MODIFY</i> only, as are the remaining fields of this screen. You can select or deselect display items by inserting or deleting an X in this field.
ORDER	Numeric, 1 through the number of Xs marked in the SELECT column. The order in which the item is to appear across the report, from left to right. As you edit this format, a line is displayed across the upper portion of the screen with each column name given in the specified order.
SORT	Numeric. The sort order priority of the item. For example, to sort report records first by Circuit ID , and then by Circuit Type , enter a 1 on the line at which Circuit ID is named and a 2 on the line at which Circuit Type is named. You can specify sorting priority down to the eighth level. You must enter Priority 1 first, Priority 2 second, etc.
DEFAULT COLUMN NAME	1 through 18 alphanumeric characters. The item names appear as the column names unless you enter an alternative name as the OPTIONAL COLUMN NAME . Use PREVIOUS and NEXT to scroll through the whole listing.
OPTIONAL COLUMN NAME	1 through 18 alphanumeric characters. Column names of your own choosing. They replace the default names.

Table 16-32. Field Descriptions for the EDIT CUSTOM REPORT FORMAT Form (Continued)

Field	Description
DEF DATA WIDTH	Numeric. The widths of the database items selected. The default is used unless you enter an alternative value under OPTIONAL DATA WIDTH .
OPT DATA WIDTH	Numeric. Column widths of your own choosing. The data is truncated to these widths, if necessary.
COL DATA WIDTH	Numeric. The width of the column to be displayed as defined by the user actions. If the data exceeds the width of a column, it will appear truncated on the report. The entire entry appears in the database.
TOTAL WIDTH	Numeric. The sum of the column widths with single spacing between columns. This sum automatically changes as you select or deselect data items, or modify the OPTIONAL COLUMN NAME or OPTIONAL DATA WIDTH fields. The maximum width of the report display is 78 characters. If the data exceeds the total width, it will appear truncated on the report. The entire entry appears in the database.

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Background

Introduction

Database Audit/Synchronization consists of queries and provisioning commands. This feature allows you to perform the following:

- Compare (audit) the DND and DACS (facility) databases to note the differences
- Compare and adjust (synchronize) the DND and DACS databases to eliminate those differences
- Upload all MMFG, NPC, and provisioning data from the DACS and store it in the DND database

All audit/sync **Actions** (except for *SINGLE CHANNEL* Audit/Sync) run in the background. The message “*This command will be executed in the background*” indicates that the **Action** has been received by the DND.

Only one audit or sync **Action** per DACS can be done at a time. With very large databases, an audit/sync **Action** can take some time.

**NOTE:**

Database Audit/Synchronization is available only to the system administrator.

Objectives

This chapter provides background information to help you perform the following:

1. Channel, NPC, and MMFG Audits
 2. Alarm, Channel, NPC, and MMFG Synchronization
 3. Upload of the MMFG, NPC and circuit provisioning data into the DND database
 4. Abort a scheduled or in-progress audit/synchronization action
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Performing an Alarm Synchronization	GT 17.1G
■ Performing a Database Audit	GT 17.2G
■ Performing a Database Synchronization	GT 17.3G
■ Performing an Upload	GT 17.4G
■ Performing an Abort	GT 17.5G

DND Forms:

■ Performing an Alarm Synchronization	GT 17.1U
■ Performing a Database Audit	GT 17.2U
■ Performing a Database Synchronization	GT 17.3U
■ Performing an Upload	GT 17.4U
■ Performing an Abort	GT 17.5U
■ Viewing the Results of an Audit or Synchronization	GT 17.6U
-

Related information

For related information see:

- *DACS II Network Director Installation Manual*
-

Database Audit

Description

An audit will compare the MMFG, NPC, or channel information in a facility database with the same information in its corresponding local database. This is used to display the discrepancies for troubleshooting MMFG, NPC, or channel irregularities or problems. The discrepancies stored in the audit/synchronization log, which can be accessed through the AUDIT/SYNCHRONIZATION report.

An MMFG audit compares MMFG provisioning information; an NPC audit compares NPC provisioning information; and a Channel audit compares circuit provisioning information. The specific parameters that are audited are listed in Table 17-1 and Table 17-3.

Scheduling

The scheduling of a database audit insures that changes between the DACS and DND databases are logged. An audit action may take some time, so the ability to schedule it for a later time may prove helpful. This can be used as a daily or weekly maintenance routine, or anytime needed.

MMFG Audit

Description

The MMFG Audit allows you to compare MMFG Provisioning information in the DACS and DND databases. Discrepancies between the databases are logged and can be accessed through the AUDIT/SYNCHRONIZATION report.

Qualifying the MMFG Audit

To qualify the audit, you can choose to audit:

- A single MMFG
 - All facility MMFGs (all MMFGs in the DACS database will be compared)
 - All local MMFGs (all MMFGs in the DND database will be compared)
 - A range of facility MMFGs
 - A range of local MMFGs
-

MMFG Audit (Continued)

MMFG Audit Parameters

Table 17-1 illustrates the MMFG parameters that are audited.

Table 17-1. MMFG Parameters Audited

Type of MMFG	MXxyz	EXxyz	HXxyz
Service State	X	X	X
Type	X	X	X
MMFG number	X	X	X
Alarm State*	X	X	X
BERM	X	X	X
BERT	X	X	X
LBO	X	X	X
Performance thresholds			X
MIU**		X	

*Only synchronized when the DACS is the master.

** The MIU is supported only for DS3U (not for HDS3U).

The allowed values of each field can be found in Chapter 10, MMFG Provisioning. If no difference in value between the same field in the same MMFG record of each database is found, then no further action is taken.

NPC Audit

Description

The NPC Audit allows you to compare NPC Provisioning information in the DACS and DND databases. Discrepancies between the databases are logged and can be accessed through the AUDIT/SYNCHRONIZATION report.

Qualifying the NPC Audit

To qualify the audit, you can choose to audit:

- A single NPC
 - All facility NPCs (all NPCs in the DACS database will be compared)
 - All local NPCs (all NPCs in the DND database will be compared)
 - A range of facility NPCs
 - A range of local NPCs
-

NPC Audit (Continued)

NPC Audit Parameters

Table 17-2 illustrates the NPC parameters that are audited.

Table 17-2. NPC Parameters Audited

Type of NPC	DE/TE	PB/PC	DA/ TA	PA / TH	DC	Clear DE/TE	Clear DA/ TA	Clear PA	SD
Service State	X	X	X	X	X	X	X	X	X
Type	X	X	X	X	X	X	X	X	X
NPC number	X	X	X	X	X	X	X	X	X
Alarm State*	X	X	X	X	X	X	X	X	X
IW	X	X	X	X	X				
TS0		X**		X					
TS0M		X**		X					
AIS Alarm Level	X	X	X	X		X	X	X	
NFS†				X					
Performance thresholds	X**	X**		X		X		X	

*Only synchronized when the DACS is the master.

**Applies only to DACS II.

† NFS (non-framing setting) is the NFW value of Framing on CIRCUIT PROVISIONING.

The allowed values of each field can be found in Chapter 8, NPC Provisioning. If no difference in value between the same field in the same NPC record of each database is found, then no further action is taken.

NPC Audit (Continued)

NPC Audit Parameters (Continued)

If a difference is found, it is recorded in one of six possible records in the audit/synchronization log. The following six field discrepancy records are possible:

- **Service State, Type, or IW**
- **TS0 or TS0M**
- Performance monitoring threshold values
- **Alarm State**
- **NFS**
- **AIS Alarm Level**

Each of the above fields in every NPC record of the range is checked and all discrepancies are logged.

If there is a Performance Thresholds discrepancy, the DACS value "10" will be represented by a "G" in the log.

Channel Audit

Description

Channel audit allows you to compare the circuit provisioning information between the DACS and DND databases. Discrepancies are logged and can be accessed through a AUDIT/SYNCHRONIZATION report.

Qualifying the Channel Audit

To qualify the audit, you can choose to audit:

- A single channel on a single NPC
 - All channels on a single NPC
 - All channels on all facility NPCs (channels of all NPCs in the DACS database will be compared)
 - All channels on all local NPCs (channels of all NPCs in the DND database will be compared)
 - All channels on a range of facility NPCs
 - All channels on a range of local NPCs
-

Channel Audit (Continued)

Channel Audit Parameters

Table 17-3 lists the circuit parameters audited.

Table 17-3. Circuit Parameters Audited

Type of circuit	CEPT nxDS0	NAS nxDS0	Gateway nxDS0	DMB*	Clear DS1*	Clear E1	Virtual multipoint*	Subrate	Estab. DS0
Ckt Status	X	X	X	X	X	X	X	X	X
Ckt Class	X	X	X	X	X	X	X	X	X
FROM NPC	X	X	X	X	X	X	X	X	X
(Forms) FROM Ch (GUI) FROM Channel	X	X	X	X			X	X	X
FROM CUST								X	
TO NPC	X	X	X	X	X	X	X	X	X
(Forms) TO Ch (GUI) TO Channel	X	X	X	X			X	X	
TO CUST								X	
DMB Mode				X					
NTR				X					
Bandwidth	X	X	X	X			X		
Bandwidth Type	X	X	X	X			X		
(Forms) IW (GUI) Insertion Word	X	X	X	X			X		
TLA**	X	X	X	X	X	X	X		
NAM	X	X	X	X			X		
AIS	X	X	X	X					
RDLD	X	X	X	X	X	X	X		
(Forms) TC (GUI) Trunk Conditioning	X	X	X	X			X		
(Forms) SC (GUI) Signaling Conversion			X						

Table 17-3. Circuit Parameters Audited (Continued)

Type of circuit	CEPT nxDS0	NAS nxDS0	Gateway nxDS0	DMB*	Clear DS1*	Clear E1*	Virtual multipoint*	Subrate	Estab. DS0
Framing	X		X						
Transmission Rate								X	X†
UMC, MUX, SIG, Framing								X	
Transmission Standard									X

* DACS II ISX Release 1.0 does not support these circuit types.

** Only synchronized when the DACS is the master and one end for one-way or two ends for two-way are terminated or unterminated.

† For Transmission Standard X.50 only.

The allowed values for each field can be found in chapter 9, Circuit Provisioning. If no difference in the value of a field between databases is found, no further action is taken. If a difference is found in one field, it is recorded in the audit/synchronization log. The remaining fields of the record are checked and remaining discrepancies are noted internally, but are not logged.

Single Channel Audit

Use

To display all differences, utilize the *CHANNEL AUDIT Action* in *SINGLE CHANNEL* (DND GUI)/*SINGLE CHAN* (DND Forms) **Mode**. All of the differences are shown on the CIRCUIT PROVISIONING form(s) except for **Mode**, **NTR**, and **Framing**.

One-Way and Two-Way Circuits

One channel has two directions. Figure 17-1 depicts two one-way, two-point circuits (**Class** of *HDX*) utilizing the same channel, Ch x, at the FROM side.

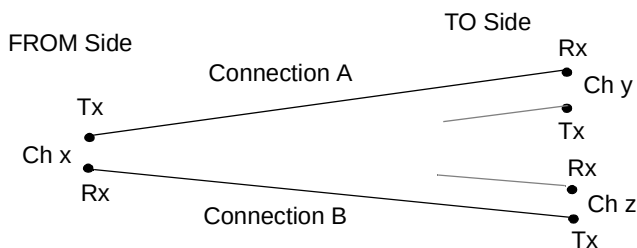


Figure 17-1. Two One-way, Two-point Circuits

Figure 17-2 depicts a two-way, two-point circuit (**Class** of *FDX*) Ch y and Ch z are the same channel, and both directions are used for channel operation.

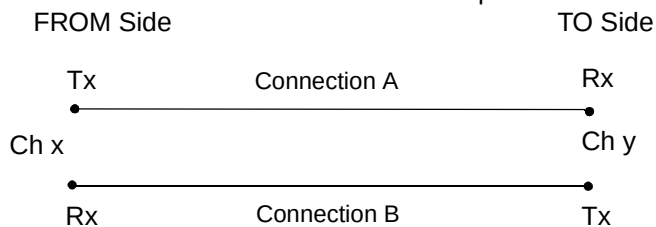


Figure 17-2. A Two-point, Two-way Circuit

DND Forms: Single Channel Audit, Continued

Single Channel Audit Fields

The FROM side **NPC ID** and **Channel** are stated in the upper portion of the form. The fields in the bottom half of the form, if they appear, state the TO side information. The **Fr NPC** states the hierarchical or extended number of the Tx side of Connection B; for example, at the TO side. In the *FDX* case, it is the same as the Rx side of Connection A. Figure 17-3 displays an example of the DATABASE AUDIT/SYNCHRONIZATION form.

The screenshot shows a terminal window titled "DND USER INTERFACE". The status is "Status:" and "Alarms:". The main title is "DATABASE AUDIT/SYNCHRONIZATION". The form displays the following information:

Site Name: A-ISX-01-NJ-Manalapan
 Action: CHANNEL AUDIT Mode: SINGLE CHANNEL

NPC ID: 0013NPC001 Channel: 01
 Hier: 01113 Ext: 0013

LOCAL INFO		DACS INFO	
Fr	To	Fr	To
NPC: <u>0013</u>	<u>0013</u>	<u>0013</u>	<u>0013</u>
Ch: <u>002</u>	<u>002</u>	<u>002</u>	<u>002</u>
IN: _____	_____	FF	FF
Term: _____	TLR	_____	TLR
Opts: _____	_____	NAM	NAM
SC: _____	_____	PPPP,PPPP	PPPP,PPPP
TC: _____	_____	X-FF,X-FF	X-FF,X-FF

Command completed. Channel 1 data displayed.
 Enter the NPC Number (Hierarchical format) _____
 jessica: UI-05

At the bottom, there are buttons: HELP, QUIT, TOP MENU, PRINT, EXECUTE.

Figure 17-3. DND Forms: Sample DATABASE AUDIT/ SYNCHRONIZATION form - CHANNEL AUDIT Action

DND Forms: Single Channel Audit, Continued

Field Descriptions The field descriptions that appear at the bottom of the form are described in Table 17-4.

Table 17-4. DND Forms: Single Channel Audit Field Descriptions

LOCAL INFO Fr	Display-only. The identifying information of the TO side Tx channel as that information appears in the local database. NPC is the hierarchical or extended number.
LOCAL INFO To	Display-only. The identifying information of the TO side Rx channel as that information appears in the local database.
DACS INFO Fr	Display-only. The identifying information of the TO side Tx channel as it appears in the DACS database.
DACS INFO To	Display-only. The identifying information of the TO side Rx channel as it appears in the DACS database.

Database Synchronization

Description

A synchronization will audit and when possible, adjusts the data compared in the DND and DACS databases, so that they are identical. This is subject to certain constraints, which are detailed later in this section. One database is selected as the master database (**Master DB**), while the other database is changed to match it.

**NOTE:**

Echoed Response Processing (ERP) helps to keep the DND and DACS databases in sync, but Database Synchronization allows you to manually sync the databases.

Scheduling

The scheduling of a database synchronization insures that the DACS and DND databases are kept up to date. This can be used as a daily or weekly maintenance routine, or anytime needed in troubleshooting NPC, MMFG, or channel irregularities or problems.

MMFG Synchronization

Description

An MMFG synchronization first performs an MMFG audit. Then it attempts to insure that the discrepancies noted in the audit/synchronization log as a result of that audit are removed. The results of each command are then noted in additional records in the audit/synchronization log as success or failure, with the reason for the failure. If no corresponding MMFG provisioning record exists, one is created.

- If the DND is the master, *MMFG SYNC* sends commands to the DACS to provision it in such a way as to change the values of the fields noted as inconsistent.
- If the DACS is the master, *MMFG SYNC* changes the existing field in the DND database.

New MMFG IDs

New MMFG IDs created by MMFG synchronization have the following format:

MMFG_{xx-y}

where:

xx	The unit number.
y	The MMFG number (P, 1-6).

If the identifier is already in use, a **.z** suffix is added to create a unique identifier, where **z** is an integer from 0 to 9.

MMFG Synchronization (Continued)

Limitations

The limitations on the use of MMFG synchronization are as follows:

- When the DND is the master:
 - If there are discrepancies that would require removing an MMFG at the DACS, and there are NPCs in service on that MMFGs, the MMFG sync will fail for that particular MMFG and will continue with the next MMFG.
 - If there are discrepancies that would require removing the MMFG at the DACS, and there is no protection for the MMFG, the sync will fail.
 - If there are discrepancies that would require deleting an MMFG at the DACS, and the MMFG is under protection, the sync will fail.
 - The DACS does not allow some MXR type changes; for example, it does not allow a type change from HX100 to MX100.
-

NPC Synchronization

Description

An NPC synchronization first performs an NPC audit. Then it attempts to insure that the discrepancies noted in the audit/synchronization log as a result of that audit are removed. The results of each command are then noted in additional records in the audit/synchronization log as success or failure, with the reason for the failure. If no corresponding NPC provisioning record exists, one is created.

- If the DND is the master, *NPC SYNC* sends commands to the DACS to provision it in such a way as to change the values of the fields noted as inconsistent.
- If the DACS is the master, *NPC SYNC* changes the existing field in the DND database.

New NPC IDs

New NPC IDs created by NPC synchronization have the following format:

- For DACS systems provisioned with hierarchical numbering links are in the format: **NPCxxxxx**
- For DACS systems provisioned with extended numbering links are in the format: **NPCyyyy**

where:

xxxxx is the hierarchical number for the NPC

yyyy is the extended number for the NPC

If the identifier is already in use, a .z is suffixed to create a unique identifier, where z is an integer from 0 to 9.

NPC Synchronization (Continued)

Limitations

The limitations on the use of NPC synchronization are as follows:

- When the DND is the master:
 - If there are discrepancies of **NPC Type** that would require unequipping the NPC at the DACS, and there are circuits on these NPCs, the NPC sync will fail for that particular NPC and will continue with the next NPC.
 - When auditing NPCs (*ALL LOCAL NPCS* or *RANGE OF LOCAL NPCS*), unequipped NPCs at the DND are not processed. If the NPC is equipped at the DACS, the NPC will not be degrown (unequipped) at the DACS.
 - When the DACS is the master:
 - If there are discrepancies of equipage state that would require unequipping the NPCs at the DND, and there are circuits on these NPCs at the DND, then the NPC sync will fail for that particular NPC and move on to the next NPC.
-

Channel Synchronization

Description

A channel synchronization insures that the end-points and circuit characteristics noted as different in a channel audit are reconciled, subject to limitations.

- If the DACS is the master, then the circuit provisioning records of the local database are either updated, or are deleted and new records are created.
- If the DND is the master, then circuit provisioning commands are sent to the DACS.

**NOTE:**

During Channel Synchronization if DACS is the master, there is an environment variable that controls which channels are to be deleted or deactivated, (SYNC_DEACTIVATE_CKTS). For additional information, refer to the "Setting Environment Variables" section in Chapter 2, Getting Started.

New Circuit IDs

New circuit IDs have the following format:

- For circuit classes *FDX*, *HDX*, *BBL*, *BRD*, and *DMB*:
SYN fromnpc-fromchan tonpc-tochan BW/bw class
- For substrate circuits:
SYN fromnpc-fromchan-fromcust tonpc-tochan-tocust rate
SUB BW/bw class
- For established DS0 circuits:
SYN fromnpc-fromchan tonpc sectype **EST**
- For new BCON BKB circuits:
BYN fromnpc-fromchan tonpc-tochan BW/bw class

(Continued on next page)

Channel Synchronization (Continued)

New Circuit IDs, Continued

Where:

fromnpc	is the FROM NPC number in hierarchical or extended format, depending on how the DACS was provisioned.
fromchan	is the FROM channel number, or <i>DS1</i> or <i>E1</i> .
from-cust	is the FROM customer number.
tonpc	is the TO NPC number in hierarchical or extended format.
tochan	is the TO channel number, or <i>DS1</i> or <i>E1</i> .
tocust	is the To customer number.
bw	is the bandwidth, which is either 1 or the number of contiguous channels of a high-rate circuit.
rate	is the subrate transmission rate.
class	is the Ckt Class : <i>FDX</i> , <i>HDX</i> , <i>BBL</i> , <i>BRD</i> or <i>DMB</i> .
sech-type	is the type of SRM NPC.

If the identifier is already in use, a .z is suffixed to create a unique identifier, where z is an integer from 0 to 9.

Channel Synchronization (Continued)

Limitations

The limitations on the use of channel synchronization are as follows:

- Channel synchronization does not automatically equip NPCs. If an NPC is missing from one database, the synchronization of channels within it is not performed. It is suggested, therefore, that you precede a channel synchronization with an NPC synchronization.
 - Channels that are connected to a test port in either the DND or the DACS are not audited or synchronized.
 - DMB cascades are not audited or synchronized.
 - Channels that are established for subrate cross-connection are not audited or synchronized. Their existence is logged.
 - The BKB of a BCON circuit must be in the range of the NPC synchronization request for that BKB to be synchronized. This means that if a leg is encountered in the range of the request, and the BKB is not in the range of the request, the LEG will not be individually synchronized. The report for the audit/synchronization results will, however, identify this and will identify the BKB. Note, however, that if the BKB is in the range of the sync request then ALL LEGS associated with the BKB will be synchronized.
-

Channel Synchronization (Continued)

DND as Master

When the DND is the master:

- There is no command to modify provisioning in the DACS. The DND always disconnects and connects when it changes frame provisioning.
- If NPCs are equipped in the DND, but their channels are not cross-connected, the channel synchronization disconnects all circuits in the same NPCs of the DACS.
- Discrepancies of **Ckt Class**, **Ckt Status**, end points, **Trunk Conditioning / TC**, **Signaling Conversion/SC**, **Insertion Word/IW**, and **Options** result in disconnection in the DACS and connection of new circuits with the matching attributes.
- The Termination State (*TLA* or *TLR* (DND GUI)/**Option G** (DND Forms) of a circuit is not changed in the DACS during synchronization, unless the circuit is being disconnected and reconnected because of another discrepancy.
- A number of limitations apply to virtual conference circuits when the DND is the master, as shown in Figure 17-4.
 - If a BBL required by the synchronization of the circuit is already in use in the DACS, the synchronization does not change it in any way.
 - If the BBL is already in use in the DACS, the synchronization does not connect its BRDs unless the facility BBL is the same as the local BBL in every field of interest.
 - The synchronization does not connect a BRD unless its bandwidth is the same as that of the BBL.
 - The synchronization does not disconnect a virtual conference type if the bandwidth does not match.

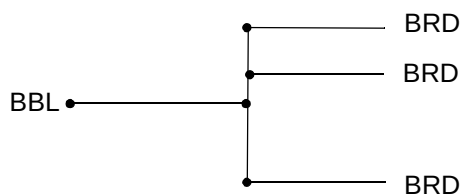


Figure 17-4. Virtual Multipoint Circuit

(Continued on next page)

Channel Synchronization (Continued)

DND as Master, (Continued)

**NOTE:**

The limitations on virtuals are designed to protect the DACS user who is not utilizing DND. The DND is not allowed to automatically interfere in existing DACS circuits by preempting control of a virtual node or of virtual conference circuits already in use by others.

DACS as Master

When the DACS is the master:

- Channel synchronization and circuit echoed response processing delete records that cannot be corrected.
- Differences of end points, **Circuit Class**, **Circuit Status**, **DMB Mode**, or **Bandwidth** result in deletion of the circuit record containing them and activation of a new circuit record with matching attributes.
- Differences of **Trunk Conditioning**, **Insertion Word**, **Signaling Conversion**, **No Transmit (NTR)** (DMB only), **Termination State**, or **Options** result in modification of the existing circuit record.
- The termination state can only be fully synchronized if both ends of the connection in the DACS are the same, either *TLA* or *TLR*. If they are not the same you can use the **TERMINATE Action** with the **Direction** field in Test Access to reset the termination state of one side.
- If the bandwidths do not match in corresponding virtual conference circuits, the entire circuit in the DND is deleted.

(Continued on next page)

Channel Synchronization (Continued)

DACS as Master, (Continued)

- The DACS provisions DND high-rate circuits as individual channels. As a result:
 - If the DND record no longer exists, a separate DND record is created for each channel of a circuit that was originally high-rate in the DND.
 - If the DND record is still present and the circuit corresponds in every way to the DACS circuit, no changes are made.
 - If the DND record is still present, but some of the circuit characteristics have changed, they can be made to correspond to the DACS.
 - If there is a discrepancy that cannot be corrected globally, over the entire circuit; for example, the **Trunk Conditioning** (DND GUI)/**TC** (DND Forms) in the DACS is not the same as for all the DND circuit's channels, then the DND record is deleted and new records are written.
 - If a channel was originally in the high-rate circuit but for some reason is not now the same as in the DACS, synchronization will delete the DND high-rate record and will create individual records of single-channel **Bandwidth** (DND GUI)/**BW** (DND Forms) for all remaining connections in the high-rate that still match.
-

Upload

Description

MMFG, NPC, channel, and alarm synchronizations are combined in the *UPLOAD Action*. An *UPLOAD* loads the information located in the remote DACS database into the local, or DND, database for the DACS. It does so in five stages, as shown in Figure 17-5 through Figure 17-8.

UPLOAD does not first delete the existing information in the local database. The information is checked as in an audit. If matches are found in the values of the fields of interest, no action is taken, and the information remains. Otherwise, records are deleted, revised or created according to the rules for *MMFG SYNC*, *NPC SYNC*, *CHANNEL SYNC* and *ALARM SYNC*.

You can execute an *UPLOAD* repeatedly to bring about a successively closer correspondence of the databases, without loss of data you may want to keep, such as the previous circuit attributes.

Upload Stage 1

Figure 17-6 illustrates the first stage of the upload process.

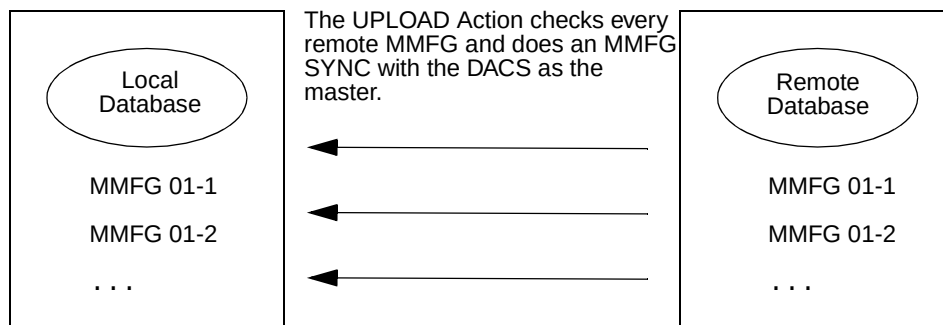


Figure 17-5. Stage 1 of the UPLOAD Action: MMFG SYNC

Upload (Continued)

Upload Stage 2

Figure 17-6 illustrates the second stage of the upload process.

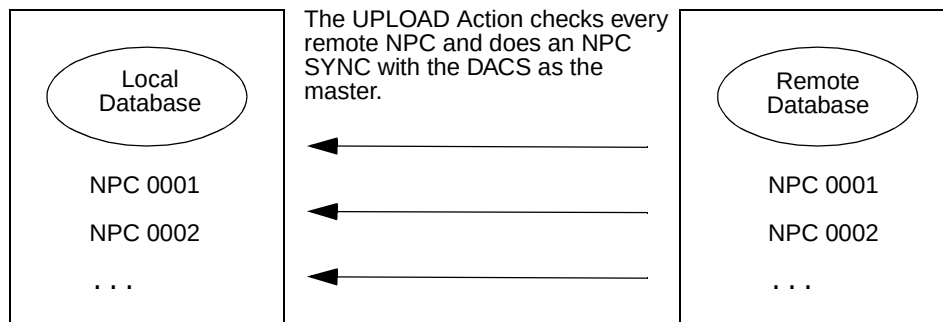


Figure 17-6. Stage 2 of the UPLOAD Action: NPC SYNC

Upload Stages 3 and 4

The result of the second stage, shown in Figure 17-7, is that the NPC provisioning in the local database conforms to the NPC provisioning in the remote database, subject to the limitations of an *NPC SYNC*.

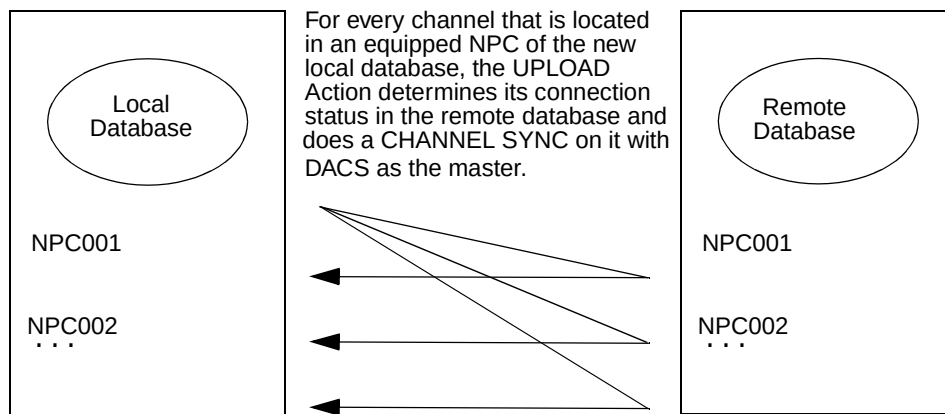


Figure 17-7. Stage 3 & 4 of the UPLOAD Action: CHANNEL SYNC/SUBRATE SYNC

Upload (Continued)

Exceptions to Stages 3 and 4

There may be some exceptions in the second and third stages according to the limitations on the use of *NPC SYNC*, *CHANNEL SYNC*, and *UPLOAD*.

For example, circuits for remote channels under test or used as test ports, or circuits that are not supported by the DND, are not recorded in the local database. Instead, an exception report is placed in the log.

Upload Stage 5

Figure 17-8 illustrates the fifth stage of the upload process, the Alarm Sync.

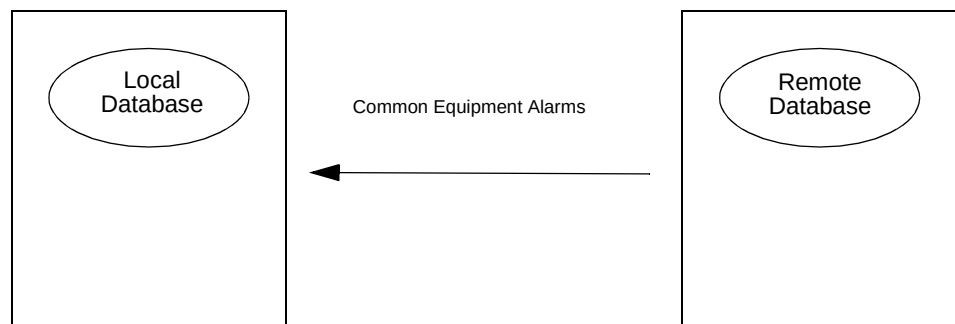


Figure 17-8. Stage 5 of the UPLOAD Action: ALARM SYNC

Other Features and Constraints

Recommendations Database audit/synchronization may take a long time. Therefore, scheduling these activities for off-peak times is suggested. However, there are some constraints. A channel audit for a single channel runs in the foreground. Everything else, whether scheduled or not, runs in the background.

Additional Restrictions

Some additional features of audit/synchronization are:

- Certain functions are denied when others are in progress (such as executing the ALARM QUERY REPORT form), is not allowed during an audit/synchronization.
- Audit/synchronization cannot be performed when any user is in SNIDER passthrough mode, or doing a database restoral.
- Any user with the ADMIN user class can terminate an audit/synchronization from any terminal with the **ABORT Action**.
- Audit synchronization applies to these DACS types only: DACS II Releases 4 and higher; and DACS II ISX Releases 1.0 and higher. A table of NPC types supported for each frame is shown in Table 17-5. In addition, Table 17-5 lists DSP types supported for the X.50 and X.57 subrate provisioning.

Table 17-5. NPC Types Supported in Audit/Synchronization

	PB	PC	PA	DC	DE	TE	TH	DA	TA	MB	SR	MJ	Virtual	SD
DACS II before Release 6.0	X	X			X	X								
DACS II Release 6.0 and after	X	X	X		X	X	X***	X	X					
DACS II ISX Releases 1.0 and higher			X*					X						X**

* DACS II ISX Releases 1, 1.1 do not support the clear DS1/E1 versions of Types PA and DA.

** DACS II ISX Release 2.0 and higher.

*** DACS II Release 8.0 and higher.

Other Features and Constraints (Continued)

Scheduling

Scheduling relieves the administrator of some repetitive work; however, the administrator should be aware that some circumstances can inadvertently change scheduled operations. Unintended change of a scheduled audit or synchronization will occur if the time schedule for the audit/synchronization is added, changed, or deleted.

When the database is restored, the schedule that existed before backup also is restored, and the new schedule that was entered after backup is lost. Therefore, it is recommended that whenever you restore the DND database from floppy disk, you reenter any scheduled operations.

Audit/Sync Log

A log is kept during auditing of all mismatches and during synchronization of all connects and disconnects in a frame, or of all deactivations, deletions and activations in the DND. The log also records successes and failures of synchronization. The log is available through the AUDIT/SYNCHRONIZATION report.

The log contains records of activity related to NPCs. Data from each successive audit/synchronization overwrites the previous records. Data not overwritten remains. Thus, an *ALL FACILITY NPC* **Mode** NPC Sync would create records for every NPC, but a succeeding *SINGLE NPC* **Mode** NPC Sync would overwrite the records for one NPC only.

The log may be large if this is the first audit or synchronization and the differences are great. A report of the audit/sync results which does not qualify the range of NPCs in the report may be quite large. Qualify the report by limiting the range of NPCs in the report.

DND GUI: Audit/Synchronization Form

Sample Audit/ Sync Form

Figure 17-9 shows a sample DATABASE AUDIT/SYNCHRONIZATION form for an *NPC SYNC*. The fields displayed on the form are dependent on the **Action** and **Mode** selected.

The screenshot shows the 'DATABASE AUDIT/SYNCHRONIZATION' window. At the top, there's a 'dnd' logo and an 'Alarms' button. The form is divided into several sections:

- Site Name:** A-CEF-01-NJ-Manalapan
- Action:** NPC SYNC (Selected)
- Mode:** RANGE OF FACILITY NPCS (Selected)
- Master DB:** ☒ Frame ☐ Local
- NPC Section:**
 - ID:** 02202NPC001
 - NPC Type:** PA184 **Hier:** 02202 **Extd:** 0202
- LAST NPC Section:**
 - ID:** 02220NPC001
 - NPC Type:** PA184 **Hier:** 02220 **Extd:** 0220
- Control Options:**
 - Execution Mode:** ☐ Immediate ☒ Schedule
- Scheduling Options:**
 - DATE:** Day: 15, Month: Mar, Year: 1999
 - TIME:** Hour: 20, Minute: 30
 - Repeat:** Number of times: 01, Interval: 00, Scale: None
- Buttons:** Back, Continue..., Restart, Close
- Footer:** ? Continue with next section of the form

Annotations with arrows point to the 'Action' dropdown, the 'Mode' dropdown, and the 'Master DB' checkboxes.

Figure 17-9. DND GUI: Audit/Synchronization Form, *NPC SYNC* Action

DND GUI: Audit/Synchronization Form (Continued)

Field Descriptions The field descriptions for the DATABASE AUDIT/SYNCHRONIZATION form are described in Table 17-6.

Table 17-6. DND GUI: Field Descriptions for the AUDIT/ SYNCHRONIZATION Form

Field	Description
Site Name	(Combo box) Mandatory. Select the name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically. To change the sorting order, modify the setting for the SORT_NAME_BY variable using the DND Forms Interface.
Action	(Combo box) Mandatory. Select the type of audit/synchronization to be executed. For full details, be sure to refer to the introduction to each Action , given previously in this chapter. The choices are: ■ ALARM SYNC - Performs a synchronization of Alarm State only, on the same NPCs as would be specified by ALL LOCAL NPCs Mode. This Action is a manual version of automatic alarm synchronization described in the NPC Alarm Sync field under DACS administration in the SYSTEM ADMINISTRATION chapter. ■ CHANNEL AUDIT/SYNC - Compares local and facility cross-connection databases, logs differences in parameters that are common to the two, and synchronized by eliminating those differences according to restrictions. The range of channels to be synchronized is specified by Mode and channel selection fields. ■ NPC AUDIT/SYNC - Compares local and facility NPC provisioning databases, logs differences in parameters that are common to the two, and synchronizes by eliminating those differences according to restrictions. The range of NPCs to be compared is specified by Mode or by Mode and NPC selection fields.

**Table 17-6. DND GUI: Field Descriptions for the AUDIT/
SYNCHRONIZATION Form (Continued)**

Field	Description
Action, Continued	■ <i>MMFG AUDIT/SYNC</i> - Compares local and facility MMFG provisioning databases, logs differences in parameters that are common to the two, and synchronizes by eliminating those differences according to restrictions. The range of MMFGzs to be compared is specified by Mode or by Mode and MMFG selection fields. ■ <i>SUBRATE AUDIT/SYNC</i> - (Available only if you have the X.50/X.57 Subrate Application running on a DACS.) Compares local and facility cross-connection databases, logs differences in parameters that are common to the two, and synchronized by eliminating those differences according to restrictions. The range of channels to be synchronized is specified by Mode and channel selection fields. ■ <i>UPLOAD</i> - Initiates an <i>NPC SYNC</i> in <i>ALL FACILITY NPCS Mode</i> with DACS as Master DB, followed by a <i>CHANNEL SYNC Action</i> in <i>ALL LOCAL NPCS Mode</i>, again with Master DB. You can use <i>UPLOAD</i> to load the DND database initially with data taken from the DACS database. The <i>UPLOAD</i> Action only logs failures. ■ <i>ABORT</i> - Cancels the audit/synchronization currently executing in the background or on queue.

**Table 17-6. DND GUI: Field Descriptions for the AUDIT/
SYNCHRONIZATION Form (Continued)**

Field	Description
Mode	(Combo box) Mandatory. Select the range of NPCs, MMFGs, or channels to which the Action is to apply. A selection referring to NPCs, such as <i>ALL FACILITY NPCS</i>, also implies all the associated channels. The available modes will change depending on what ACTION was selected. The choices are: ■ <i>ALL FACILITY NPCS</i> - Selects all NPCs that can be equipped in the DACS. ■ <i>RANGE OF LOCAL NPCS</i> - Indicates that the range of local NPCs to be considered is bounded by the NPC ID field or its corresponding Hier or Ext fields and the Last NPC ID field. ■ <i>ALL LOCAL NPCS</i> - Selects all NPCs that are currently equipped in the local database. ■ <i>RANGE OF FACILITY NPCS</i> - Indicates that the range of facility NPCs to be considered is bounded by the NPC ID field or its corresponding Hier or Ext fields and the Last NPC ID fields ■ <i>SINGLE NPC</i> - Selects the channels of the NPC specified by NPC ID or the associated hierarchical or extended number ■ <i>ALL FACILITY MMFGS</i> - Selects all MMFGs that can be equipped in the DACS. ■ <i>RANGE OF LOCAL MMFGS</i> - Indicates that the range of local MMFGs to be considered is bounded by the MMFG ID field or the associated number and the Last MMFG ID field. ■ <i>ALL LOCAL MMFGS</i> - Selects all MMFGs that are currently equipped in the local database. ■ <i>RANGE OF FACILITY MMFGS</i> - Indicates that the range of facility MMFGs to be considered is bounded by the MMFG ID field or the associated number and the Last MMFG ID fields ■ <i>SINGLE MMFG</i> - Selects the channels of the MMFG specified by MMFG ID or the associated number ■ <i>SINGLE CHANNEL</i> - Selects the channel specified by the NPC ID or its Hier or Ext equivalents and the Channel

**Table 17-6. DND GUI: Field Descriptions for the AUDIT/
SYNCHRONIZATION Form (Continued)**

Field	Description
Master DB	(Radio buttons) Appears for SYNC Actions only. Select the master database for a sync. The choices are: ■ Facility - Use the facility database as the master. ■ Local - Use the local database as the master.
NPC ID/ LAST NPC ID	Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name, associated with the specified Number. The CREATE Action associates the name and number. Only one NPC ID can be associated with a Number within a DACS, and also, an NPC ID can be associated with only one NPC. An NPC ID uniquely identifies an NPC. Once the NPC ID is entered, the NPC Type, Hier, and Ext fields appear as read-only and pre-populated.
MMFG ID/ LAST MMFG ID	Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name, associated with the specified Number. The CREATE Action associates the name and number. Only one MMFG ID can be associated with a Number within a DACS, and also, an MMFG ID can be associated with only one MMFG. An MMFG ID uniquely identifies an MMFG. Once the MMFG ID is entered, the MMFG Number field appears as read-only and pre-populated.
Channel	Appears for AUDIT and SYNC Actions when the Mode is SINGLE CHANNEL. The channel number of the single channel to be audited or synchronized.

**Table 17-6. DND GUI: Field Descriptions for the AUDIT/
SYNCHRONIZATION Form (Continued)**

Field	Description
Execution Mode	(Radio buttons) Select whether the Action will be executed immediately (Immediate Mode) or at a later date and/or time (Schedule Mode).
Scheduling Options Mode	(Radio buttons/Combo boxes and Text fields also if <i>Schedule</i> is selected) Select when the current Action should take place. The choices are: ■ <i>Immediate</i> - Executes the Action as soon as <u>Execute</u> is clicked ■ <i>Schedule</i> - Executes the Action at a time and frequency selected by the user. After selecting <i>Schedule</i>, click <u>Continue...</u> to display the following combo box fields: — DATE fields: Day: (01 thru 31) Month: (Jan thru Dec) Year: (1990 thru 2037) — TIME fields: Hour: (00 thru 23) Minute: (00 thru 59) — REPEAT fields: Number of times (enter any number) Interval (enter any number) Scale: (None/Minutes/Hours/Days)

DND Forms: DATABASE AUDIT/ SYNCHRONIZATION Form

Sample Audit/ Synchronization Form

Select DATABASE AUDIT/SYNCHRONIZATION from the DATABASE ADMINISTRATION menu. The DATABASE AUDIT/SYNCHRONIZATION form appears. Figure 17-10 shows a sample DATABASE AUDIT/SYNCHRONIZATION form for an NPC AUDIT. The fields displayed on the form are dependent on the **Action** selected.

The screenshot displays a terminal window titled "DND USER INTERFACE". At the top, it shows the status: "Status: A-CEF-04-AZ-Phoenix Frame Administration Generic inconsistent" and "Alarms:". Below this, a header bar reads "DATABASE AUDIT/SYNCHRONIZATION". The form contains the following fields and values:

- Site Name: A-CEF-01-NJ-Manalapan
- Action: NPC SYNC Mode: RANGE OF FACILITY NPCS Master DB: FRAME
- NPC ID: 02202NPC001
- Hier: 02202 Ext: 0202
- Last NPC ID: 02206NPC001
- Hier: 02206 Ext: 0206

Below the form fields is a prompt: "Enter the site name. _____". At the bottom of the window, the text "jessica: UI-03" is visible. A row of buttons is at the very bottom: HELP, CHOICES, [blank], QUIT, [blank], TOP MENU, PRINT, and EXECUTE.

**Figure 17-10. DND Forms: Sample DATABASE AUDIT/
SYNCHRONIZATION Form**

DND Forms: DATABASE AUDIT/ SYNCHRONIZATION Form (Continued)

Field Descriptions The field descriptions for the DATABASE AUDIT/SYNCHRONIZATION form are described in Table 17-7:

**Table 17-7. DND Forms: Field Descriptions for the DATABASE AUDIT/
SYNCHRONIZATION Form**

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name . Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5, NE Provisioning for more details.
Action	Mandatory. Specifies the type of audit/synchronization to be executed. For full details, be sure to refer to the introduction to each Action, given previously in this chapter. The choices are: ■ ALARM SYNC - Performs a synchronization of Alarm State only, on the same NPCs as would be specified by ALL LOCAL NPC Mode. This Action is a manual version of automatic alarm synchronization described in the Alarm Sync field under frame administration in Chapter 5, NE Provisioning. ■ CHANNEL AUDIT/SYNC - Compares local and facility cross-connection databases, logs differences in parameters that are common to the two, and synchronized by eliminating those differences according to restrictions. The range of channels to be synchronized is specified by Mode and channel selection fields. ■ NPC AUDIT/SYNC - Compares local and facility NPC provisioning databases, logs differences in parameters that are common to the two, and synchronizes by eliminating those differences according to restrictions. The range of NPCs to be compared is specified by Mode or by Mode and NPC selection fields.

Table 17-7. DND Forms: Field Descriptions for the DATABASE AUDIT/ SYNCHRONIZATION Form (Continued)

Field	Description
Action , <i>Continued</i>	■ <i>SUBRATE AUDIT/SYNC</i> - (Available only if you have the X.50/X.57 Subrate Application running on a DACS.) Compares local and facility cross-connection databases, logs differences in parameters that are common to the two, and synchronized by eliminating those differences according to restrictions. The range of channels to be synchronized is specified by Mode and channel selection fields. ■ <i>UPLOAD</i> - Initiates an <i>NPC SYNC</i> in <i>ALL FACILITY NPCS</i> Mode with DACS as Master DB, followed by a <i>CHANNEL SYNC Action</i> in <i>ALL LOCAL NPCS</i> Mode, again with Master DB. You can use <i>UPLOAD</i> to load the DND database initially with data taken from the DACS database. The <i>UPLOAD</i> Action only logs failures. ■ <i>ABORT</i> - Cancels the audit/synchronization currently executing in the background or on queue.
Mode	Mandatory. Specifies the range of NPCs or channels to which the Action is to apply. A selection that is explicit about the NPCs, such as <i>ALL FACILITY NPCS</i>, also implies all the associated channels. The choices are: ■ <i>ALL FACILITY NPCS</i> - Selects all NPCs that can be equipped in the DACS. ■ <i>ALL LOCAL NPCS</i> - Selects all NPCs that are currently equipped in the local database. ■ <i>RANGE OF LOCAL NPCS</i> - Indicates that the range of local NPCs to be considered is bounded by the NPC ID field or its corresponding Hier or Ext fields and the Last NPC ID field.

Table 17-7. DND Forms: Field Descriptions for the DATABASE AUDIT/ SYNCHRONIZATION Form (Continued)

Field	Description
Mode , <i>Continued</i>	■ RANGE OF FACILITY NPCS - Indicates that the range of facility NPCs to be considered is bounded by the NPC ID field or its corresponding Hier or Ext fields and the Last NPC ID fields. ■ SINGLE NPC - Selects the channels of the NPC specified by NPC ID or the associated hierarchical or extended number. ■ SINGLE CHANNEL - Selects the channel specified by the NPC ID or its Hier or Ext equivalents and the Channel.
Master DB	Appears for SYNC Action values only. Selects the master database for a synchronization. The values are: ■ DACS - Use the facility database as the master. ■ LOCAL - Use the local database as the master.
NPC ID/ LAST NPC ID	Mandatory. 1 through 41 characters from the printable ASCII character set, excluding *, \, ?, [,], ^, ", %, . Blanks are allowed in the name, but leading and trailing blanks are ignored. An identifier, or name, associated with the specified Number. The CREATE Action associates the name and number. Only one NPC ID can be associated with a Number within a DACS, and also, an NPC ID can be associated with only one NPC. An NPC ID uniquely identifies an NPC.
Channel	Appears for AUDIT and SYNC Actions when the Mode is SINGLE CHANNEL. The channel number of the single channel to be audited or synchronized.
Hier	Appears with NPC ID. The NPC number in hierarchical format. Enter either this field or NPC ID/LAST NPC ID or Ext.
Ext	Appears with NPC ID/LAST NPC ID. The NPC number in extended format.

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Background

Introduction

DND provides three tools that enable you to execute a group of circuit provisioning actions. They are:

- **Reconfiguration Plan**—contains a sequence of circuit provisioning actions. A reconfiguration plan is executed manually.
- **Automatic Reconfiguration Plan**—is a set of reconfiguration plans. It can be executed manually or automatically when specified NPCs have a major or critical alarm.
- **NPC Roll**— allows you to transfer circuit connections from one facility NPC to another.

Objectives

This chapter provides background information to help you perform the following:

1. Create a reconfiguration plan
2. Create an automatic reconfiguration plan
3. Perform an NPC roll.

Related tasks

For related tasks, see the following General Tasks in Volume II:

■ Using Reconfiguration Plans	GT 18.1U
■ Using Automatic Reconfiguration Plans	GT 18.2U
■ Using NPC Roll	GT 18.3U
-

Reconfiguration Plans

Purpose

A reconfiguration plan contains a sequence of circuit-provisioning **Actions**. A reconfiguration plan enables you to:

- change the **Ckt Status** of multiple circuits already in the DND database. You can *ACTIVATE*, *DEACTIVATE*, or *ALTROUTE* existing circuits.
 - provision new circuits
 - store a list of circuit-provisioning **Actions** to be executed at a later time.
-

How to Create and Execute a Reconfiguration Plan

To create and execute a reconfiguration plan:

1. *CREATE* the plan
 2. *INSERT* items into the plan one at a time. Each item is a circuit-provisioning action and is assigned a sequence number.
 3. (Optional)
 - a. *CHECK* the plan to ensure that circuits currently exist and review the results of the check in the RECONFIGURATION PLAN RESULTS report.
 - b. Fix errors found by *CHECK* and repeat step 3a.
 4. *EXECUTE* the plan. The items in the plan are executed in order of sequence number.
 5. Review the execution results in the RECONFIGURATION PLAN RESULTS report.
-

Timeout Error Message

Ordinarily the DND User Interface waits three minutes for a reply from the DACS before reporting a *timeout error* message in the COMMAND RESPONSE box. For a circuit reconfiguration **Action**, the DND waits a default time of 30 minutes. Since the RP is being executed in the background, the DND does not report a timeout on the screen. Instead, it places the *timeout error* message in the database, to be retrieved with an RP report.

DND Forms: RECONFIGURATION PLAN PROVISIONING Form

Example - Creating a Reconfiguration Plan

From the DND Forms MAIN MENU, select PROVISIONING, then select RECONFIGURATION PLAN. A sample RECONFIGURATION PLAN PROVISIONING form is shown in Figure 18-1.

The screenshot displays a terminal window titled "DND USER INTERFACE". Inside, the "RECONFIGURATION PLAN PROVISIONING" form is active. The form contains the following fields and values:

- Status: (empty)
- Alarms: (empty)
- Site Name: **DACSWest-X25**
- RP Status: **IDLE**
- RP Action: **CREATE**
- RP ID: **testplan**

Below the form, a message states: "The command completed successfully". Below this message is a prompt: "Enter the desired action". At the bottom of the window, the text "snoopy: UI-01" is displayed. A row of buttons is at the very bottom: **HELP**, **CHOICES**, **QUIT**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 18-1. DND Forms: RECONFIGURATION PLAN PROVISIONING Form

RECONFIGURATION PLAN PROVISIONING Form (Continued)

Example - Inserting an Item into a Reconfiguration Plan

In a reconfiguration plan, you insert items to be executed. You can *ACTIVATE*, *DEACTIVATE*, or *ALTROUTE* existing circuits. Figure 18-2 shows an example of the *INSERT RP Action*.

DND USER INTERFACE

Status:
Alarms:

RECONFIGURATION PLAN PROVISIONING

Site Name: DACSCentral-X25 RP Status: IDLE
 RP Action: INSERT RP ID: altplan1 Sequence: _____

Ckt ID: Action: ALTROUTE
 Class: _____ CP: _____ Status: _____
 Bandwidth: _____ Bandwidth Type: _____

NORMAL	Hier	Ext	NPC ID	Ch
FROM:	_____	_____	_____	_____
TO:	_____	_____	_____	_____
ALTROUTE				
FROM:	_____	_____	_____	_____
TO:	_____	_____	_____	_____

Preempted
 Ckt ID: _____ Status: _____ CP: _____

Unimplemented Function Key.
 Enter Circuit ID: _____

snoopy: UI-01

HELP QUIT TOP MENU PRINT EXECUTE

Figure 18-2. RECONFIGURATION PLAN PROVISIONING Form - Insert Action

RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field Descriptions The field values for the RECONFIGURATION PLAN PROVISIONING form are described in Table 18-1.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5 for more details.
RP Status	Inaccessible through form. Indicates whether the plan has been <i>EXECUTED</i> or is <i>IDLE</i>: either never executed or executed and subsequently made <i>IDLE</i> by an RP Action of <i>IDLE</i>. Note that reconfiguration plans are executed in the background. The status displayed on the screen is the status retrieved from the database. Therefore, if you execute the plan, the RP Status may still indicate <i>IDLE</i>. You can update the screen at any time by entering the RP ID. The DND retrieves the current RP Status.
RP Action	Mandatory. Reconfiguration plan action. ■ <i>CREATE</i> - Applies to plans only. Creates a reconfiguration plan, uniquely identified by an RP ID. ■ <i>DESTROY</i> - Applies to plans only. Deletes the RP. Once the <i>DESTROY</i> form has been filled in and executed, the RP is no longer in the DND. If the RP is listed in an ARP, the <i>DESTROY</i> is rejected.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
RP Action, Continued	■ <i>BOOT</i> - Applies to plans only. Locates all <i>ACTIVE</i> and <i>ALTROUTED</i> circuits in the DND database, and places an item for each one of them in a special RP having the RP ID of <i>BootDacs</i>. Each item will bring about the same circuit status in the DACS as exists in the DND. <i>BOOT</i> then performs an <i>EXECUTE</i> on this plan in the Site-only mode, thereby booting the DACS database. If every item completes successfully, the DACS database will record the same in-service circuits as does the DND database. Unlike other RP Actions, which log both successes and failures, <i>BOOT</i> only logs the failures. ■ <i>INSERT</i> - Applies to items only. Inserts an item into the plan in the position indicated by the Sequence. If the position is already occupied, the DND places your item in front of the existing entry and adjusts the rest of the sequence numbers. If you specify a sequence number that is higher than any existing entries, the DND inserts the item at the end of the plan and assigns it the last number in the sequence. If the Ckt ID indicates the circuit does not exist, a pop-up window appears, allowing you to enter CIRCUIT PROVISIONING. When you have provisioned the circuit, you are returned to this form. A circuit can only be inserted in a plan once. However, the same circuit can be used in different plans. ■ <i>REMOVE</i> - Applies to items only. Removes an item from the plan. The DND automatically renumbers all subsequent entries in that plan.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
RP Action, Continued	■ CHANGE - Applies to items only. Changes the information in an item. An exception is the Sequence. It identifies the items in the plan and, therefore, cannot be changed directly. To change the position (Sequence) of an item in the plan, you must <i>REMOVE</i> the item and <i>INSERT</i> it where you want it to be. ■ IDLE - Applies to plans only. Reverses the provisioning accomplished by a previous execution of the plan specified in RP ID; i.e., changes each circuit status back to what it is presumed to have been before. We presume you will be starting from <i>ACTIVE</i>, <i>DEACTIVATED</i>, or <i>PENDING</i>. Exception: a circuit that had been in the <i>PENDING</i> status before the plan was executed is placed into the <i>DEACTIVATED</i> status by <i>IDLE</i>. <i>IDLE</i> undoes the provisioning in the reverse order of the plan, starting with the last item and finishing with the first, regardless of the order in which the circuits actually were provisioned. If <i>IDLE</i> discovers an action that cannot be reversed, because the circuit does not exist, it internally marks the Status null.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
RP Action, Continued	■ EXECUTE - Applies to plans only. Executes the plan specified by RP ID. Execution consists of first performing a CHECK, then executing the Actions of all items not internally marked null, in order of Sequence. Nullified items are logged anyway. <i>EXECUTE</i> does not affect circuits already in the desired circuit status. Upon completion, <i>EXECUTE</i> reports the number of circuit provisioning actions that were attempted and the number that were successfully completed. You can inspect these results by running the reconfiguration plan results report. The results of only the most recent <i>CHECK</i>, <i>EXECUTE</i>, or <i>IDLE</i> are saved in the results log for an RP. If a circuit provisioning action was unsuccessful, you can modify the plan or correct the condition that prevented execution and then execute the plan an many times as it takes to bring about all the desired circuit statuses. ■ CHECK - Applies to plans only. Checks the circuits in the plan specified by RP ID against the circuits in the current DND database, to determine which circuits have been deleted from the database. If an item specifies a circuit that does not now exist, the item is internally marked null. When <i>CHECK</i> completes, it displays the DND status message listing how many items can be successfully completed. To find out which items cannot complete and why, run the reconfiguration plan results report (see Chapter 14). Then correct the problems and perform <i>CHECK</i> again. <i>EXECUTE</i>, <i>IDLE</i>, and <i>CHECK</i> keep a results log for each RP. The reconfiguration plan results report is taken from the log. One use of one of these commands overwrites the data in the log from the previous use.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
RP Action, Continued	■ <i>CLEAN</i> - Applies to plans only. Looks for every circuit referenced in the plan. If it does not find the circuit in the appropriate DND frame database, <i>CLEAN</i> removes its reference from the plan. ■ <i>ABORT</i> - Applies to plans only. Aborts the plan currently running as a background process. Background plans are started by <i>BOOT</i>, <i>IDLE</i>, <i>EXECUTE</i>, or <i>CHECK</i>. Once an <i>ABORT</i> is entered, the DND finishes the current circuit and stops. Circuits already reconfigured remain reconfigured.
RP ID	Mandatory, up to 12 characters. Identifies the reconfiguration plan that is to be affected by the RP Action .
Sequence	Up to 5 characters. Mandatory for RP Actions of <i>INSERT</i> , <i>REMOVE</i> , <i>CHANGE</i> ; not accessible in other cases. Specifies the sequence number identifying the item in the plan.
Ckt ID	For items only. 1 through 41 characters. Identifies the circuit to which the Action of this item pertains. The circuit must already be in the database, but it can have any status there.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
Action	For items only. Specifies the operation to be performed when the plan is executed. The possible Actions are: ■ <i>ACTIVATE</i> - Changes the Status of an already existing DND circuit from <i>PENDING</i> or <i>DEACTIVATED</i> to <i>ACTIVE</i>, and cross-connects it in the DACS, making it a traffic-carrying circuit. The DND validates all fields before activating a circuit. If the circuit Status is <i>ACTIVE</i>, <i>ALTROUTED</i>, or <i>PREEMPTED</i>, this RP <i>ACTIVATE</i> will fail. ■ <i>DEACTIVATE</i> - Changes the specified circuit in the DND database to <i>DEACTIVATED</i> and disconnects it in the DACS. ■ <i>ALTROUTE</i> - Changes the specified circuit to <i>ALTROUTED</i>. Altrouting may involve the preemption of other circuits. The operator will be informed of each preemption and will be required to confirm before this item can be successfully placed in the plan. A circuit can be altrouted only once, and an <i>ALTROUTED</i> circuit cannot be preempted. <i>ALTROUTE</i> is the default Action. Between the time when the <i>ALTROUTE</i> item is entered and the time when the RP is executed, the EFTs to which the circuit is to be altrouted may have changed status. The user will be notified in the preemption confirmation pop-up inserts of their new status, and may then alter the <i>ALTROUTE</i>.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
Class	A display-only field indicating the Ckt Class (see Chapter 9: 'Circuit Provisioning) of the circuit identified by Ckt ID. ■ <i>FDX</i> - Full-duplex, a two-way, two-point circuit. ■ <i>HDX</i> - Half-duplex, a one-way, two-point circuit. ■ <i>BBL</i> - Backbone leg, a one-way, backbone leg broadcastcircuit. ■ <i>BRD</i> - Branch leg, a one-way, branch leg broadcast circuit. ■ <i>DMB</i> - Digital multipoint bridge, a two-way, multipoint circuit leg.
CP	A display-only field indicating the CP (circuit priority).
Status	A display-only field indicating the current operating status of the circuit, as follows: ■ <i>NULL</i> - The Ckt ID does not identify a circuit currently in the DND or DACS databases. The RP Action will not be accepted, and, therefore, the circuit cannot be used in the plan. ■ <i>PENDING</i> - The circuit is in the DND database, but is not cross-connected in the DACS. It is ready to be made <i>ACTIVE</i> on user request. To cross-connect the circuit, use the ACTIVATE Action, in the plan. ■ <i>DEACTIVATED</i> - The circuit is in the DND database but is not cross-connected in the DACS. It was <i>ACTIVE</i>, but was disconnected with a DEACTIVATE Action. To cross-connect the circuit, use the ACTIVATE Action. ■ <i>ALTROUTED</i> - The circuit is present in the DACS and DND databases, is cross-connected in the DACS, and is carrying transmission. However, it was temporarily rerouted over an alternate path with an ALTROUTE Action. If any part of the alternate path was in use by another circuit, that circuit was placed in <i>PREEMPTED Ckt Status</i>. An <i>IDLE RP Action</i> is required to return the <i>ALTROUTED</i> circuit to its original path.

Table 18-1. Field Descriptions for the RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field	Description
Status, Continued	■ <i>PREEMPTED</i> - The circuit was <i>ACTIVE</i> in the DACS, but has been temporarily disconnected for use by an <i>ALTROUTED</i> circuit. The circuit is in the DND database only and is not carrying transmission. One or more of its channels are being used by one or more <i>ALTROUTED</i> circuits. The <i>IDLE RP Action</i> that returns the <i>ALTROUTED</i> circuits to normal also returns the <i>PREEMPTED</i> circuits to normal. ■ <i>ACTIVE</i> - The circuit is present in the DACS and DND databases, is cross-connected in the DACS, and is carrying transmission.
Bandwidth	A display-only field indicating the circuit bandwidth.
Bandwidth Type	A display-only field indicating how bandwidth is allocated in an NPC, as described in Chapter 9: Circuit Provisioning.
NORMAL fields	Display-only fields indicating the initial TO and FROM identifying information of the circuit: the NPC number in both hierarchical and extended format, the NPC ID , and channel number (Ch).
ALTRROUTE fields	User-accessible fields specifying the altrouting information, if the Action is <i>ALTRROUTE</i> . Fill in the FROM and TO NPC and channel identifiers for this <i>ALTRROUTE</i> destination, just as you would on the ALTRROUTE screen. Refer to Chapter 9: Circuit Provisioning.
Preempted fields	The circuit identifiers for circuits that are preempted by this <i>ALTRROUTE</i> , as they would appear on the ALTRROUTE screen. Refer to Chapter 9: Circuit Provisioning.

Automatic Reconfiguration Plans

Purpose

An automatic reconfiguration plan (ARP) is a group of reconfiguration plans. It can be executed manually or executed automatically when a major or critical alarm is received from specified NPCs.

When any of the specified NPCs has a major or critical alarm, the ARP will be executed.

There are two types of items in an ARP:

- an RP to be executed
 - an NPC to be added to (or removed from) the list of trigger NPCs.
-

DND Forms: AUTOMATIC RECONFIGURATION PLAN PROVISIONING Form

Example

From the DND Forms MAIN MENU, select PROVISIONING, then select AUTOMATIC RECONFIGURATION PLAN. The AUTOMATIC RECONFIGURATION PLAN PROVISIONING form displays. Figure 18-3 provides an example of an *Insert Action* on this form.

DND USER INTERFACE

Status:
Alarms:

AUTOMATIC RECONFIGURATION PLAN PROVISIONING

Action: INSERT ARP ID: dec98 ARP Status: IDLE
List Type: ALARM Sequence: 1
Site Name: _____
Number (Hier): _____ (Ext): _____
NPC ID: _____

Enter Automatic Reconfiguration Sequence Number _____
snoopy: UI-01

HELP NEXT QUIT TOP MENU PRINT EXECUTE

Figure 18-3. AUTOMATIC RECONFIGURATION PLAN PROVISIONING Form

AUTOMATIC RECONFIGURATION PLAN PROVISIONING Form (Continued)

Field Descriptions

The field values for the AUTOMATIC RECONFIGURATION PLAN are described in Table 18-2.

Table 18-2. Field Descriptions for the AUTOMATIC RECONFIGURATION PLAN Form

Field	Description
Action	Mandatory. Valid actions are: ■ <i>CREATE</i> - Applies to ARPs only. Creates an automatic reconfiguration plan (ARP), uniquely identified by an ARP ID. ■ <i>DESTROY</i> - Applies to ARPs only. Deletes the ARP. Once the <i>DESTROY</i> form has been filled in and executed, the ARP is no longer in the DND. ■ <i>INSERT</i> - Applies to ARP items only. Inserts an item into the ARP in the position indicated by the Sequence. If the position is already occupied, the DND places your item in front of the existing entry and adjusts the rest of the sequence numbers. If you specify a sequence number that is higher than any existing entries, the DND inserts the item at the end of the plan and assigns it the last number in the sequence. ■ <i>REMOVE</i> - Applies to items only. Removes an item from the ARP. The DND automatically renumbers all subsequent entries in the ARP. ■ <i>CHANGE</i> - Applies to items only. Changes the information in an item. An exception is the Sequence. It identifies the items in the ARP, and, therefore, cannot be changed directly. To change the position (Sequence) of an item in the plan, you must <i>REMOVE</i> the item and <i>INSERT</i> it where you want it to be.

Table 18-2. Field Descriptions for the AUTOMATIC RECONFIGURATION PLAN Form (Continued)

Field	Description
Action, Continued	■ <i>EXECUTE</i> - Applies to ARPs only. Sequentially executes the RPs in the plan specified by ARP ID. Once a provisioning command has been sent to the DACS specified by the RP's Site Name, the DND does not wait for a reply, but goes on to the next item. The replies, when they arrive, are logged. Upon completion, <i>EXECUTE</i> reports the number of items for which it sent commands, and the number that succeeded. The results of the most recent <i>CHECK</i>, <i>EXECUTE</i>, or <i>IDLE</i> overwrite the previous results in the results log for an ARP. ■ <i>IDLE</i> - Applies to ARPs only. Idles the plan specified by ARP ID. Idling consists of parsing each RP in the plan sequentially from last to first, and from last item to first item within a plan, and taking immediate action on each item as it is encountered. Upon completion, <i>IDLE</i> reports the number of items for which it sent commands and the number that succeeded. The results of the most recent <i>CHECK</i>, <i>EXECUTE</i>, or <i>IDLE</i> overwrite the previous results in the results log for an ARP. ■ <i>CHECK</i> - Applies to ARPs only. Checks the contents of each RP in the plan specified by ARP ID against the NPCs in the current DND database to determine which NPCs have been deleted from the database. If an item specifies a NPC that does not now exist, the item is internally marked null.

Table 18-2. Field Descriptions for the AUTOMATIC RECONFIGURATION PLAN Form (Continued)

Field	Description
Action, Continued	When <i>CHECK</i> completes, it displays the DND status message listing how many items can be successfully completed. To find out which items cannot complete and why, run the reconfiguration plan results report (see Chapter 14). Then correct the problems and perform <i>CHECK</i> again. <i>EXECUTE</i>, <i>IDLE</i> and <i>CHECK</i> keep a results log for each RP. The reconfiguration plan results report is taken from the log. One use of one of these Actions overwrites the data in the log from the previous use. ■ <i>CLEAN</i> - Applies to items only. Looks for every RP referenced in the ARP. If it does not find the RP in the appropriate DND frame database, <i>CLEAN</i> removes its reference from the ARP. If the ARP item is an <i>ALARM</i>, <i>CLEAN</i> determines whether the NPC is still provisioned. If it is not, <i>CLEAN</i> removes the <i>ALARM</i> from the list. ■ <i>ABORT</i> - Applies to ARPs only. Aborts all the RPs that were started by this ARP. Background RPs are started by <i>BOOT</i>, <i>IDLE</i>, <i>EXECUTE</i>, or <i>CHECK</i>. Once an <i>ABORT</i> is entered, the DND allows the current item to finish and stops.
ARP ID	Mandatory. Up to 12 characters. Identifies the automatic reconfiguration plan that is to be affected by the Action .
ARP Status	Inaccessible through this form. Indicates whether the specified item has been <i>EXECUTED</i> or is <i>IDLE</i> . <i>IDLE</i> means either never been executed or executed and subsequently made <i>IDLE</i> . This field appears only if List Type is <i>RP</i> .

Table 18-2. Field Descriptions for the AUTOMATIC RECONFIGURATION PLAN Form (Continued)

Field	Description
List Type	Specifies the type of item to which this Action applies: ■ <i>RP</i> - The item is an RP. ■ <i>ALARM</i> - The item is an NPC to be placed on or removed from the alarm list. If an NPC is on the list, a critical or major alarm from it will trigger the ARP.
Sequence	Up to five characters. Specifies the sequence number identifying the entry, in the plan, that is to be affected by the Action .
Site Name	Mandatory. 1-24 alphanumeric characters. Identifies the site to which the items of the RP specified in RP ID are to apply, provided the List Type is <i>RP</i> . If the List Type is <i>ALARM</i> , Site Name identifies the site where the NPC to be placed on the alarm list is located.
RP ID	Up to 12 characters. Identifies the RP that is to execute.
Number (Hier)	Appears only for a List Type of <i>ALARM</i> . The NPC number in hierarchical format of the NPC whose alarm will trigger the ARP.
(Ext)	Appears only for a List Type of <i>ALARM</i> . The previous NPC number, but in extended format.
NPC ID	Appears only for a List Type of <i>ALARM</i> . 1-41 characters. The NPC ID of the NPC whose alarm will trigger the ARP. The NPC must be in the database; for example, must have been created under NPC PROVISIONING.

NPC Roll

Description	The NPC Roll feature of DND enables you to transfer all circuit connections from one facility NPC to another.
NPC Types Supported	You can use the NPC Roll feature for NPC types: DE, TE, PB, PC, DA, PA, and TA.
Conditions	In order to use NPC Roll, the NPCs affected must meet these conditions: ■ Both NPCs must be present on the DACS and in the DND database. ■ Both NPCs can not be under test. ■ The Current NPC can not have channels assigned to a subrate circuit or a BCON circuit. ■ The Roll To NPC must be in-service (State: <i>IS</i>). ■ The channels on the Roll To NPC may not be assigned to circuits with a Circuit Status (Ckt Status) of <i>ACTIVE</i>, <i>ALTROUTED</i>, <i>PREEMPTED</i> or <i>DEROUTED</i>.
How NPC Roll Works	An NPC ROLL affects circuits that are <i>ACTIVE</i> or <i>ALTROUTED</i> . At the beginning of the roll, <i>ACTIVE</i> circuits are <i>DEACTIVATED</i> . <i>ALTROUTED</i> circuits are <i>DEROUTED</i> . If the NPC ROLL fails, the circuits remain deactivated or derouted. When an NPC Roll completes successfully, the circuits are returned to their original state.
DACS II NPC Roll	The DACS II NPC Roll command (<i>SW-ROLL-T1</i>) is not the same as the DND NPC Roll feature. DND does not process the echoed response of an NPC Roll using the DACS II command.

DND Forms: NPC ROLL Form

Sample Form

To transfer circuit connections from one NPC to another, from the DND Forms MAIN MENU, select PROVISIONING, then select NPC ROLL.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:'. Below this is a section titled 'NPC ROLL'. Inside this section, the 'Site Name' is set to 'DACSWest-X25'. Below the site name, there are four columns: 'Hier', 'Ext', 'NPC ID', and 'Type'. Under 'Current:', there are four empty input fields. Under 'Roll To:', there are four empty input fields. At the bottom of the form, there is a label 'Enter site name' followed by a text input field. Below the input field, the text 'snoopy: UI-01' is displayed. At the very bottom, there is a row of buttons: 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 18-4. NPC ROLL Form

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Background

Introduction

Test Access provides a capability to connect a test object to an object under test. An object under test is a circuit or an unmapped channel.

Objectives

This chapter provides background information to help you perform the following:

1. Create Test Port Groups and their Test Ports
 2. Place a circuit or unmapped channels in Monitor or Split test access modes
 3. Terminate or Unterminate a test group signal
 4. Release a circuit from Test Access
 5. Place a test group in Loop mode
 6. Place a test group in HUB mode
 7. Place a channel in CHLOOP mode.
-

Related tasks

For related tasks, see the following General Tasks:

DND GUI:

■ Performing Circuit Test Access in Monitor Mode	GT 19.1G
■ Performing Unmapped Test Access in Monitor Mode	GT 19.2G
■ Performing Test Access in Split Mode	GT 19.3G
■ Performing a HUB Test Access Connection	GT 19.4G
■ Terminating or Unterminating the Test Group Signal	GT 19.5G
■ Releasing a Test Access Connection	GT 19.6G
■ Looping a Test Group Signal	GT 19.7G
■ Looping a Channel or Circuit	GT 19.8G
■ Unlooping a Channel or Circuit	GT 19.9G
-

(Continued on next page)

Background (Continued)

Related tasks, Continued

DND Forms:

■ Creating a Test Port Group	GT 19.1U
■ Deleting a Test Port Group	GT 19.2U
■ Creating a Test Port	GT 19.3U
■ Deleting a Test Port	GT 19.4U
■ Performing Circuit Test Access in Monitor Mode	GT 19.5U
■ Performing Unmapped Test Access in Monitor Mode	GT 19.6U
■ Performing Test Access in Split Mode	GT 19.7U
■ Performing a HUB Test Access Connection	GT 19.8U
■ Terminating or Unterminating the Test Group Signal	GT 19.9U
■ Releasing a Test Access Connection	GT 19.10U
■ Looping a Test Group Signal	GT 19.11U
■ Looping a Channel or Circuit	GT 19.12U
■ Unlooping a Channel or Circuit	GT 19.13U

Related information

For related information see:

- *DACS II and DACS II ISX Operations and Maintenance Manuals*
-

Test Access

Types of Test Access

There are two types of Test access:

- **Test Port (TP)**—The object under test must be a circuit of bandwidth 1 or an unmapped channel. You must provision the test ports and the test port group through the TEST PORT PROVISIONING form on the DND Forms Interface, as discussed in this chapter.
 - **Test Group (TG)**—The object under test is a circuit of bandwidth $n \times DS0$, regardless of whether n is 1 or more than 1. You also may test unmapped channel(s) using a test group. Test groups can be created using the DND Forms Interface or DND GUI.
-

Prerequisites to Test Access

In either TP or TG access, you must have connected test equipment to one or more NPCs, which can then become either one or more test port groups or test group NPCs.

Test Ports and Test Port Groups

Test Port Groups

Create a Test Port Group using the DND Forms Interface before creating its Test Ports.

DACS II releases 6.0 and higher allow eight possible test port groups, numbered 1 through 8. Test port groups do not have to be created in numerical order. Within each test group are 12 test ports, which must be created in ascending numerical order.

Table 19-1 summarizes, by DACS release, the number of test port groups supported.

Table 19-1. Test Port Groups Supported, By Frame

Frame Type	No. of TP Groups	No. of TPs
DACS II before Release 6.0	4	1-48
DACS II Release 6.0 and higher	8	1-96
DACS II ISX Release 1.0 and higher	8	1-96

Test Ports

Once a Test Port Group is created, its test ports 1 through 12 can be created. Within a Test Port Group, Test Ports must be created in order and deleted in reverse order.

One test port consists of two channels, designated in the DACS manuals as channel A, or the lower- or odd-numbered channel, and channel B, or the higher- or even-numbered channel. Thus, if a hypothetical NAS NPC, JJ36N24, is designated as a test port digroup through test port provisioning, it makes available 24 test channels configured as 12 test ports: channel 1 is port 1, channel A; channel 2 is port 1, channel B; etc. The uses of these channels are explained later in this chapter.

Test port provisioning is not available to the DACScan™-2000 Controller C-Module.

Circuits Not Supported

Test Port access is not supported for BCON circuits.

DND Forms: TEST PORT PROVISIONING Form

Sample Form - Create Test Port Group

To obtain the TEST PORT PROVISIONING form, select TEST PORT from the PROVISIONING menu. A sample of the TEST PORT PROVISIONING form with the *CREATETPG* Action is shown in Figure 19-1.

The screenshot displays a window titled "DND USER INTERFACE". Inside, the "Status:" field is empty, and the "Alarms:" field lists three items: "A-ISX-01-NJ-Manalapan", "A-ISX-02-ND-Bismarck", and "A-ISX-03-WA-Olympia". Below these, the "TEST PORT PROVISIONING" section is active. It contains the following fields: "Site Name:" with the value "A-CEF-01-NJ-Manalapan", "Action:" with the value "CREATETPG", "Test Port Group:" with a red square icon, "NPC Number (Hier):" and "(Ext):" both empty, and "NPC ID:" empty. At the bottom of the form, there is a prompt: "Enter desired Test Port Group (1 to 4, or 1 to 8, See HELP)". Below this prompt, the text "jessica: UI-01" is visible. The bottom of the window features a row of buttons: "HELP", "QUIT", "RECNCILE", "TOP MENU", "PRINT", and "EXECUTE".

Figure 19-1. DND Forms: TEST PORT PROVISIONING Form - *CREATETPG* Action

DND Forms: TEST PORT PROVISIONING Form (Continued)

Sample Form - Create Test Port

A sample of the TEST PORT PROVISIONING form with the *CREATETP* Action is shown in Figure 19-2.

The screenshot displays a terminal window titled "DND USER INTERFACE". At the top, it shows "Status:" and "Alarms:" with three active alarms: "A-ISX-01-NJ-Manalapan", "A-ISX-02-ND-Bismarck", and "A-ISX-03-WA-Olympia". Below these, the title "TEST PORT PROVISIONING" is centered. The form contains the following fields and actions:

- Site Name:** A-CEF-01-NJ-Manalapan
- Action:** CREATETP
- Test Port No:** 1 (indicated by a red cursor)
- TC:** _____
- IW:** _____

At the bottom of the form area, a prompt reads: "Enter the desired Test Port Number (1 to 96)". Below this, the user identifier "jessica: UI-01" is displayed. The bottom of the window features a row of command buttons: "HELP", "QUIT", "RECNCILE", "TOP MENU", "PRINT", and "EXECUTE".

**Figure 19-2. DND Forms: TEST PORT PROVISIONING Form -
CREATETP Action**

TEST PORT PROVISIONING Form (Continued)

Field Descriptions The field values for the TEST PORT PROVISIONING form are described in Table 19-2.

Table 19-2. DND Forms: Field Descriptions for the TEST PORT PROVISIONING Form

Field	Descriptions
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5 for more details.
Action	Mandatory. The provisioning actions are: ■ CREATE TP DIGROUP (<i>CREATETPG</i>) designates a previously provisioned NPC as a test-port digroup. ■ DELETE TP DIGROUP (<i>DELETETPG</i>) removes the designation (and all associated test ports). ■ CREATE TEST PORT (<i>CREATETP</i>) designates a channel pair as a test port within a test port digroup. ■ DELETE TEST PORT (<i>DELETETP</i>) removes the designation.
Test Port Group	This field appears only for Actions of <i>CREATETPG</i> and <i>DELETETPG</i> . With DACS II releases prior to 6.0, the possible values are 1-4. With DACS II Release 6.0, the possible values are 1 through 8. Clear DS1/E1 NPCs are excluded.
Test Port No.	This field appears only for Actions of <i>CREATETP</i> and <i>DELETETP</i> . The number of the test port within the NPC. The test port groups contain the following test ports. TPG1: 1-12 TPG2: 13-24 TPG3: 25-36 TPG4: 37-48 TPG5: 49-60 TPG6: 61-72 TPG7: 73-84 TPG8: 85-96

Table 19-2. DND Forms: Field Descriptions for the TEST PORT PROVISIONING Form (Continued)

Field	Descriptions
TC	This field is shown only for an Action of <i>CREATETP</i>. The test port trunk conditioning. The values are: ■ <i>value</i> - This value is described in the Field Descriptions tables in Chapter 9, Circuit Provisioning. If entered, it applies to all channels put under test on this test port; for example, the TP conditioning is static. ■ <i>none</i> - The conditioning changes to match the circuit under test; for example, the TP conditioning is dynamic.
IW	This field appears for an Action of <i>CREATETP</i>. The value of IW depends on the value of TC. You can not enter an IW when you have not entered a TC. In that case, the IW is dynamic. If you have entered a TC, whether you enter a value for IW or not, the IW is static. For DACS II, the static/dynamic designation has meaning only for access to unmapped terminations. For access to a mapped circuit, trunk conditioning is always adopted from the circuit under test.
NPC Number (Hier)	This field appears only for an Action of <i>CREATETPG</i>. The NPC number in hierarchical format of the NPC to be designated as a test port group. It must already have been equipped, but it does not have to be in service. Alternatively, you can enter the number in extended format, or the NPC ID. Not every type of NPC can be grown as a TP Digroup. Specifically not supported are Types MJ and SR, subrate, MB, multipoint, and DE/TE, clear DS1/E1.
(Ext)	The NPC number in extended format.
NPC ID	The NPC ID of the NPC to be designated as a test port group.

Test Groups

Description

A test group is the object used to test the circuit (Test Object). In Test Group (TG) access, you must have connected test equipment to one or more NPCs.

You identify the NPCs to be used by the test group and supply the number of the first channel to be used in each NPC. The DND checks the bandwidth of the object under test, provisions the specified NPC(s) as a single test group, and connects the appropriate number of channels to the object under test. When you *RELEASE* the test group, the DND deletes it.



CAUTION:

*Some of these Test Access **Actions** can affect traffic in the DACS network. Consult the DACS II and DACS II ISX Operations and Maintenance Manuals to determine which actions are service-affecting.*

Test Group Constraints

The constraints on TG access are as follows:

- Deletion of the test group after use is automatic; however, if the access is interrupted by a failure, the TG might remain provisioned.
 - The test group is created with bandwidth equal to the bandwidth of the object under test.
-

Circuits Not Supported

Test access does not support the following circuits:

- Clear DS1/E1
 - A node in a real or virtual multipoint circuit. However, the EFTs can be tested.
 - Subrate
-

Note on Diagrams

The logical diagrams shown in the following sections apply to two-way circuits. You can derive the equivalent diagrams for one-way circuits by eliminating the second direction (Rx to Tx) and all the connections to it. They are drawn from an internal point of view. An Rx from an external point of view; for example, a receiving point for line transmission, becomes the Tx for cross-connection within the DACS.

Monitor Test Access

Mapped Test Access

The most common type of access is *MONITOR*. It allows test equipment to “listen” to an existing circuit without interrupting transmission on the circuit. Signals from the FROM and the TO sides are communicated along their intended route, but are also received at the test object.



NOTE:

Figure 19-3, Figure 19-4, Figure 19-5 presume a bandwidth of 1. For their $N \times 64$ kbps equivalents, imagine that each channel and its connection becomes n channels and connections.

Mapped Monitor Mode Diagram

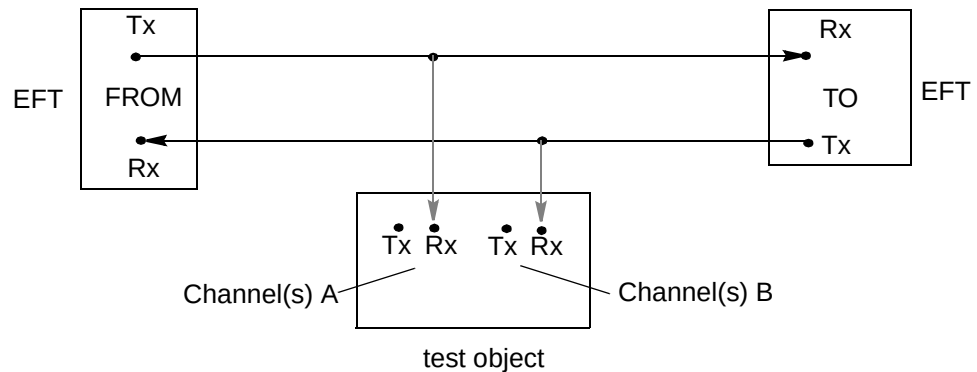


Figure 19-3. Illustration Of Mapped Monitor Test Access

In Figure 19-4, the normal circuit, which is in this case duplex, sends data from the FROM side Tx to the TO side Rx, and from the TO side Tx to the FROM side Rx.

A test connection in *MONITOR Status* joins Channel(s) A and Channel(s) B Rx of the test object to the circuit connection. Normal transmission on the circuit is received at both the TO side Rx and a test object Rx, and at both the FROM side Rx and a test object Rx. If the circuit were half-duplex, only the TO side Rx and the test object Rx would receive.

Monitor Test Access (Continued)

Unmapped Test Access

Unmapped test access allows test equipment to “listen” to traffic from a channel or range of channels without interrupting channel transmission.

**NOTE:**

For their $N \times 64$ kbps equivalents, imagine that each channel and its connection becomes n channels and connections

Unmapped Monitor Mode Diagram

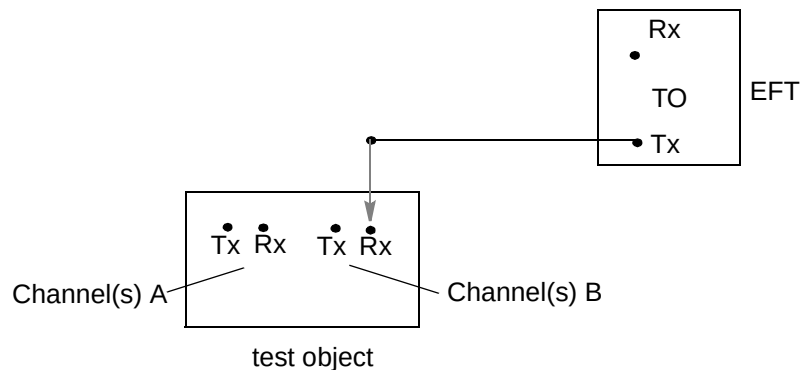


Figure 19-4. Illustration Of Unmapped Monitor Test Access

In Figure 19-4, the unmapped channel sends data from the TO side Tx to the Test Object.

Only the TO side of the Test Object is used for unmapped Test Access. Therefore, the FROM side of the Test Object is left empty in the report form for DND Forms. The FROM side does not appear in report form for DND GUI.

Monitor Test Access (Continued)

Insertion Word

If you have not entered an **Insertion Word/IW** in either the NPC or circuit provisioning forms, the DACS uses its own default; typically, the UMC. An **Insertion Word/IW** entered in NPC provisioning takes precedence over the DACS default, and an **Insertion Word/IW** entered in circuit provisioning takes precedence over either of those.

Terminate in TO Direction

If *TERMINATE* is applied to the TO side, the TO Rx receives only the **Insertion Word/IW** signal; for example, traffic is replaced by an **Insertion Word/IW** on that side. However, the test object Rx continues to monitor normal traffic on that side.

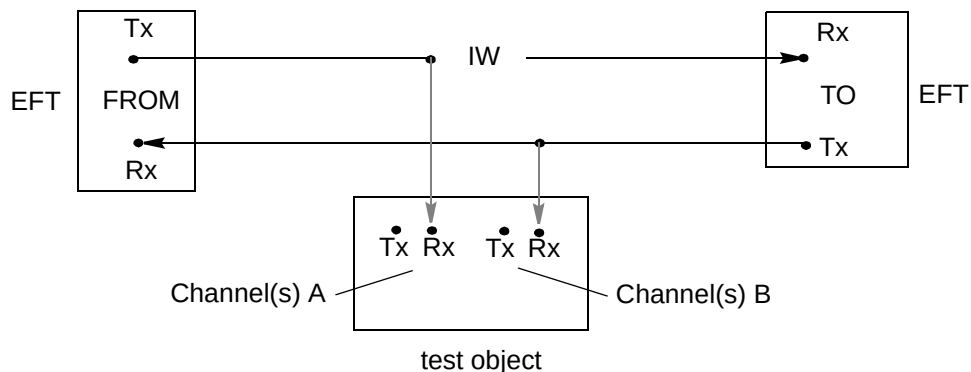


Figure 19-5. Illustration Of Monitor Test Access, TLA Applied in T Direction

Monitor Test Access (Continued)

Terminate in FROM Direction

The same may be said of FROM side TLA.

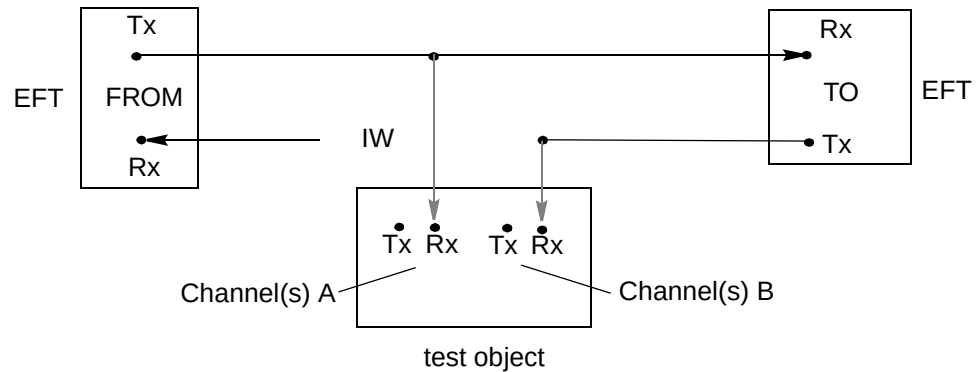


Figure 19-6. Illustration Of Monitor Test Access, TLA Applied in F Direction

Terminate in BOTH Directions

If TLA is applied to both sides, then no normal traffic is received over the circuit being tested, but the traffic is received at the test object.

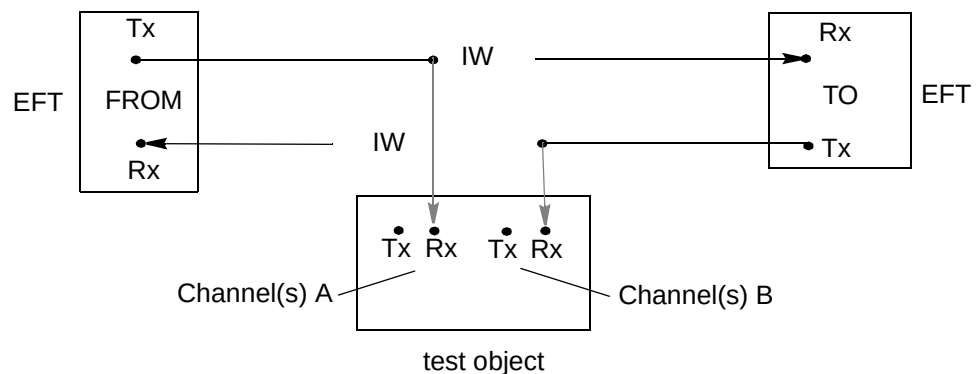


Figure 19-7. Illustration Of Monitor Test Access, TLA Applied in B(oth) Directions

Split Test Access

Description

In *SPLIT* access, transmission through the object under test is broken and the test signal is inserted at the break.

Split Mode Diagram

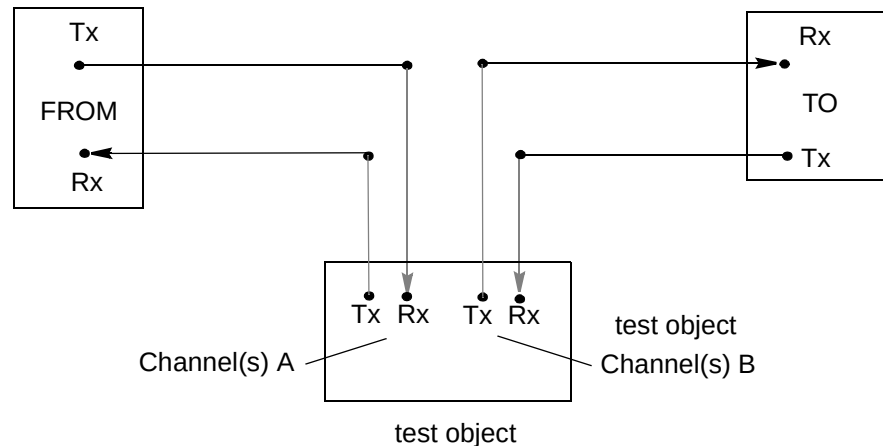


Figure 19-8. Illustration Of Split Test Access

The connection is completed through Channel(s) A by connecting Channel(s) A Tx to the FROM side Rx, and through Channel(s) B by connecting Channel(s) B Tx to the TO side Rx. Moreover, transmission from FROM Tx to TO Rx and from TO Tx to FROM Rx are broken. Although the old circuit still nominally exists, the TO side and the FROM side are both connected to the test object. The TO and FROM sides can transmit to each other only if the test object passes on the transmission externally to the DACS.

The test object both sends and receives. User test equipment can send signals to both the FROM and the TO sides of the object under test simultaneously and independently, simulating the old circuit if such simulation is desired.

Split Test Access (Continued)

Termination in TO Direction

If TLA is applied to the TO side, the traffic from the channel(s) B Tx to the TO side Rx is replaced with the **Insertion Word**.

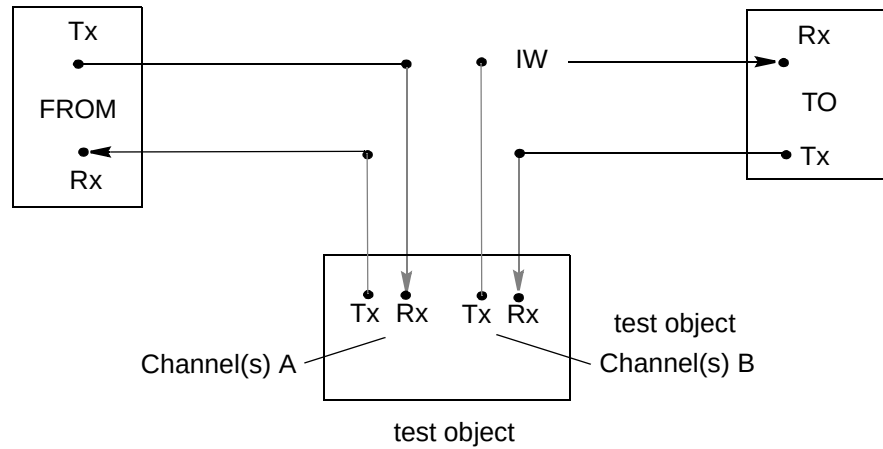


Figure 19-9. Illustration Of Split Test Access, TLA Applied in T Direction

Split Test Access (Continued)

Termination in FROM Direction

If TLA is applied to the FROM side of a circuit being tested in *SPLIT Status*, the return traffic from Channel(s) A Tx to the FROM side Rx is replaced by the **Insertion Word**.

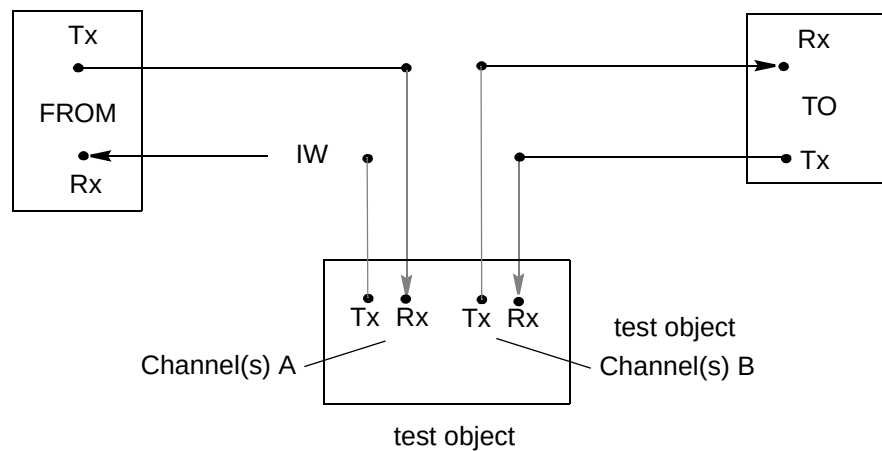


Figure 19-10. Illustration Of Split Test Access, TLA Applied in F Direction

Split Test Access (Continued)

Termination in BOTH Directions

If TLA is applied to both sides, there is still traffic from the FROM side Tx to Channel(s) A and from the TO side Tx to Channel(s) B.

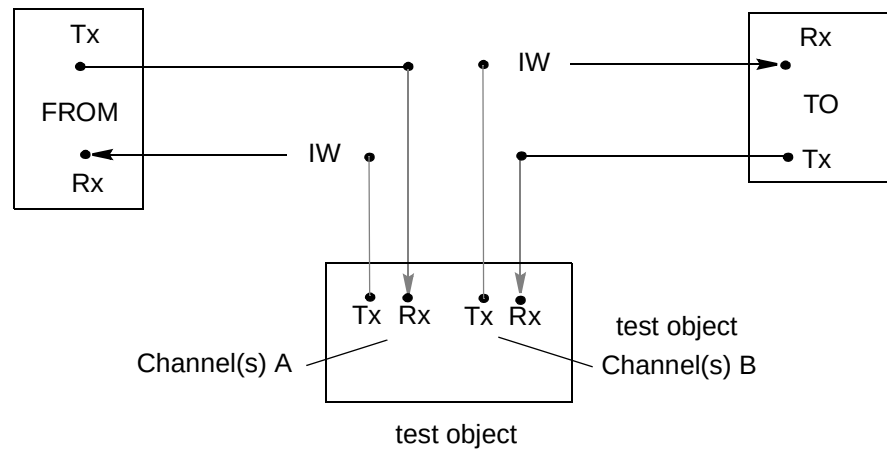


Figure 19-11. Illustration of Split Test Access, TLA Applied in B(oth) Directions

HUB Test Access

Description

The *HUB Action* provides a two-way cross-connection between some test object channels and other channels. With this capability, a remote test system in a HUB office can have test access to a DACS located in other offices via the HUB DACS. The *HUB Action* is, in fact, a way of displacing test objects to remote DACSs.

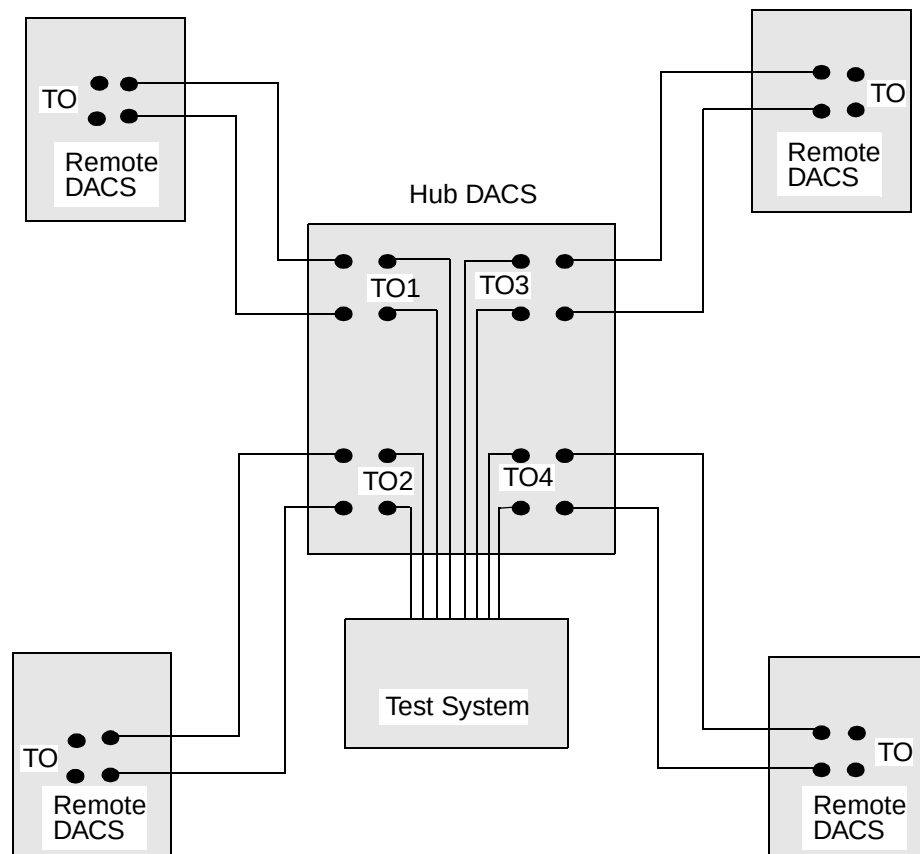


Figure 19-12. Illustration Of HUB Test Access

HUB Test Access (Continued)

HUB DACS

In Figure 19-12, channels for Test Objects 1 through 4 at the HUB DACS have been connected to a monitoring test system. In the HUB DACS, these channels have been provisioned as test objects and then have been cross-connected with a *HUB Action* to other EFTs, which lead to remote DACS.

Remote DACS

At a remote DACS, the far ends have been provisioned as test objects and may now be cross-connected to objects under test with a *MONITOR Action*. The monitoring is displaced to the test equipment at the HUB.

The LOOP Action

Description

The *LOOP Action* cross-connects a test object to itself. The test system can monitor and test the health of the test object. The channels of the test object are looped to themselves. The NPC and channels are test objects only for the duration of the loop and the test object cannot be used for a *MONITOR* or *SPLIT* while in the *LOOP* state.

The CHLOOP Action

Description

The **CHLOOP Action** loops DS0 channels for remote testing purposes. There are two ways to specify the DS0 channels to be looped:

- By NPC number and channel. The channel may be either unmapped or mapped in a two-point circuit. If the channel is mapped the **CHLOOP Action** will first take down the circuits in order to free the channel. The channel will then be looped back onto itself with a DACS one-way cross-connect command.
- By circuit ID. The **CHLOOP Action** will loop back both ends of the circuit by taking down the circuit at the DACS and looping back both ends of the circuit.

Restrictions

Only full-duplex circuits in the active state can be put in a CHLOOP state. The circuit must also be bandwidth 1, or a contiguous circuit with bandwidth greater than 1. High rate alternating circuits and random circuits cannot be put in a CHLOOP state.

The CHLOOP feature is an internal DND feature and not a DACS II feature. Circuits and channels in the CHLOOP state will be displayed as TG 999 in all Test Access Report reports and strings displayed to the user. The Test Access report displays channels that are under CHLOOP either directly or indirectly because their circuit is under CHLOOP. To find out what circuits are under CHLOOP, run a Channel Report for the channels that are under CHLOOP to see if they are in circuits.

The CHLOOP Action (Continued)

Audit/ Synchronization

The Database Audit feature will properly audit all circuits and channels in the CHLOOP state and report any discrepancies. Single channel interactive audit does not support CHLOOP. Database Synchronization is not available for circuits and channels in a CHLOOP state. Since CHLOOP is a DND feature and not a DACS II feature, some anomalies may occur. If a channel is put in a CHLOOP state in DACS ONLY mode, and a Frame Master SYNC is executed, the channel will appear to the DND as a one-way circuit. The DND will not know that the channel should be in a CHLOOP state, instead of a one-way circuit in the DND database.

**NOTE:**

The original circuit remains in the DACS II database even though the actual circuit has been taken down. The circuit will still show an ACTIVE status in the Circuit Provisioning Form and in the Circuit and Channel reports. However, all attempts to delete the circuit will be denied.

Figure 19-13 illustrates the result of a CHLOOP Action on a channel.

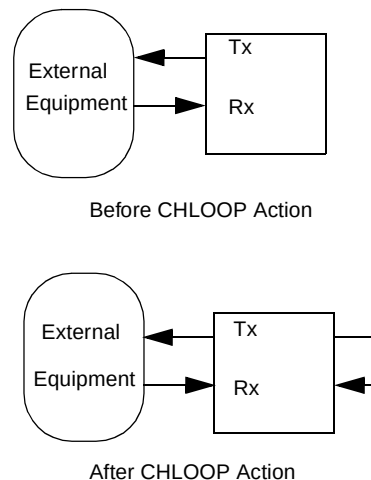


Figure 19-13. Illustration of CHLOOP Action on a Channel

The CHLOOP Action (Continued)

Figure 19-14 illustrates the result of a CHLOOP Action on a channel.

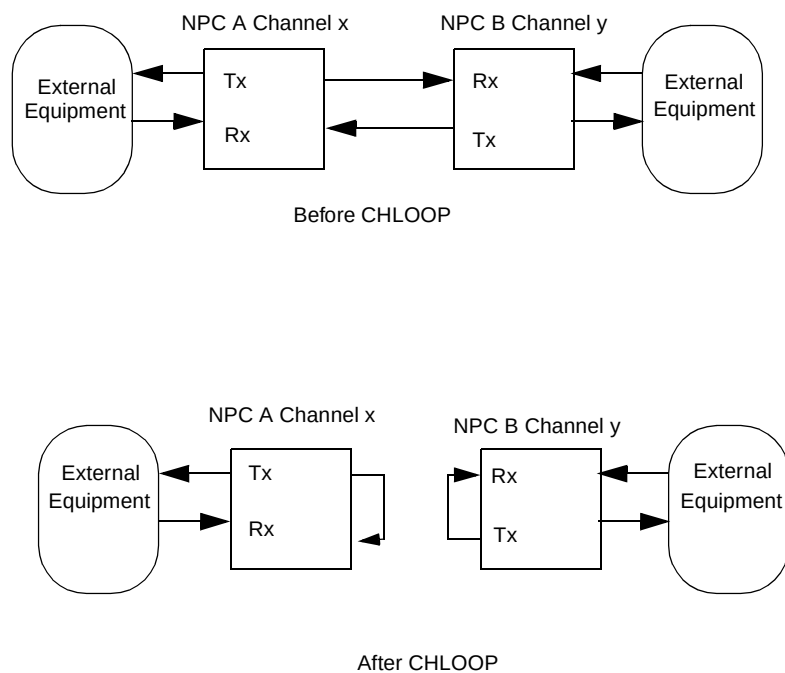


Figure 19-14. Illustration of the CHLOOP Action on a Circuit

The CHUNLOOP Action

Description

The CHUNLOOP action will reverse the action done by CHLOOP.

- By NPC number and channel. The CHUNLOOP **Action** will first disconnect the loop circuit. If the channel was originally mapped and a circuit was taken down by the *CHLOOP Action*, the original circuit will be put back.
 - By circuit ID. The *CHUNLOOP Action* will disconnect both looped circuits and reactivate the original circuit.
-

DND GUI: Test Access Form

Sample Form

Figure 19-15 provides an example of a completed TEST ACCESS form.

TEST ACCESS

Site Name: Brazil-CEF Action: MONITOR

TEST OBJECT

Object Type: TG Initial Test State: IDLE

Trunk Conditioning: Insertion Word:

FROM NPC

ID: NPC1 NPC Type: PB100 Hier: 01101 Extd: 0001

TO NPC

ID: NPC2 NPC Type: PB100 Hier: 01102 Extd: 0002

Bandwidth: 1

FROM Channel: 01 TO Channel: 02

OBJECT UNDER TEST

TO NPC

ID: NPC3 NPC Type: PB100 Hier: 01103 Extd: 0003

TO Channel: 03

Control Options

Reconcile

Mode: ☒ DND and DACS ☐ DND only ☐ DACs only

Back Continue Restart Close

? Special execution modes to reconcile DB:

Unsigned Java Applet Window

NPC and Channel information for the TEST OBJECT

NPC and Channel information for the OBJECT UNDER TEST

Object Type is always TG

TEST OBJECT's Initial Test State

Figure 19-15. DND GUI: TEST ACCESS Form, *MONITOR* Mode

DND GUI: The TEST ACCESS Form (Continued)

Field Descriptions The field descriptions for the TEST ACCESS form are listed in Table 19-3:

Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form

Field	Description
Site Name	(Combo box) Mandatory. Select the name of the DACS where the requested Action will take place. Clicking this field will display a list of DACS names. By default, the list appears alphabetically. To change the sorting order, modify the setting for the SORT_NAME_BY variable using the DND Forms Interface.
Action	(Combo box) Mandatory. Specifies the TEST ACCESS operation. The valid actions are: ■ <i>MONITOR</i> - Connects an object under test, and any <i>ACTIVE</i> or <i>ALTROUTED</i> circuit/channel(s) containing the object under test, to a test object. The test object will receive data from the object under test without disrupting traffic. The Test State field must be <i>RELEASE</i> or <i>SPLIT</i>. ■ <i>SPLIT</i> - Connects both transmit and receive FROM and TO sides of an existing two-way circuit/unmapped channel(s) to the test object. The FROM and TO sides can then be tested simultaneously and independently. ■ <i>HUB</i> - Connects a test object in such a way that the local DACS is used as a test access concentrator, with the local test object connected to a remote test object on another DACS.

Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form (Continued)

Field	Description
Action , Continued	■ <i>TERMINATE</i> - For a test object testing in the <i>MONITOR</i> or <i>SPLIT</i> mode, replaces the normal signal with the Insertion Word signal. The Direction field appears and you must enter a direction, when the Action is <i>TERMINATE</i> or <i>UNTERMINATE</i>. The extent of the replacement depends on the direction selected. You can select a replacement of the signal in the <i>TO</i> direction of the object under test, in the <i>FROM</i> direction or in <i>BOTH</i> directions for a two-way circuit. See also under the Direction field. ■ <i>UNTERMINATE</i> - Resumes the normal signal(s) when a <i>TERMINATE</i> has been in effect. As in the case of <i>TERMINATE</i>, the part of the circuit to be affected is specified by the Direction field. ■ <i>RELEASE</i> - is connects a test object from an object under test and makes the test object available for reuse. With the <i>OOS</i> option, the test object may be released even if it is out of service. ■ <i>LOOP</i> - Loops channels of a test object so that they can be tested. ■ <i>CHLOOP</i> - Loops DS0 channels for remote testing purposes. ■ <i>UNCHOOP</i> - Unloops a DS0 channel that previously has been looped for remote testing purposes.

**Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form
(Continued)**

Field	Description
Direction	(Radio buttons) The circuit ends for which Insertion Word is to be substituted for the normal signal when the <i>TERMINATE Action</i> is requested, or the circuit ends for which normal transmission is to resume when the <i>UNTERMINATE Action</i> is requested. This field only appears when you request a <i>TERMINATE</i> or <i>UNTERMINATE Action</i>. The choices are: ■ <i>FROM</i> - Replace the signal to the FROM channel with Insertion Word. ■ <i>TO</i> - Replace the signal to the TO channel with Insertion Word. ■ <i>BOTH</i> - Replace the signals to the FROM and TO channels with Insertion Word.
OOS	(Check box) Appears for the <i>RELEASE Action</i> only. The values are: ■ <i>Selected</i> - DACS to allow the release request to succeed when the test group or an NPC of the object under test is out of service. ■ <i>Unselected</i> - Default. Allows DACS to deny the release request if the NPC is out of service.
Test Specifier	(Radio buttons) Not mandatory. Check and specify either a Circuit ID or Test Group Number. If the ACTION is <i>MONITOR</i> and the Test Specifier is left blank, then you will test an unmapped channel.

Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form (Continued)

Field	Description
Initial Test State	(Read-only field) A display-only field indicating the operating status of the test object connections, as follows: ■ <i>IDLE</i> - Displayed when the test object is not in use. ■ <i>MONITOR</i> - Displayed when <i>MONITOR</i> access is in effect. ■ <i>SPLIT</i> - Displayed when <i>SPLIT</i> access is in effect. ■ <i>HUB</i> - Displayed when <i>HUB</i> access is in effect. ■ <i>LOOP</i> - Displayed when <i>LOOP</i> access is in effect. ■ <i>CHLOOP</i> - Displayed when <i>CHLOOP</i> access is in effect. The Initial Test State field reflects the last successful Action.
Object Type	The type of test object. The valid types of objects are: ■ <i>TG</i> - The object is a test group, which will be automatically provisioned as required for test access.
Number	(Text field) The number of the test object to be used for performing tests. The DND selects the number by default; however, you may enter a test group number. If the test group was provisioned, the fields corresponding to this number test group are filled in. ■ <i>Test Group</i> - DACS II Releases prior to 6.0 and DACS II ISX prior to 1.1 do not support this feature. The range is 1 through 400 with DACS II Generic 6.0 and later, and 1 through 100 for DACS II ISX.

**Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form
(Continued)**

Field	Description
Bandwidth	(Combo box) The bandwidth of the test object. ■ <i>Test Group</i> - If the object under test is an unmapped circuit, enter the desired bandwidth. For valid bandwidths, refer to the Bandwidth field in the Field Description tables in Chapter 9, Circuit Provisioning. ■ <i>Mapped Channels</i> - If the object under test is a mapped circuit, the Bandwidth will be filled in automatically.
Trunk Conditioning	(Text field) Enter the Trunk Conditioning Code for the <i>LOOP</i> or <i>MONITOR Actions</i> of a new Test Group. For valid Trunk Conditioning codes, refer to the Trunk Conditioning field in the Field Description tables in Chapter 9, Circuit Provisioning.
Insertion Word	(Text field) This field complements Trunk Conditioning . For valid codes, refer to the Insertion Word field in the Field Description tables in Chapter 9, Circuit Provisioning.

**Table 19-3. DND GUI: Field Descriptions for the TEST ACCESS Form
(Continued)**

Field	Description
(Test Object and Object Under Test FROM/TO) NPC Specifier/NPC	(Radio buttons and text field) Mandatory. Fields for specifying the NPCs of the Test Object and Object Under Test. The three choices for entering NPC data are: ■ <i>ID</i> - If selected, Enter the NPC name in the NPC: field. (For OBJECT UNDER TEST mapped channels, this is a read-only field.) ■ <i>Hier</i> - If selected, enter the NPC's hierarchical number in the NPC: field ■ <i>Extd</i> - If selected, enter the NPC's extended number in the NPC: field.
(Test Object and Object Under Test FROM/TO) Channel	(Test field) 2 numeric digits. Enter the first channel to be used as the FROM side and TO side. For mapped test access, the OBJECT UNDER TEST Channel fields are read-only. The TEST OBJECT Channel fields will always be <i>Contiguous</i>.
New Test State	(Read-only field) A display-only field indicating the new operating status of the test object connections, as follows: ■ <i>IDLE</i> - Displayed when the test object is not in use. ■ <i>MONITOR</i> - Displayed when <i>MONITOR</i> access is in effect. ■ <i>SPLIT</i> - Displayed when <i>SPLIT</i> access is in effect. ■ <i>HUB</i> - Displayed when <i>HUB</i> access is in effect. ■ <i>LOOP</i> - Displayed when <i>LOOP</i> access is in effect. ■ <i>CHLOOP</i> - Displayed when <i>CHLOOP</i> access is in effect.

DND Forms: The TEST ACCESS Form

Sample Form

Select TEST ACCESS from the MAIN MENU. The TEST ACCESS form is displayed. A sample TEST ACCESS form is shown in Figure 19-16.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:' with three active alarms: 'A-ISX-01-NJ-Manalapan', 'A-ISX-02-ND-Bismarck', and 'A-ISX-03-WA-Olympia'. The main section is titled 'TEST ACCESS'. It contains the following fields and data:

- Site Name: A-CEF-01-NJ-Manalapan
- Action: MONITOR
- Test State: _____
- Test Object
 - Object Type: IG Number: _____ Bandwidth: 03 TC: 0011.0011 IW: IRB
 - Hier Ext NPC ID Ch
 - FROM: 02202 0202 02202NPC001 015
 - TO: 02202 0202 02202NPC001 018
- Object Under Test
 - Ckt Id: ckt1-tester
 - Hier Ext NPC ID Ch
 - FROM: 02201 0201 02201NPC001 11
 - TO: 02205 0205 02205NPC001 11

Below the form, there is a prompt: 'Enter the NPC Number (Hierarchical Format.)' followed by the text 'jessica: UI-01'. At the bottom, there is a row of buttons: 'HELP', 'QUIT', 'RECNCILE', 'TOP MENU', 'PRINT', and 'EXECUTE'.

Figure 19-16. DND Forms: TEST ACCESS Form

DND Forms: The TEST ACCESS Form (Continued)

Field Descriptions The field descriptions for the TEST ACCESS form are described in Table 19-4.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5 for more details.
Action	■ Mandatory. Specifies the TEST ACCESS operation. The valid actions are: ■ <i>MONITOR</i> - Connects an object under test, and any <i>ACTIVE</i> or <i>ALTROUTED</i> circuit containing the object under test, to a test object. The test object will receive data from the object under test without disrupting traffic. The Test State field must be <i>RELEASED</i> or <i>SPLIT</i>. ■ <i>SPLIT</i> - Connects both transmit and receive FROM and TO sides of an existing two-way circuit to the test object. The FROM and TO sides can then be tested simultaneously and independently. ■ <i>HUB</i> - Connects a circuit to a test object in such a way that the local DACS is used as a test access concentrator, with the local test object connected to a remote test object on another DACS.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions (Continued)

Field	Description
Action (Continued)	■ <i>TERMINATE</i> - For a test object testing a circuit in the <i>MONITOR</i> or <i>SPLIT</i> mode, replaces the normal signal with the IW signal. The Direction field appears and you must enter a direction, when the Action is <i>TERMINATE</i> or <i>UNTERMINATE</i>. The extent of the replacement depends on the direction selected. You can select a replacement of the signal in the TO direction of the object under test, in the FROM direction or in BOTH directions for a two-way circuit or on all branch LEGS toward facilities for a multipoint circuit. See also under the Direction field. ■ <i>UNTERMINATE</i> - Resumes the normal signal(s) when a <i>TERMINATE</i> has been in effect. As in the case of <i>TERMINATE</i>, the part of the circuit to be affected is specified by the Direction field. ■ <i>RELEASE</i> - Disconnects a test object from an object under test and makes the test object available for reuse. With the OOS option, the test object may be released even if it is out of service. ■ <i>LOOP</i> - Loops channels of a test object so that they can be tested. ■ <i>CHLOOP</i> - Loops DS0 channels for remote testing purposes. ■ <i>CHUNOOP</i> - Unloops a DS0 channel that previously has been looped for remote testing purposes.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions (Continued)

Field	Description
Direction	The circuit ends for which IW is to be substituted for the normal signal when the TERMINATE Action is requested, or the circuit ends for which normal transmission is to resume when the UNTERMINATE Action is requested. This field only appears when you request a TERMINATE or UNTERMINATE Action. The choices are: ■ <i>F</i> - Replace the signal to the FROM channel with IW. ■ <i>T</i> - Replace the signal to the TO channel with IW. ■ <i>B</i> - Replace the signals to the FROM and TO channels with IW. ■ <i>L</i> - Replace the signals on all branch LEGS toward facilities for a multipoint circuit with IW.
OOS	This field appears for the RELEASE Action only. The values are: ■ <i>Y</i> - Requests DACS to allow the release request to succeed when the test group or test port group NPC or an NPC of the object under test is out of service. ■ <i>N</i> - Default. Allows DACS to deny the release request if the NPC is out of service.
Test State	A display-only field indicating the operating status of the test object connections, as follows: ■ <i>RELEASED</i> - is displayed when the test object is not in use. ■ <i>MONITOR</i> - is displayed when <i>MONITOR</i> access is in effect. ■ <i>SPLIT</i> - is displayed when <i>SPLIT</i> access is in effect. ■ <i>HUB</i> - is displayed when <i>HUB</i> access is in effect. ■ <i>LOOP</i> - is displayed when <i>LOOP</i> access is in effect. ■ <i>CHLOOP</i> - is displayed when <i>CHLOOP</i> access is in effect. The Test State field reflects the last successful Action.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions (Continued)

Field	Description
Object Type	The type of test object. The valid types of objects are: ■ <i>TP</i> - The object is a test port, and therefore user test port provisioning is required. ■ <i>TG</i> - The object is a test group, which will be automatically provisioned as required for test access.
Number	The number of the test object to be used for performing tests. If Object Type is <i>TP</i>, enter the test port number. If Object Type is <i>TG</i>, the DND selects the number by default; however, you may enter a test group number. If the test group was provisioned, the fields corresponding to this number test group are filled in. ■ <i>Test Port</i> - The range is 1 through 48 with DACS II generics prior to 6.0 and 1 through 96 with DACS II Generic 6.0 and later and DACS II ISX. ■ <i>Test Group</i> - DACS II generics prior to 6.0 and DACS II ISX prior to 1.1 do not support this feature. The range is 1 through 400 with DACS II Generic 6.0 and later, and 1 through 100 for DACS II ISX.
Bandwidth	The bandwidth of the test object. Values are as follows. ■ <i>Test Port</i> - Only a value of 1 is allowed. The default is 1. ■ <i>Test Group</i> - If the object under test is a mapped circuit, enter nothing. Regardless of what you enter, the bandwidth will be taken from the object under test. If the object under test is an unmapped circuit, enter the desired bandwidth. For valid bandwidths, refer to the Bandwidth field in the Field Description tables in Chapter 9, Circuit Provisioning.
TC	This field appears for the <i>LOOP</i>, <i>MONITOR</i>, <i>SPLIT</i> and <i>HUB Actions</i> only. Enter the Trunk Conditioning Code that is to apply to the test connection. For valid TC codes, refer to the TC field in the Field Description tables in Chapter 9, Circuit Provisioning.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions (Continued)

Field	Description
IW	This field complements TC . For valid IW codes, refer to the IW field in the Field Description tables in Chapter 9, Circuit Provisioning.
AtoMU	This field appears for the <i>MONITOR</i> , <i>SPLIT</i> and <i>HUB</i> Actions for Test Port test access only. The values are: ■ <i>Y</i> - Specifies A-law to Mu-law (also called x-law) conversion on a CEPT-type NPC in a Gateway type of test connection; this conversion can apply to the signal coming from either the object under test or from the test object itself. ■ <i>N</i> - Default. Disables the A-law to Mu-law conversion.
Test Object FROM Hier	This and the following three fields are the identifying information of the test object. Their values depend on the test object. ■ <i>Test Port</i> - Filled in automatically. A blank value means you have not provisioned the test port. ■ <i>Test Group</i> - The hierarchical NPC number of the NPC to be used as the FROM side of the test object. Alternatively, you may enter the extended number or the NPC ID. Whichever you enter, the other two fields are filled in. The NPCs must be in service.
Test Object FROM Ext	The value depends on the test object type. ■ <i>Test Port</i> - Filled in automatically. ■ <i>Test Group</i> - The extended NPC number of the NPC to be used as the FROM side of the test object.
Test Object FROM NPC ID	The value depends on the test object type. ■ <i>Test Port</i> - Filled in automatically. ■ <i>Test Group</i> - The ID of the NPC to be used as the FROM side of the test object.

Table 19-4. DND Forms: TEST ACCESS Form Field Descriptions (Continued)

Field	Description
Test Object FROM Ch	The value depends on the test object type. ■ <i>Test Port</i> - Filled in automatically. ■ <i>Test Group</i> - The first channel to be used as the FROM side of the test object. The allocation of channels depends on the Bandwidth and the Bandwidth Type of the object under test. You must insure that the test group has sufficient available channels.
Test Object TO Hier, Ext, NPC ID, Ch	The same information as for the Test Object FROM side, but referring to the TO side. FROM and TO NPCs may be the same, if the test connection calls for only one; for example, if FROM and TO are only different channels in the same NPC.
Object Under Test Ckt ID	The Ckt ID of the circuit to be made an object under test, if you are going to test a circuit. For unmapped channels, leave blank.
Termination State	Information concerning the termination of the object under test. ■ <i>F</i> - Terminated in FROM direction. ■ <i>T</i> - Terminated in TO direction. ■ <i>B</i> - Terminated in both directions. ■ blanks - Underminated in both directions.
Channel Connection fields	Identify the object under test. Their values depend on the Object Type and the Action. For the <i>LOOP Action</i>, in which there is no object under test, the fields do not appear. If the object to be tested has been mapped, you can identify it by filling in either the Ckt ID or the lowest numbered FROM or TO channel along with its NPC. The remaining information is automatically filled in. If the object to be tested is an unmapped channel, you must specify the lowest-numbered channel to be tested.

Changes to Test State

Test States

With the exception of *TERMINATE* and *UNTERMINATE*, a TEST ACCESS **Action** requests a change in the **Test State**. **Test State** values can succeed each other only in a certain order; for example, certain **Actions** succeed only when requested from certain **Test States**.

Allowed Test State Sequences

The allowed **Test State** sequences are shown in Table 19-5.

To read the Test State Sequences table, follow these steps:

1. Look up the row of the current **Test State** down the left-hand column of the table.
2. Look up the column of the desired **Test State** across the top of the table.
3. Read the **Action** at the intersection of the row and column. A dash indicates that the **Action** is not allowed. **X** indicates the **Action** is allowed.

An attempt to enter an **Action** that is not allowed for the **Test State** results in the appropriate denial message.

Table 19-5. Allowed Test State Sequences

Current Test State	Desired Test State					
	MONITOR	SPLIT	HUB	LOOP	CHLOOP	RELEASE D
MONITOR	-	X	-	-		X
SPLIT	X	-	-	-		X
HUB	-	-	-	-		X
LOOP	-	-	-	-		X
CHLOOP	-	-	-	-	-	X
RELEASED	X	-	X	X	X	-

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Background

Introduction

DND enables you to maintain backups on the DND database.

Menu Options

To perform database backup and restore functions:

- From the DND GUI interface, select Database Backup/Restore from the Provisioning menu. The DND GUI interface allows you to backup and restore from tape the databases for all of the DACS and SNMP nodes in DND. Additionally, you can schedule recurring or one time backups of all the DND databases.
- From the DND Forms interface, select Database Administration from the Main Menu, then select Backup/Restore. The DND Forms interface allows you to backup and restore databases to and from tape. The DND Forms interface also provides choices for backing up alarm logs to and from tape and diskette and for saving report formats to diskette.

**NOTE:**

If there are any SNMP nodes identified in DND, you cannot back up any databases to tape from the DND Forms interface.

Objectives

This chapter provides background information to help you perform the following:

From the DND GUI interface:

1. Create tape backups and restore backups from tape.
2. Schedule tape backups.

From the DND Forms interface:

1. Create tape backups and restore backups from tape.
 2. Format a diskette.
 3. Create backup logs on diskette and restore logs from diskette.
 4. Backup report formats.
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

- Back up to Tape GT 20.1G
- Restore from Tape GT 20.2G
- Schedule a Back up of the DND Databases to Tape. GT 20.3G

DND Forms:

- Back up Selected Databases to Tape GT 20.1U
 - Restore Selected Databases from Tape GT 20.2U
 - Back up All Databases to Tape GT 20.3U
 - Restore All Databases from Tape GT 20.4U
 - Back up Selected DACS Alarm Logs to Tape GT 20.5U
 - Restore Selected DACS Alarm Logs from Tape GT 20.6U
 - Back up All DACS Alarm Logs to Tape GT 20.7U
 - Restore All DACS Alarm Logs from Tape GT 20.8U
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 - Back up/Restore Report Formats to Diskette GT 20.12U
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-

Backup and Restore of DND Databases

DND Databases

The DND maintains the following databases:

- The COMMON database which contains global information such as logins, network elements, and report formats.
- The DACS databases, one for each DACS (DACS II and DACS II ISX). Each DACS database contains provisioning and related information for the DACS.
- The SNMP node data (DACS II AX, AAC, IMACS, Other) which contains a group of databases each of which holds a cluster of SNMP node data.



NOTE:

When you backup or restore a DACS database, the database at the DACS is not affected.

Options for Backup and Restore

You have access to each of the following types of options for backup and restore:

- The COMMON database can be written to tape from the DND GUI and the DND Forms interface.
- A DACS database can be written to tape from the DND GUI and the DND Forms interface.
- The SNMP node data can be written to tape from the DND GUI only.
- The Reports formats, contained in the COMMON database, can be written to diskette from the DND Forms interface only.
- The DACS Alarm Logs can be written to diskette or to tape from the DND Forms interface. SNMP Alarm Logs cannot be backed up from the DND Forms interface.
- All databases, COMMON, DACS, and SNMP, can be written to tape from the DND GUI only.



NOTE:

If there are any SNMP nodes identified in DND, you cannot back up any databases to tape from the DND Forms interface.

Backup and Restore of DND Databases (Continued)

Overwriting Contents of Tape

All backup actions to tape or diskette will overwrite the current contents of the media.

Restore Action

Before restoring the COMMON database, *REMOVE* all frames from service (refer to Chapter 5, NE Provisioning).

Reasons for Backup/Restore Failure

A backup or a database restore may fail if one of the following conditions exist:

- A FRAME ADMINISTRATION/NE Provisioning request is in progress, for example, adding or deleting a DACS, or changing the name of a DACS.
- The tape or diskette is not inserted.
- The tape cartridge or diskette write-protect switch is on.
- The tape drive is not properly connected.

A database restore may also fail or be denied:

- The database on the tape was not created from the same DACS release that is currently running on the DND.
 - The language on the database is not consistent with the language of the DND.
 - If you try to restore a database or log that was created from an older release of DND in to a newer release of DND.
 - There is a database for a network element on the tape that does not exist on the DND and you are not restoring the COMMON database.
-

Backup and Restore of DND Databases (Continued)

Important Notes

**NOTE:**

On successful completion of a *COMMON* database *RESTORE*, the DND system restarts.

**WARNING:**

Restoral of the COMMON database where the current DND hardware ports configuration is not identical to that of the backup DND may cause the system to run in a faulty manner.

**WARNING:**

Before doing a FULL RESTORE, or any restore that involves the COMMON database, it is recommended that all DACSS be removed from service. It is also recommended that all users be logged off before doing a FULL RESTORE

**WARNING:**

Only one database backup or restore can be executed on the DND from either the UI or the GUI. Do not attempt to run more than one tape action on the system.

**NOTE:**

In general, users can continue to work while a backup is in progress. Actions, however, which are “network actions” cannot be updated while a backup is in progress. Network actions update multiple databases, and it is important that the copy of the databases on the tape is consistent with respect to network data. These actions will be denied while a backup is in progress: Intertie provisioning, End User provisioning, and NE Provisioning (if the backup happens to be operating on that NE simultaneously).

Backup and Restore of DND Databases (Continued)

Selective Restore A selective restore is primarily for special use and for controlled circumstances. A selective restore is used when “moving” a database from one workstation to another workstation. In this case the DACS database is newly created on the new workstation. Refer to GT 20.13U for the procedure.

Selective restore of a DACS database is discouraged. Do not perform a SELECTIVE RESTORE that includes the COMMON database unless you are certain that the configuration information on the existing COMMON database and the one on tape is the same.

**Database Retrofit
Restore** It is possible to retrofit databases from tape using the BACKUP/RESTORE Form at the UI or at the GUI. If you insert a tape with a database which was made by an older release of the DND the form will provide an error message if that database cannot be restored from that form, or will warn you that the database is from an older release and request confirmation to allow a retrofit.

Refer to the Software Release Document for details about performing a database retrofit.

DND GUI: Backing up and Restoring the DND Database from Tape

Description

From the DND GUI Backup/Restore form, you can backup or restore the DND database. It is recommended that you do a complete backup and a complete restore, rather than backup or restore information for selected sites.

Backup

Figure 20-1 shows the *BACKUP* Action on the BACKUP/RESTORE form.

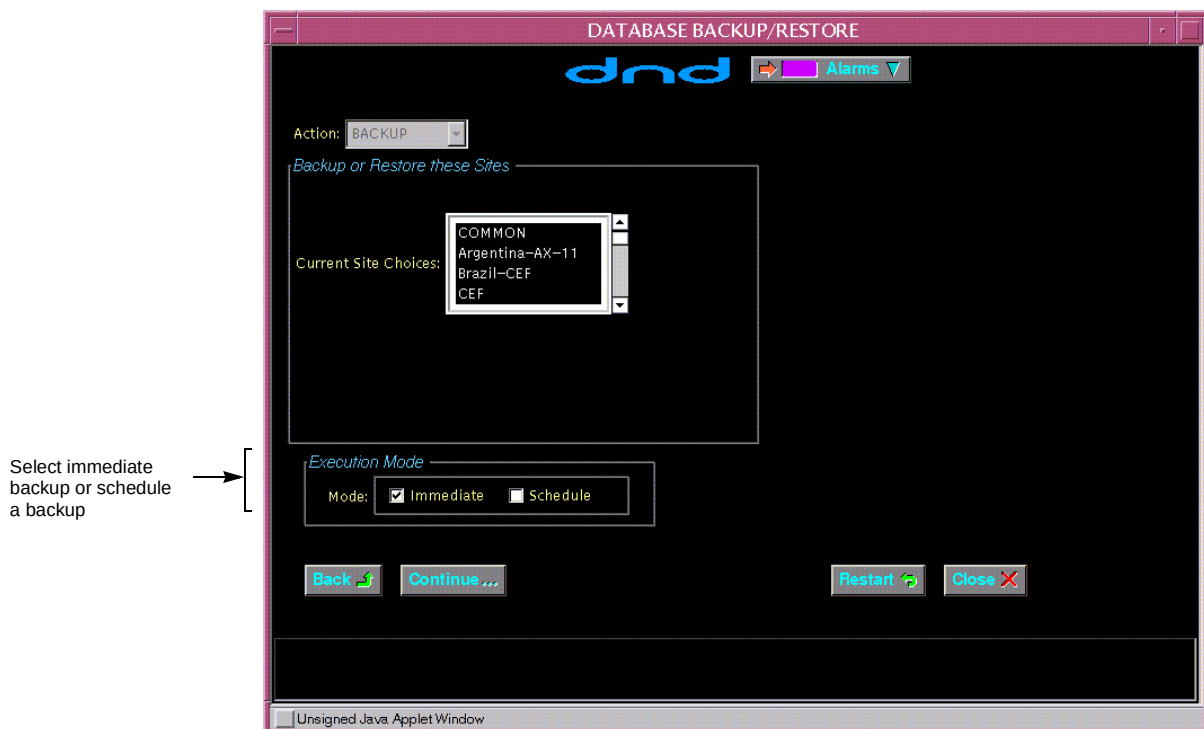


Figure 20-1. DND GUI: Database Backup/Restore Form - Backup Action

Note that the STATUS line displays messages for the start and end of each database backup/restore. This notifies the user of the current action.

DND GUI: Backing up and Restoring the DND Database from Tape (Continued)

Using Stop or Abort

If you click **Stop** or select the ABORT Action from the Database Backup/Restore Form before the backup is complete, the backup may be incomplete and the tape will not be able to be used to restore.

See GT 20.1G and GT 20.3G for details on the procedure for using the *BACKUP* Action.

DND GUI: Backing up and Restoring the DND Database from Tape (Continued)

Restore

Figure 20-2 shows the *RESTORE* Action on the Database Backup/Restore form.

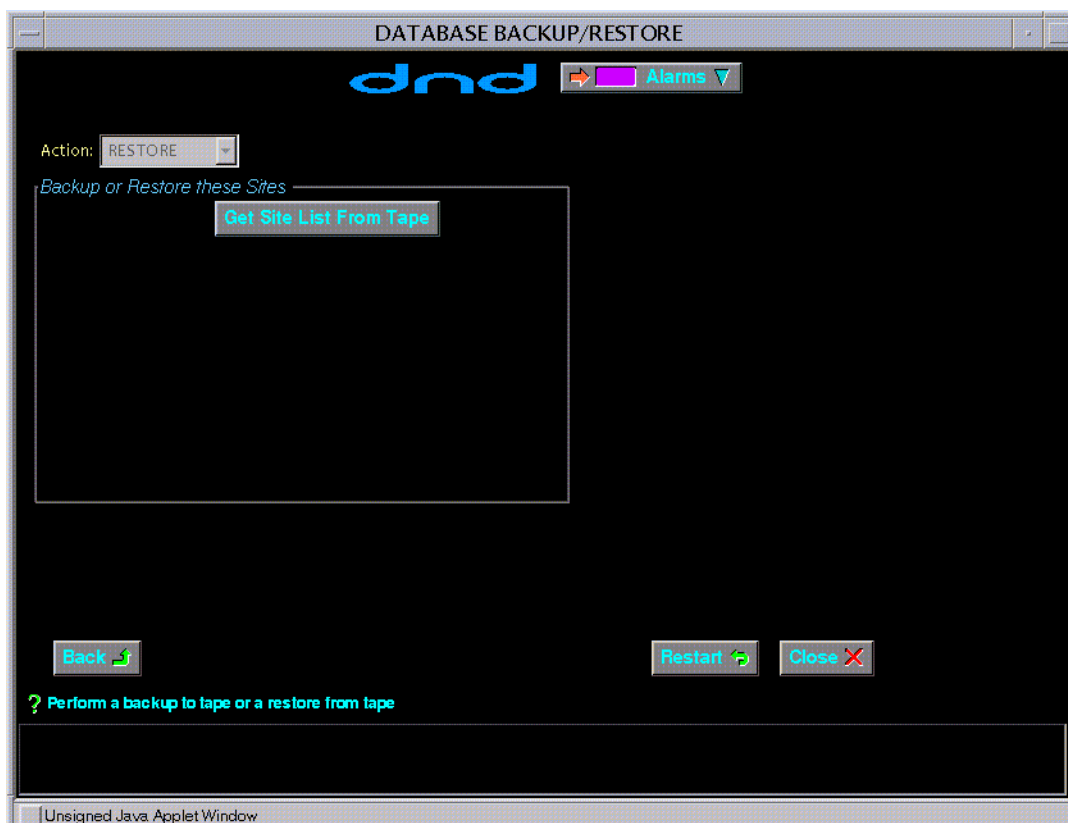


Figure 20-2. DND GUI: Database Backup/Restore - Restore Action

Note that the STATUS line displays messages for the start and end of each database backup/restore. This notifies the user of the current action.

DND will restart when a *RESTORE* Action with the COMMON database has been successfully completed.

If you click **Stop** before the restore is complete, the restore may be incomplete.

See GT 20.2G for details on the procedure for using the *Restore* Action.

DND GUI: Backing up and Restoring the DND Database from Tape (Continued)

Scheduled Backup

Figure 20-3 shows a sample Database Backup/Restore form after a scheduled backup has been selected.

Current Site Choices is not a valid selection for a scheduled backup. Only full backups (all sites) can be scheduled.

Set date and time for a scheduled backup

Schedule a periodic backup by selecting the number of repetitions, an interval, and scale. A 0 in the **Number of times** field means to repeat forever.

The screenshot shows the 'DATABASE BACKUP/RESTORE' window. At the top, there's a 'dnd' logo and an 'Alarms' button. Below that, the 'Action' dropdown is set to 'BACKUP'. The 'Backup or Restore these Sites' section contains a list box titled 'Current Site Choices' with the following items: COMMON, Argentina-AX-11, Brazil-CEF, and CEF. The 'Execution Mode' section has two radio buttons: 'Immediate' (unchecked) and 'Schedule' (checked). Below this, the 'DATE' section has dropdowns for Day (01), Month (Dec), and Year (1999). The 'TIME' section has dropdowns for Hour (15) and Minute (05). The 'Repeat' section has fields for 'Number of times' (01), 'Interval' (00), and 'Scale' (None). At the bottom, there are buttons for 'Back', 'Continue...', 'Restart', and 'Close'. A status bar at the bottom indicates 'Unsigned Java Applet Window'.

Figure 20-3. DND GUI: Database Backup/Restore -Scheduling a Backup

DND GUI: Backing up and Restoring the DND Database from Tape (Continued)

Database Retrofit

Figure 20-4 shows a sample Database Backup/Restore form when an older database has been selected for a Database Restore.

The screenshot shows the 'DATABASE BACKUP/RESTORE' window. The 'Action' dropdown is set to 'RESTORE'. Under 'Backup or Restore these Sites', there is a 'Get Site List From Tape' button and a list of 'Current Site Choices' including 'COMMON', 'A-AAC-01-NJ-Manalapn', 'A-AAC-02-ND-Rugby', and 'A-AAC-03-WA-Olympia'. The 'Name' field is 'Colossal DND' and the 'Backup date' is '09 Apr 99 09:02:13'. The 'Release' field is 'DACS-II Network Director Release 2.0.1'. The 'Confirm Retrofit' checkbox is checked. At the bottom, there are 'Back', 'Start', 'Restart', and 'Close' buttons. A warning message states: '? The tape contains a DB from a previous release. Confirm continuation of the restore and retrofit of the DB: Press Start button to start the requested action.'

Release number of database on tape. Confirm to perform restore.

Figure 20-4. DND GUI: Database Backup/Restore - Database Retrofit

DND GUI: Database Backup/Restore Form

Field Descriptions The field values for the DATABASE BACKUP/RESTORE form are described in Table 20-1.

Table 20-1. DND GUI: Field Descriptions for DATABASE BACKUP/RESTORE Form

Field	Description
Action	(Combo box) Mandatory. The values are: ■ <i>BACKUP</i> - Backup to tape. ■ <i>RESTORE</i> - Restore from tape. ■ <i>ABORT</i> - Abort current scheduled backup or another user's running backup. ⇒ NOTE: A backup which is started as a scheduled task by another user on the GUI can be aborted. From any GUI which has permission to use the Database Backup/Restore form, choose the <i>ABORT</i> action and Execute the form. When the currently running action is completed on the current database then the backup will be stopped and notification will be broadcast on the status line.
Current Site Choices	(Multi-select combo box) For <i>BACKUP</i> Action, this contains an alphabetic list of all of the network elements in DND, including DACS and SNMP nodes. By default all sites will be backed up. ⇒ NOTE: A scheduled backup must select all sites. For <i>RESTORE</i> Action, this lists the network elements, including DACS and SNMP nodes, that are on the tape. By default all sites will be restored. To selectively backup/restore, CTRL click to select sites.
Name	(Display only) The DND System Name as indicated on the SYSTEM NAME CHANGE form. See Chapter 4, System Administration for details.

**Table 20-1. DND GUI: Field Descriptions for DATABASE BACKUP/
RESTORE Form**

Field	Description
Execution Mode	(Radio Buttons) For <i>BACKUP</i> Action: ■ <i>Immediate</i>- the backup will be performed as soon as you click Start . ■ <i>Schedule</i> - the backup is scheduled for a later date and/or time.
Date	(Combo boxes) The Day , Month , and Year make up the date for the scheduled backup.
Time	(Combo boxes) The Hour and Sec make up the date for the scheduled backup.
Repetition	(Combo boxes) The Number of repetitions , Interval , and Scale make up the repetition schedule for the backup. If 0 is entered into Number of repetitions , the backup will be repeated forever.
Backup Date	(Display only) Displays date of backup.
Working on:	(Display only) This field appears during the backup/restore and displays the current database/node that is being worked on.

DND Forms: Summary of Backup and Restore Actions

Summary Table Table 20-2 summarizes the backup and restore actions available from DND Forms.

Table 20-2. Backup and Restore Actions

Information Type	Tape Actions	Diskette Actions
DND Databases for each DACS and the COMMON Database	<i>FULL BACKUP</i> <i>FULL RESTORE</i> <i>SELECTIVE BACKUP</i> <i>SELECTIVE RESTORE</i>	None
Alarm Log	<i>FULL BACKUP</i> <i>FULL RESTORE</i> <i>SELECTIVE BACKUP</i> <i>SELECTIVE RESTORE</i>	<i>BACKUP</i> <i>RESTORE</i>
Report Formats	(automatically backed up with COMMON database)	<i>BACKUP</i> <i>RESTORE</i>

Stopping Tape Backup/Restore

From the DND Forms interface, you can abort the tape backup/restore process by pressing the **DELETE** key twice. The action may not stop immediately; however, the command will stop the backup/restore process after the action on the current database is complete.

DND Forms: Backing up and Restoring the DND Database from Tape

Description

From the DATABASE BACKUP/RESTORE (TAPE) form, shown in Figure 20-5, the COMMON database and the DND database for each DACS can be backed up to and restored from tape. There are four actions available from this form:

- *SELECTIVE BACKUP* - backs up selected databases to tape.
- *FULL BACKUP* - backs up all databases to tape.
- *SELECTIVE RESTORE* - restores selected databases from tape.
- *FULL RESTORE* - restores all databases from tape.

Sample Form - Full Backup

Figure 20-5 shows an example of a *FULL BACKUP* of all DND databases.

DND USER INTERFACE

Status:
Alarms:

DATABASE BACKUP/RESTORE (TAPE)

Page:1
Action: **FULL BACKUP**

COMMON
DACSWest-X25
DACSEast-SNIDER
DACSCentral-X25
ISXCentral-SNIDER

Hit execute to continue!
Enter desired action

snoopy: UI-01

HELP CHOICES NEXTPAGE QUIT TOP MENU PRINT EXECUTE

Figure 20-5. DND Forms: Full Backup of DND Databases

DND Forms: Backing up and Restoring the DND Database from Tape (Continued)

Two Pages for Full Backup and Full Restore

The DATABASE BACKUP/RESTORE form becomes two pages when you are performing a *FULL BACKUP* or *FULL RESTORE* action. When performing a *FULL BACKUP*, the list of all sites is displayed on the form. Use **NEXTPAGE** and **PREV PAGE** to move back and forth between the two forms to view all of the sites when there are more than thirty sites. When the *FULL BACKUP* or *FULL RESTORE* is running, the sites that are finished being backed up or restored from tape are backlighted. The form will automatically change from page 1 to page 2, if necessary, to show the backlighted sites. When the operation is complete, the form changes back to page 1 and displays the final completion status.

DND Forms: Backing up and Restoring the DND Database from Tape (Continued)

Sample Form - Selective Backup

Figure 20-6 shows the COMMON database being chosen for backup. Use the **SELECT** and **UNSELECT** keys on the WHICH DATABASES form to create a list of databases to back up.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:'. Below this, there are two main sections: 'DATABASE BACKUP/RESTO' and 'VALID ACTIONS'. Under 'DATABASE BACKUP/RESTO', it says 'Page:1' and 'Action: SELECTIVE BACKUP'. Under 'VALID ACTIONS', it says 'FULL BACKUP'. The central part of the window is titled 'WHICH DATABASES ?' and contains a list of databases: 'COMMON', 'DACSWest-X25', 'DACSEast-SNIDER', and 'ISXCentral-SNIDER'. The 'COMMON' database is highlighted with a red background. Below the list, there is a prompt: 'Press SELECT to select.' and 'MULTI-SELECT MENU. Use "SELECT" key (F8) for individual selections.' At the bottom, there is a row of buttons: 'HELP', 'PREVIOUS', 'NEXT', 'QUIT', 'FIRST', 'LAST', 'UNSELECT', and 'SELECT'. The 'snoopy: UI-01' text is visible above the buttons.

Figure 20-6. DND Forms: Selective Backup

DND Forms: Backing up and Restoring the DACS Alarm Log

Description

The DACS Alarm Log can be backed up to and restored from tape or diskette. If you use tape, you can back up the DACS Alarm Log for all databases or for selected databases. If you use diskette, you can back up the DACS Alarm Log for an individual database.



NOTE:

From the DND Forms interface, only the DACS Alarm Logs can be backed up to diskette or to tape. SNMP Alarm Logs cannot be backed up from the DND Forms interface

When an alarm log is restored it does not overwrite the existing alarm log for that DACS. The alarm log that was restored can be displayed by choosing the **Backup** choice from **Which Log** in the Alarm Log Report.

DND Forms: Backing up and Restoring the DACS Alarm Log (Continued)

Alarm Log Back up and Restore from Tape

From the LOG BACKUP/RESTORE form, shown in Figure 20-7, the ALARM LOG can be backed up to and restored from tape. There are four actions available from this form:

- *SELECTIVE BACKUP* - backs up Alarm Log for selected databases to tape
- *FULL BACKUP* - backs up Alarm Log for all databases to tape
- *SELECTIVE RESTORE* - restores Alarm Log for selected databases from tape
- *FULL RESTORE* - restores Alarm Log for all databases from tape

DND USER INTERFACE

Status:
Alarms:

Page:1
Action: **SELECTIVE BACKUP** Type: **ALARM** VALID TYPES: **ALARM**

WHICH DATABASES ?

DACSWest-X25	DACSCentral-X25
DACSEast-SNIDER	ISXCentral-SNIDER

Press SELECT to select.
MULTI-SELECT MENU. Use "SELECT" key (F8) for individual selections.
Enter Log Type

snoopy: UI-01

HELP PREVIOUS NEXT QUIT FIRST LAST UNSELECT SELECT

Figure 20-7. DND Forms: LOG BACKUP AND RESTORE (TAPE) Form

DND Forms: Backing up and Restoring the Alarm Log (Continued)

Alarm Log Back up and Restore from Diskette

From the LOG BACKUP/RESTORE (DISKETTE) form, shown in Figure 20-8, and individual ALARM LOG can be backed up to and restored from diskette.

There are two actions available from this form:

- *BACKUP* - backs up Alarm Log for a specified databases to diskette.
- *RESTORE* - restores Alarm Log for a specified database from diskette.

The screenshot shows a window titled "DND USER INTERFACE". Inside, the text "Status:" and "Alarms:" is visible. A title bar within the window reads "LOG BACKUP/RESTORE (DISKETTE)". Below this, the form contains the following text: "Action: BACKUP Type: ALARM Database Name: DACSCentral-X25". Further down, it says "Insert formatted diskette" and "Press enter to continue or any other key to quit". At the bottom of the window, there is a status bar that reads "snoopy: UI-01" and a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 20-8. DND Forms: LOG BACKUP/RESTORE (DISKETTE) Form

DND Forms: Backing up and Restoring Report Formats

Description

Report formats are contained in the COMMON database. They are automatically backed up with the COMMON database. DND also provides the ability to save report formats on diskette. This is useful for creating report templates which can be distributed to a number of DNDs.

There are two actions available from the REPORT FORMAT BACKUP/RESTORE (DISKETTE) form:

- *BACKUP* -backs up all REPORT FORMATS to diskette.
 - *RESTORE* - restores all REPORT FORMATS from diskette.
-

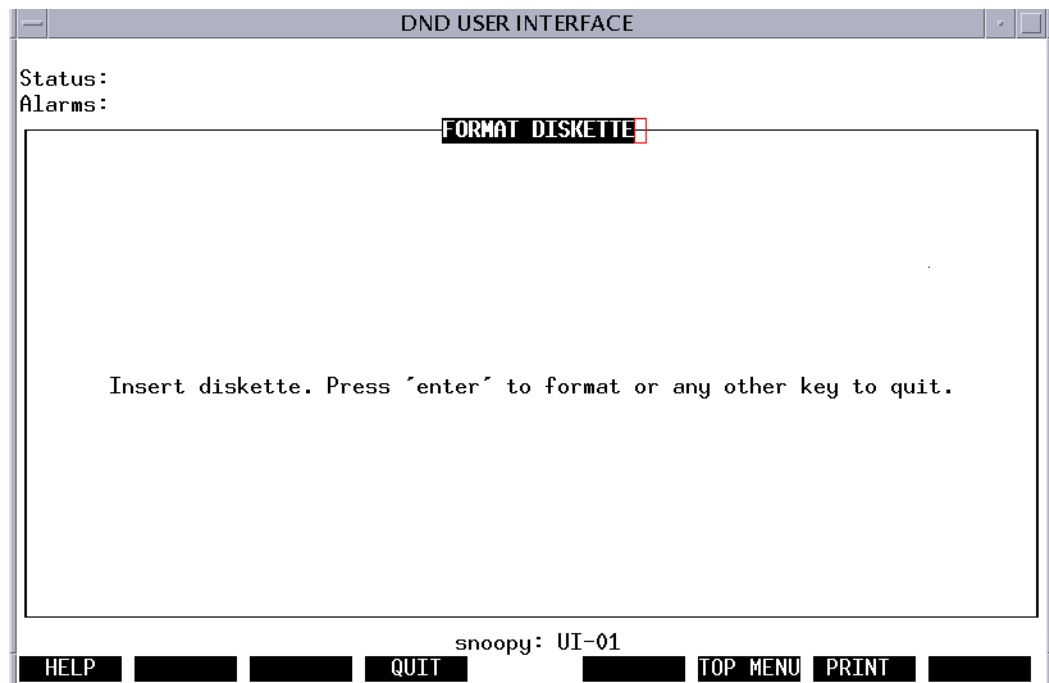
DND Forms: Formatting a Diskette

Description

DND provides a menu option that enables you to format a UNIX diskette. You must format diskettes before using them to backup the alarm log or the report formats.

Sample Form

From the DATABASE ADMINISTRATION menu, select BACKUP/RESTORE, then select FORMAT DISKETTE. Follow the prompts that appear. A sample screen is shown in Figure 20-9.



The screenshot shows a window titled "DND USER INTERFACE". Inside the window, the text "Status:" and "Alarms:" is visible on the left. In the center, the text "FORMAT DISKETTE" is displayed in a black box with a red border. Below this, the instruction "Insert diskette. Press 'enter' to format or any other key to quit." is shown. At the bottom of the window, the text "snoopy: UI-01" is visible. Below the window, there is a row of buttons: "HELP", "QUIT", "TOP MENU", and "PRINT".

Figure 20-9. DND Forms: Format Diskette Form

When formatting is in progress, the form will display a sequence of dots (.). The diskette format is then verified and the form will display a sequence of Vs (v). The UI will display EXECUTING and block all other operations until the diskette is formatted and verified.

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Background

Introduction

DND has the capability to control and report performance monitoring parameters for CEPT type NPCs.

24-Hour Performance Monitoring is accessed through the DND Forms interface only.

**NOTE:**

In order to use DND's 24-hour performance monitoring feature, set the environment variable PM24HR_NONFT to **YES** in *userenv*. For details, see "Environment Variables" in Chapter 2, Getting Started.

Objectives

This chapter provides background information to help you perform the following:

1. Schedule Performance Monitoring Reports on the DACS
2. Browse performance statistics
3. Reset performance statistics

Related tasks

For related tasks, see the following DND Forms General Tasks in Volume II:

- Configuring DACS II for 24-Hour Performance Monitoring GT 2.5U
- Browsing 24-Hour Performance Monitoring Data GT 21.1U
- Resetting 24-Hour Performance Monitoring Statistics GT 21.2U

Related information

For related information, see:

- *DACS II Network Director Software Release Description*
 - *DACS II and DACS II ISX Operation and Maintenance Manuals*
-

Background (Continued)

Related Reports

There are two reports associated with 24 Hour Performance Monitoring:

- *24-HOUR PERFORMANCE Report*
 - Generates reports for the collected PM data
 - The report formats can be customized to display any of the collected PM data
 - *24-HOUR PM LOG* - a recording of all NPC service state discrepancies found during the PM collection process
-

Performance Parameters

Counters Maintained

The performance monitoring parameters are those reported in the daily 24-hour performance data reports sent by the DACS. The DND database is updated based on the output of the daily report.

There are three daily counters also maintained by the DND for each NPC:

- **Days Data Collected**—The number of days for which performance data has been successfully collected.
- **Errored Days**—The number of days for which the performance data has not been successfully collected.
- **Days Since Reset**—The number of days since the performance data has been reset.

**NOTE:**

Days Data Collected + Errored Days = Days Since Reset

Data Collected

The following data is kept for each performance parameter:

- The performance data for the last 24 hours
 - The average for the performance data based on the number of days data was collected successfully.
-

Performance Parameters for PB/PC type NPCs

These parameters are monitored for PB/PC type NPCs:

- Loss of Frame Alignment
 - Slips
 - Cyclic Redundancy Check
 - Degraded Minutes
 - Unavailable Seconds
 - Errored Seconds
 - Severely Errored Seconds
 - Multiframe Errors
 - Framing Errors.
-

Performance Parameters (Continued)

Performance Parameters for PA type NPCs

These parameters are monitored for PA type NPCs:

- CRC Block Errors
 - Errored Seconds
 - Severely Errored Seconds
 - Unavailable Seconds
 - Framing Errors
 - Out-of-Frame Seconds
 - Controlled Slip Seconds
 - Coding Violations
 - Unavailable Time Count
 - Multiframe Errors
 - Far-end Block Errors
 - Far-end Errored Seconds
 - Far-end Severely Errored Seconds
 - Far-end Unavailable Seconds.
-

Performance Parameters (Continued)

Invalid PA Parameters

Not all PA performance parameters apply to all PA type NPCs. Table 21-1 and Table 21-2 highlight the inapplicable parameters based on the *x* and *y* values in the PA_{xyz} NPC type.

Table 21-1. Invalid PA Parameters (Based on *x* value in PA_{xyz} NPC Type)

<i>x</i> value parameter	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CRC											X	X		X	X	X
MER																
FRER																
OFS																
ES																
SES																
CSS																
CV																
UAS																
UATC																
FEBE	X		X		X		X				X	X			X	X
FES	X		X		X		X				X	X			X	X
FSES	X		X		X		X				X	X			X	X
FUAS	X		X		X		X				X	X			X	X

(Continued on next page)

Performance Parameters (Continued)

Invalid PA Parameters (Continued)

Table 21-2. Invalid PA Parameters (Based on *y* value in PA_{xyz} NPC Type)

<i>y</i> value parameter	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CRC														X		
MER									X	X			X	X		
FRER														X		
OFS														X		
ES														X		
SES														X		
CSS																
CV																
UAS														X		
UATC														X		
FEBE														X		
FES														X		
FSES														X		
FUAS														X		

Scheduling Performance Monitoring Reports

Configure DACS

The 24-hour performance monitoring statistics processing feature requires that you configure each DACS for 24-hour performance monitoring. Refer to GT 2.4U for instructions.

**NOTE:**

Do not schedule performance monitoring reports to be executed at midnight. Minor differences in time between the DACS and DND may cause the PM reports to be received on the wrong day.

When Reports Are Available to DND

After you create the DACS on the DND and configure each DACS for performance monitoring, DND will expect the first report from the DACS in the period starting 12:00 midnight and ending 24 hours later.

If you scheduled the report to run before 12:00 midnight, any data received before the first midnight will be discarded. This will also be true following a DND restart for DACS that already exist in the DND database and following DACS removals or restorations. Figure 21-1 illustrates when DND expects reports from the DACS.

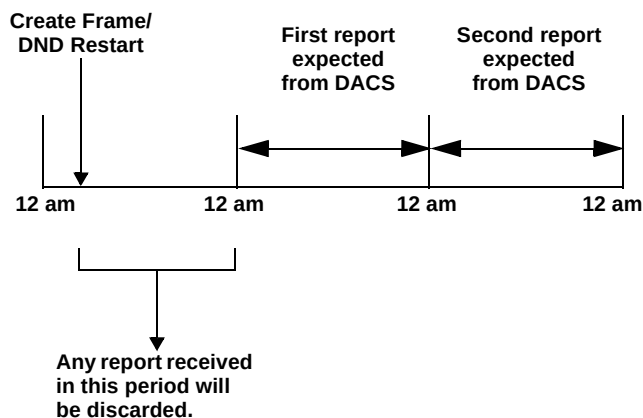


Figure 21-1. Intervals when Performance Monitoring Reports are Expected

DND Forms: 24-Hour Performance Search Criteria Form

Purpose

The 24-Hour Performance form is used to reset or browse performance statistics. To access the form, from the DND MAIN MENU, select PROVISIONING, then select 24-HOUR PERFORMANCE. The 24-HOUR PERFORMANCE form displays, as shown in Figure 21-2.

DND USER INTERFACE

Status:
Alarms:

24-HOUR PERFORMANCE SEARCH CRITERIA

Site Name: DACSWest-X25
 NPC ID: _____
 Type: _____ NPC Number (Hier): _____ (Ext): _____

AVERAGE		AVERAGE		AVERAGE	
CRC: _____	ES: _____	SES: _____			
UAS: _____	FRER: _____	OFS: _____			
CSS: _____	CV: _____	UATC: _____			
MER: _____	FEFE: _____	FSES: _____			
FES: _____	FUAS: _____	LOFA: _____			
ERS: _____	SLIP: _____	US: _____			
DM: _____	SERS: _____				

No of Days: Collected: _____ Since Reset: _____ Errored: _____

Enter site name _____

snoopy: UI-01

HELP CHOICES QUIT TOP MENU PRINT EXECUTE

Figure 21-2. DND Forms: 24-HOUR PERFORMANCE SEARCH CRITERIA Form



NOTE:

To display the 24-HOUR PERFORMANCE option on the PROVISIONING menu, set the environment variable PM24HR_NONFT to **YES**.

DND Forms: 24-Hour Performance Form

Purpose

The 24-Hour Performance form is used to reset or browse performance statistics. To access the form, from the DND MAIN MENU, select PROVISIONING, then select 24-HOUR PERFORMANCE. The 24-HOUR PERFORMANCE form displays, as shown in Figure 21-3.

The screenshot shows a window titled "DND USER INTERFACE". Inside, there are labels for "Status:" and "Alarms:". A section titled "24-HOUR PERFORMANCE" contains the following fields:

- Site Name: **DACS West-X25**
- Action: **RESET**
- Type: _____
- NPC ID: _____
- Number (Hier): _____
- (Ext): 1 _____
- Service State: _____

Below these fields is a large empty rectangular box. At the bottom of the form area, it says "Enter the NPC number in extended format. _____". Below the form area, it says "snoopy: UI-01". At the very bottom, there is a row of buttons: **HELP**, **QUIT**, **TOP MENU**, **PRINT**, and **EXECUTE**.

Figure 21-3. DND Forms: Resetting Performance Monitoring Statistics



NOTE:

To display the 24-HOUR PERFORMANCE option on the PROVISIONING menu, set the environment variable PM24HR_NONFT to **YES**.

DND Forms: 24-Hour Performance Form (Continued)

Field Descriptions The field values for the 24-HOUR PERFORMANCE MONITORING form are described in Table 21-3.

Table 21-3. DND Forms: Field Descriptions for the 24-HOUR PERFORMANCE MONITORING Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5, NE Provisioning for more details.
Service State	The status of the NPC. This field cannot be changed by the user except as the result of an NPC Provisioning Action . The choices are: ■ <i>UEQD</i> - Unequipped. The NPC referenced by the NPC ID is not currently recorded in the DND and/or DACS databases (equipped). ■ <i>OOS</i> - Out of service. The NPC is currently equipped, but is not operable. ■ <i>IS</i> - In service. The NPC is equipped and operable.
Action	The actions are: ■ <i>RESET</i> - The RESET command resets the average performance statistics in the DND database for one NPC or all NPCs. The following daily counters will also be reset to zero: Days Data Collected Days Since Reset Errored Days This command does not erase the last daily 24-hour performance counts. ■ <i>BROWSE</i> - The BROWSE command allows you read-only access to the performance statistics database.

Table 21-3. DND Forms: Field Descriptions for the 24-HOUR PERFORMANCE MONITORING Form (Continued)

Field	Description
NPC ID	Mandatory. The NPC ID is a user-defined string of characters that uniquely identify an NPC on a frame. An NPC ID can be from 1 to 41 characters in length. Most printable characters are allowed. To reset the average performance statistics in the DND database for all NPCs, enter a * in this field and choose the RESET action.
Type	The type of NPC. The format is ABxyz where AB identifies the type of hardware and xyz sets certain provisioning parameters such as frame and signaling format. This is a display only field.
Number (Hier)	The number of the NPC in hierarchical (hier) numbering.
Ext	The number of the NPC in extended numbering.

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Background

Introduction

Both the DND GUI and DND Forms interface have a Task Administration function. Task administration allows you to administer scheduled tasks - such as database synchronization.

Many DND forms allow you to execute the **Action** immediately or to schedule it. You can display and delete scheduled tasks by using the Task Administration menu option from the DND GUI or DND Forms interface.

In addition, the Task Administration function available from the DND Forms interface allows you to manage print requests. In the DND GUI, print requests are managed from the Printer Administration option from the Provisioning task bar button.

Objectives

This chapter provides background information to help you perform the following:

1. List and delete scheduled tasks
2. List and delete print requests (DND Forms only)

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Displaying Scheduled Tasks	GT 22.1G
■ Deleting Scheduled Tasks	GT 22.2G

DND Forms:

■ Displaying Scheduled Tasks	GT 22.1U
■ Deleting a Scheduled Task	GT 22.2U
■ Displaying Print Jobs	GT 22.3U
■ Deleting a Print Job	GT 22.4U
-

DND GUI: TASK ADMINISTRATION Form

Sample Screen

By selecting TASK ADMINISTRATION from the **Provisioning** button in the DND task bar, you can list scheduled tasks, and delete tasks by Site Name and/or User ID.

The screenshot shows a Java applet window titled "TASK ADMINISTRATION". The interface has a dark background. At the top, there is a "dnd" logo and a button labeled "NE Summary ...". Below this, the "Action" section contains three buttons: "List Tasks" (which is selected with a checkmark), "Delete Tasks", and "Delete All Tasks". The "Task Selection Criteria" section is divided into "Selection Options" and "Selection Values". Under "Selection Options", there are two checkboxes: "Site Name" (checked) and "User ID" (unchecked). Under "Selection Values", there is a dropdown menu for "Site Name" with the value "cef1" selected. At the bottom of the form, there are four buttons: "Back", "Continue ...", "Restart", and "Close". A small note at the bottom left reads "? The name of the network element". The window's title bar indicates it is an "Unsigned Java Applet Window".

Figure 22-1. DND GUI: TASK ADMINISTRATION Form

DND GUI: TASK ADMINISTRATION Form (Continued)

Fields

The field values for the TASK ADMINISTRATION form are described in Table 22-1.

Table 22-1. DND GUI: Field Descriptions for the TASK ADMINISTRATION Form

Field	Description
Action	(Combo box) Valid choices are: ■ <i>LIST TASKS</i> - lists tasks that match the specified selection criteria ■ <i>DELETE TASKS</i> - enables you to delete individual tasks for a Site and/or User ID. ■ <i>DELETE ALL TASKS</i> - allows you to delete all scheduled tasks in the system, or all scheduled tasks for a Site and/or User ID.
Selection Options	(Radio buttons) Select display/delete options. You can display or delete tasks by Site Name, User ID or both. If no options are selected, all scheduled tasks will be displayed or deleted.
Site Name	(Combo box) Select one site from the list.
User ID	(Text field) Enter the DND login name for the user whose task schedules you wish to <i>LIST</i> or <i>DELETE</i> .

DND GUI: TASK ADMINISTRATION Form (Continued)

Display Scheduled Tasks

When you execute a *LIST Action* from the TASK ADMINISTRATION form, the TASK SELECTION box displays, describing the first task. Use **NEXT** and **PREVIOUS** to display descriptions of the other tasks on the list. An example of a displayed task is shown in Figure 22-2.

The screenshot shows the 'TASK ADMINISTRATION' window. At the top, there is a 'dnd' logo and a 'NE Summary ...' button. Below this, the 'Action' section has three radio buttons: 'List Tasks' (selected), 'Delete Tasks', and 'Delete All Tasks'. The 'Task Selection Criteria' section has a 'Selection Options' sub-section with 'Site Name' and 'User ID' checkboxes. The 'Task Selection' section contains a 'Task Record' sub-section with fields for 'User ID' (dacsadm), 'Site Name' (A-CEF-01-NJ-Manalapan), 'Task' (database audit/sync), 'Next Run' (04Jan01 09:00:00), 'Last Run' (empty), and 'Interval' (1 day). Below these is a 'Desc' field with the text 'alarm synchronization'. At the bottom of the 'Task Record' section, there are 'Task' and 'Total' fields showing '1' and '6' respectively. The 'Navigate through results' section has 'Next Task' and 'Previous Task' buttons. At the very bottom, there are 'Back', 'Restart', and 'Close' buttons. The window title bar at the bottom says 'Unsigned Java Applet Window'.

Figure 22-2. DND GUI: A Displayed Task

DND GUI: TASK ADMINISTRATION Form (Continued)

Field Descriptions for a Displayed Task

The field values for a displayed task are described in Table 22-2.

Table 22-2. DND GUI: Field Descriptions for Displayed Task

Field	Description
User ID	The login ID of the user who created the task.
Site	The Site Name of the DACS on which the task is scheduled to be implemented.
Task	The name of the form on which the task was created.
Next Run	The time when next execution of the task is scheduled to begin.
Last Run	The time when last execution of the task is scheduled to begin, if this is a task that runs more than once.
Interval	The interval, in minutes, hours or days, at which the task is scheduled to run.
Desc	A brief description of the task to be implemented.

DND Forms: TASK ADMINISTRATION Menu

Purpose

Choose the TASK ADMINISTRATION option from the DND Forms MAIN MENU to manage scheduled tasks and the print queue. The TASK ADMINISTRATION menu is shown in Figure 22-3.

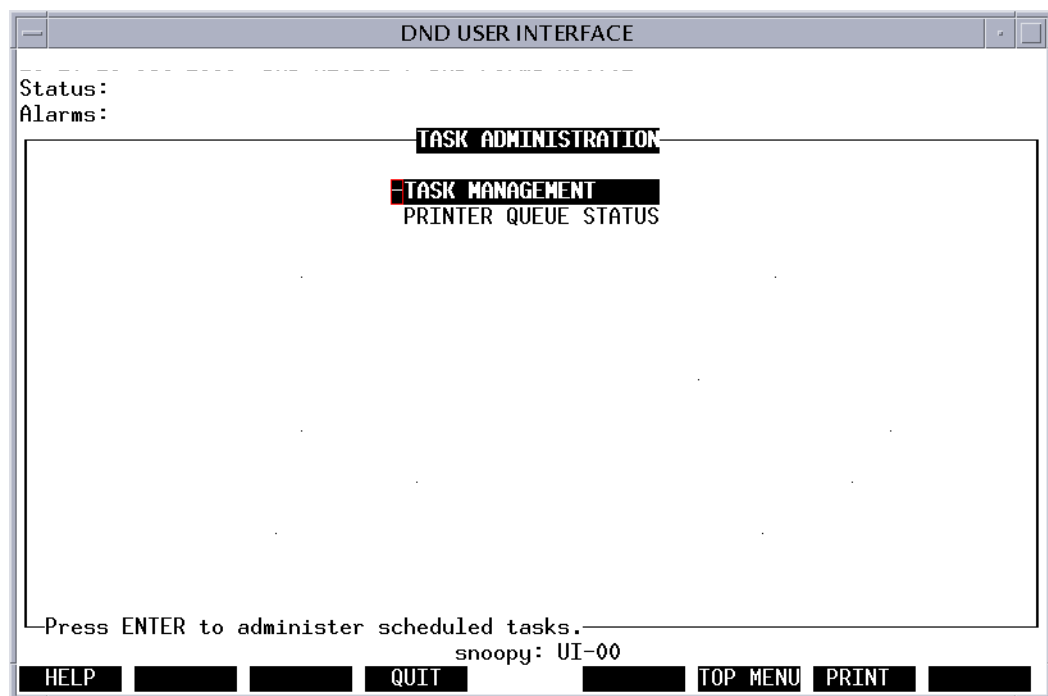


Figure 22-3. DND Forms: TASK ADMINISTRATION Menu

DND Forms: TASK ADMINISTRATION Form

Example

To display or delete a scheduled task, select TASK MANAGEMENT from the TASK ADMINISTRATION menu. The TASK ADMINISTRATION form displays, as shown in Figure 22-4.

The screenshot displays a window titled "DND USER INTERFACE". Inside the window, the text "Status:" and "Alarms:" is visible on the left. The main area is titled "TASK ADMINISTRATION" and contains two input fields: "Action:" and "Type:". Below these fields is a large text area with the prompt "Enter desired action:". At the bottom of the window, there is a status bar showing "hobbes: UI-00" and a row of buttons: "HELP", "CHOICES", "QUIT", "TOP MENU", "PRINT", and "EXECUTE".

Figure 22-4. DND Forms: TASK ADMINISTRATION Form

DND Forms: TASK ADMINISTRATION Form (Continued)

Field Descriptions The fields that appear on the screen depend on the value of **Type**. Field descriptions are described in Table 22-3.

Table 22-3. DND Forms: Field Descriptions for TASK ADMINISTRATION Form

Field	Description
Action	Mandatory. The selections for this field are: ■ <i>LIST</i> - Lists the scheduled tasks that you have specified in Type. ■ <i>DELETE</i> - Deletes the scheduled tasks that you have specified in Type. You can delete any of your own tasks. Only the system administrator can delete tasks scheduled by other users.
Type	Mandatory. Specifies which scheduled tasks you wish to list or delete. The selections are: ■ <i>TASK</i> - All tasks for a specified Site Name and User ID. ■ <i>SITE</i> - All tasks for a specified Site Name. ■ <i>USER</i> - All tasks for a specified User ID. ■ <i>ALL</i> - All scheduled tasks.
Site Name	Mandatory for <i>TASK</i> and <i>USER</i> Types only. Enter the name of the DACS where the requested Action will take place. Pressing CHOICES displays WHICH DACS? with a list of the DACS names. These names were established during Frame Administration.
User ID	Mandatory for <i>TASK</i> and <i>USER</i> Types only. Enter the DND login name for the user whose task schedules you wish to <i>LIST</i> or <i>DELETE</i> .

DND Forms: TASK ADMINISTRATION Form (Continued)

Display Scheduled Tasks

When you execute a *LIST Action* from the TASK ADMINISTRATION form, the TASK SELECTION window displays, describing the first task. Use **NEXT** and **PREVIOUS** to display descriptions of the other tasks on the list. An example of a displayed task is shown in Figure 22-5.

The screenshot shows a window titled "DND USER INTERFACE". Inside, there are sections for "Status:", "Alarms:", and "TASK ADMINISTRATION". The "TASK ADMINISTRATION" section contains fields for "Action: LIST", "Site Name: OHIO_DACS2", "Type: TASK", and "User ID: dacsadm". Below this is a "TASK SELECTION" section with fields for "User: dacsadm", "Site: OHIO_DACS2", "Task: equipment provisioning", "Next Run: 25Nov98 13:00:00", "Last Run:", "Interval: once", and "Desc: CREATE NPC testnpc 01110 (0010) PB100". At the bottom of the window, there is a status bar with the text "hobbes: UI-00" and a row of buttons: HELP, NEXT, PREV, QUIT, TOP MENU, PRINT, and EXECUTE.

Figure 22-5. DND Forms: A Displayed Task

DND Forms: TASK ADMINISTRATION Form (Continued)

Field Descriptions for a Displayed Task

The fields for a displayed task are described in Table 22-4.

Table 22-4. DND Forms: Field Descriptions for Displayed Task

Field	Description
User ID	The login ID of the user who created the task.
Site	The Site Name of the DACS on which the task is scheduled to be implemented.
Task	The name of the form on which the task was created.
Next Run	The time when next execution of the task is scheduled to begin.
Last Run	The time when last execution of the task is scheduled to begin, if this is a task that runs more than once.
Interval	The interval, in minutes, hours or days, at which the task is scheduled to run.
Desc	A brief description of the task to be implemented.

Delete a Task

To delete a task, choose the **DELETE Action** from the TASK ADMINISTRATION form. Before you delete specified tasks, it is a good idea to take a look at them by selecting the **LIST** from the **Action** field. A **DELETE Action** does not automatically list tasks.

DND Forms: PRINTER QUEUE STATUS Form

Sample Form

To list or delete print requests in the printer queue, select PRINTER QUEUE STATUS from the TASK ADMINISTRATION menu.

The results of a sample *LIST* Action on the PRINTER QUEUE STATUS form are shown in Figure 22-6.

DND USER INTERFACE

Status:
Alarms:

PRINTER QUEUE STATUS

Action: LIST Printer Name: CONSOLE PRINTER

Job no.	User	Printer Queue	Size	Time
No jobs queued to the printer				

Page: _____ Display Page:

Enter the page number _____

snoopy: UI-00

HELP NEXTPAGE PREVPAGE QUIT TOP MENU PRINT

Figure 22-6. DND Forms: Sample PRINT QUEUE STATUS Form

DND Forms: PRINTER QUEUE STATUS Form (Continued)

Field Descriptions

The field values for the PRINTER QUEUE STATUS form are described in Table 22-5.

Table 22-5. DND Forms: Field Descriptions for the PRINTER QUEUE STATUS Form

Field	Description
Action	Mandatory. Enter the action to be performed with regard to the printer job. ■ <i>LIST</i> - Select <i>LIST</i> to display the printer queue. ■ <i>CANCEL</i> - Select <i>CANCEL</i> to cancel any job in the printer queue.
Printer Name	Name of the printer. Press CHOICES for a list of valid printer names.
Printer Status	The printer status.

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Background

Introduction

DND provides the user with the capability to send an MML command directly to the DACS and receive a response. This mode is used to complete DACS maintenance and administrative operations, and to operate features not supported by DND.

Menu Options

To send commands directly to the DACS:

- From the DND GUI interface, select DACS Message from the Provisioning menu
 - From the DND GUI, select Telnet from the Provisioning menu (available only when the DACS is provisioned with a TCP/IP interface).
 - From the DND Forms interface, select Passthrough from the Main Menu
-

Description

Each of the many passthrough methods behave differently and what is available and the consequences to operation of the system are different for each:

- From the DND Forms:
 - **Multiplexed Passthrough**- The user is connected to the DACS and is sharing the link that the DND is using for commands and responses. Full interactive help is not available, however, the user is able to observe all commands and responses and autonomous output being received by the DND in addition to issuing separate commands.
 - **Full Passthrough** - Full passthrough provides full interactive capabilities to the DACS on a dedicated connection to the DACS.
If the DACS is provisioned for SNIDER communications:
When a full passthrough session is made to the DACS over a SNIDER link, that passthrough session owns the communication link to the DACS. Since there is only one link available to the DACS, no other provisioning commands can be issued to the DACS by the DND.
-

(Continued on next page)

Background (Continued)

Description (Continued)

If the DACS is provisioned for X.25 or TCP/IP communications:

A full separate connection is made to the DACS through a display window. The DACS is able to handle up to 16 virtual circuits on the communications link, including the connection made by the DND. Thus, if the DND is in service and communicating to the DACS, there are 15 circuits available for full passthrough.

- From the DND GUI:
 - **DACS Message** - This is similar to Multiplex Passthrough. The connection to the DACS is shared with the connection used by the DND for commands and responses.
 - **Telnet** - This option is available only if the DACS is provisioned with a TCP/IP interface to the DND. It provides a direct connection (full passthrough) to the DACS which is separate from the connection used by the DND for commands and responses. The DACS is able to handle up to 16 telnet sessions including the telnet session used by the DND.

Objectives

This chapter provides background information to help you perform the following:

From the DND GUI interface:

1. Operate the DACS Message form.
2. Send a message to the DACS using the DACS Message form.
3. Create a telnet link to a DACS with a TCP/IP link.

From the DND Forms interface:

1. Send a message to the DACS by establishing a full passthrough or multiplexed passthrough session.
 2. Create a command script of MML commands using the FRAME COMMAND SCRIPT option.
-

Background

Related tasks

For related tasks, see the following General Task in Volume II:

DND GUI:

- Sending a Message to the DACS GT 23.1G
- Creating a Telnet Link to a TCP/IP DACS GT 23.2G

DND Forms:

- Entering Multiplexed Passthrough GT 23.1U
 - Entering Full Passthrough GT 23.2U
 - Aborting Passthrough GT 23.3U
 - Creating a Script File GT 23.4U
 - Executing a Script File GT 23.5U
 - Writing a Script File to DOS Diskette GT 23.6U
 - Reading a Script File From DOS Diskette GT 23.7U
-

Related information

For related information, see

- *DACS II and DACS II ISX Command and Message Manuals*
-

DND GUI: DACS Message Functionality

DACS Message Processing

The DACS message function shares the same communication path as the DND. When the command is executed, the functionality of the DACS Message feature is very similar to the Multiplexed Passthrough of the DND Forms Interface. For details, see "DND Forms: Multiplexed Passthrough" later in this chapter.

While the DACS MESSAGE session is in progress, certain "multiplex passthrough" behaviors may be observed:

- The administrator can view and abort the "DACS Message" with the PASSTHROUGH ABORT option available from the DND Forms Main Menu
- The rules for the ability to perform a "DACS Message" are similar to that of Multiplexed Passthrough:
 - The link to the DACS must be In-Service
 - DACS Message cannot be performed when a Full Passthrough is in progress from the DND Forms Interface.

Using DACS Message begins with accessing the DACS MESSAGE form. Select the **Site Name:** you wish to communicate with, press **Start**, and enter the DACS command in the **Command:** field. Click **Execute** to send the message to the DACS. The DACS response is displayed in a separate Netscape window.

Entering Commands

When entering commands, the following is valid:

- The command line is case-insensitive; it can be entered in upper or lower case letters. DND automatically translates all letters to upper case.
 - The semi-colon (;) used to end the DACS message may be omitted. DND inserts the semi-colon for you.
 - The command must be in MML and must be in the correct syntax to execute. Syntax errors will be sent back by the DACS and displayed in the Command Response window.
-

DND GUI: DACS Message Functionality

Other Features

The DACS Message option also provides:

- Filtering options to select which types of output to display in the Command Response Window. You can view all DND and autonomous activity or limit the messages.
 - Save/Delete history of commands for the DACS MESSAGE session.
-

Limitations

The DACS Message feature has the following limitations:

- DACS Message allows only commands not requiring login
 - The “?” DACS on-line help facility is not supported across this interface
 - Except for range commands, the DACS MESSAGE form considers a command as completed only when the entire command is completely processed.
 - For example, a command with multiple IN_PROGRESS indicators may take a long time to display
 - A range command is considered complete in the DACS MESSAGE form when the response to the first element of the range is completed.
 - The history of saved commands is cleared when the DACS MESSAGE form is closed or restarted.
-

DND GUI: The DACS Message Form

DACS Message Form

Figure 23-1 displays the DACS MESSAGE form.



Figure 23-1. DND GUI: DACS MESSAGE form

DACS Command Response Window

Figure 23-2 displays the command response to the DACS Message. The DACS COMMAND RESPONSE window can scroll and hold approximately 200 lines of responses before the lines at the top of the window are truncated.

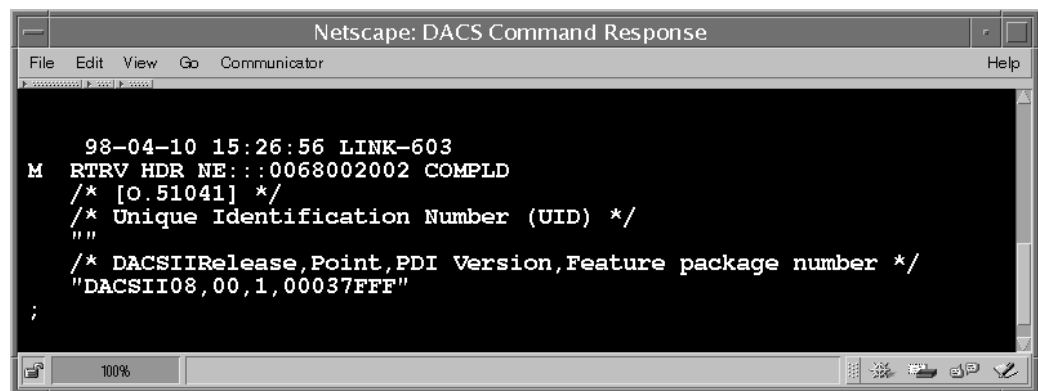


Figure 23-2. DND GUI: DACS COMMAND RESPONSE Window

DND GUI: The DACS Message Form (Continued)

Field Descriptions The field values for the DACS MESSAGE form are described in Table 23-1.

Table 23-1. DND GUI: Field Descriptions for the DACS MESSAGE Form

Field Name	Description
Current Site Choices	(Combo box) Mandatory. Select the DACS you wish to communicate with. When the Current Site Choices: field is changed, the results will appear in the same Netscape Window. By default, the list appears alphabetically.
DACS Message Filtering	(Options) Mandatory. Select the type of output to be displayed in the DACS Command Response window. All output - displays all output from the DACS. Alarms and your response - displays alarms and only responses to your commands. Your responses - only displays responses to your commands.
Command:	(Text field) Mandatory. Enter the DACS command you wish to send to the DACS. Command is case-insensitive. Semi-colon (;) can be left out of the command. The correlation tags must be omitted from the command.

DND GUI: DACS Telnet Functionality

Description

The DND supports a telnet interface to the DACS II capacity frame when the ICI card is available on the DACS II. The DACS is capable of supporting up to 16 telnet sessions.

The DND can use the telnet interface as its command and response interface.

Limitations

The DACS Telnet feature has the following limitations:

- The DACS II ISX does not support the ICI card or the telnet capability.
 - Only DACS users can access the DACS using telnet and it is necessary to login with a user name and password when using telnet. See Chapter 2, Getting Started for information on creating a DACS user name and password.
 - An IP address must be provisioned on the DACS II. See Chapter 5, NE Provisioning for information on creating a DACS II with a TCP/IP link.
-

DND GUI: The DACS Telnet Form

DACS Telnet Form Figure 23-1 displays the DACS TELNET form that is available from the Provisioning Menu. Telnet is available directly from the node icon on the network map or Network Element Summary.



Figure 23-3. DND GUI: DACS TELNET form

DND GUI: The DACS Telnet Form (Continued)

Java Security

When using the telnet interface for the first time after starting Netscape, it is necessary to enable privileges required by the DND software.

Figure 23-4 displays the dialog box that will appear if you have not yet used a Telnet link. Once you grant permission, the Telnet session will be started. It will be necessary to log into the DACS.

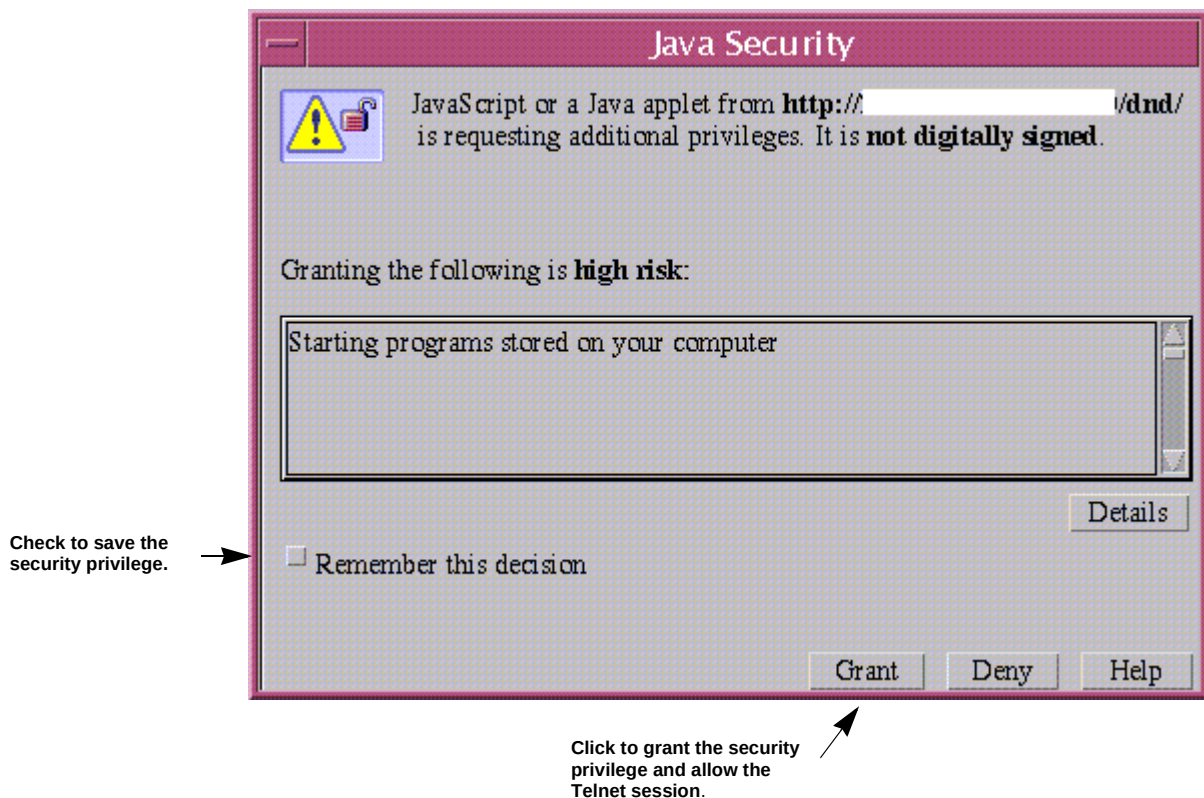


Figure 23-4. DND GUI: Java Security Dialog Box



NOTE:

To enable the Telnet function from a PC running Netscape, it is necessary to configure Netscape. The Installation Manual describes how to setup your preferences file to allow DND access to Telnet on your PC.

DND GUI: The DACS Telnet Form (Continued)

Field Descriptions The field values for the DACS TELNET form are described in Table 23-2.

Table 23-2. DND GUI: Field Descriptions for the DACS TELNET Form

Field Name	Description
Current Site Choices	(Combo box) Mandatory. Select the DACS you wish to communicate with. When the Current Site Choices: field is changed, the results will appear in the same Netscape Window. By default, the list appears alphabetically.

DND Forms: Passthrough

Passthrough Menu Figure 23-5 shows the PASSTHROUGH pop-up menu.

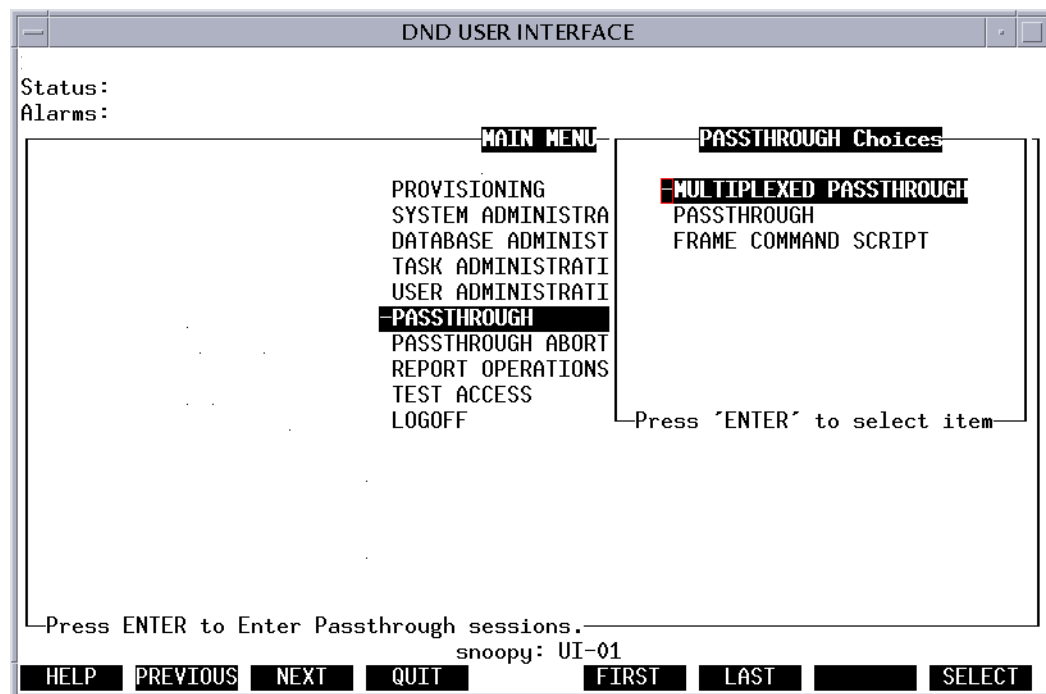


Figure 23-5. DND Forms: Passthrough Pop-Up Menu

The Passthrough pop-up menu provides three options:

- MULTIPLEXED PASSTHROUGH - use to communicate with the DACS while sharing the link with others.
- PASSTHROUGH - use to enter interactive DACS commands, such as DACS login. In this mode the link is not shared. This mode is also called *full passthrough*.
- FRAME COMMAND SCRIPT - use to create a script of MML commands.



NOTE:

Both types of passthrough are available for DACS II and DACS II ISX.

DND Forms: Passthrough (Continued)

Prerequisites

Before you can establish either type of passthrough to a DACS, you must:

- Set the link to the DACS for the MML language.
 - *CREATE* the DACS under FRAME ADMINISTRATION, described in Chapter 5: NE Provisioning.
 - For multiplexed passthrough, *RESTORE* the DACS. The DACS must be in-service and communicating with the DND for a multiplexed passthrough session to be established.
 - For full passthrough:
 - On a SNIDER connection, *RESTORE* the DACS. The DACS must be in-service and communicating with the DND.
 - With an X.25 or TCP/IP link, the DACS may be in-service or out-of-service.
-

DND Forms: Passthrough Using an X.25 Link

SVC Connection

When you *RESTORE* a DACS with an X.25 link, a SVC connection is established from the DND to the DACS. A successful *RESTORE* results in a **Site Status** of *IS P*.

For Multiplexed Passthrough, the passthrough session shares the same SVC used by the DND for communicating to the DACS. The DACS must be in-service and communicating with the DND. The Multiplexed Passthrough session may be used to observe messages being received from the DACS and processed by the DND.

For Full Passthrough, the passthrough session sets up a new SVC connection to the DACS, which is separate from that being used for DND communications. If no more SVC connections are available, a request to open a full passthrough session to the DACS is denied.

The DACS may be in-service or out-of-service when you start a full passthrough session.

DND Forms: Passthrough Using a TCP/IP Link

Description

When you *RESTORE* a DACS with an TCP/IP link, a connection is established from the DND to the DACS. A successful *RESTORE* results in a **Site Status** of *IS P*.

For Multiplexed Passthrough, the passthrough session shares the same connection used by the DND for communicating to the DACS. The DACS must be in-service and communicating with the DND. The Multiplexed Passthrough session may be used to observe messages being received from the DACS and processed by the DND.

For Full Passthrough, the passthrough session sets up a new connection to the DACS, which is separate from that being used for DND communications. If no more connections are available, a request to open a full passthrough session to the DACS is denied.

The DACS may be in-service or out-of-service when you start a full passthrough session.

DND Forms: Passthrough Using a SNIDER Link

SNIDER Connection

Multiplexed Passthrough and Full Passthrough are also supported on a SNIDER-based connection.

For Multiplexed Passthrough, the DACS must be in-service and communicating with the DND. The passthrough session and the DND user share the same SNIDER connection to the DACS. The Multiplexed Passthrough session may be used to observe messages being received from the DACS and processed by the DND.

For a Full Passthrough session to be established through an asynchronous SNIDER connection, the DACS must be in-service and communicating to the DND. The Full Passthrough session will take over the link to the DACS and no other commands from the DND will be allowed. However, echoed responses and alarms will continue to be processed.

DND Forms: Multiplexed Passthrough

Description

This type of passthrough lets you communicate directly with the DACS in a multiplexed mode, sharing the link with others. It allows simultaneous access by all operators to a DACS over either a TCP/IP or SNIDER link or a single X.25 SVC.

The MULTIPLEXED PASSTHROUGH capability does not use an entire communication link with a DACS just for the passthrough functions. Moreover, as far as is possible, it provides the same kinds of functionality as does full PASSTHROUGH.

Functions Supported

The DND supports these MULTIPLEXED PASSTHROUGH functions:

- Simultaneous passthrough sessions for each logged-in user on any DACS that is in-service
 - Command processing via the forms interface simultaneously with any active passthrough sessions
 - Automatic termination of idle passthrough sessions (tuneable with the SESSION_TIMEOUT environment variable)
 - Multiplexing of passthrough sessions onto a single communications circuit (SVC for X.25 or link for SNIDER) with the forms command processing interface for any DACS
 - Aborting a session.
-

Constraints

The following constraints apply to MULTIPLEXED PASSTHROUGH:

- Do not use the ? help mode on the DACS.
 - Do not use interactive commands to the DACS; for example, commands to log on to the DACS, or to edit macros and maps. If you inadvertently enter an interactive command, access to the DACS is temporarily suspended, until the DACS times out.
 - A multiplexed passthrough and a full passthrough session cannot be going on at the same time. The second request for a passthrough of a different type will be denied.
-

DND Forms: Multiplexed Passthrough Form

Sample Form

Figure 23-6 shows a sample MULTIPLEXED PASSTHROUGH form.

The screenshot shows a window titled "DND USER INTERFACE". Inside, there is a section labeled "MULTIPLEXED PASSTHROUGH". Below this, the "Command:" field contains "RTRV-HDR-NE". The "Output:" section displays the following text:

```
98-10-11 12:28:41 LINK-503
M RTRV HDR NE:::0131000002 COMPLD
/* [0.51041] */
/* Unique Identification Number (UID) */
""
/* DACSIIRelease,Point,PDI Version,Feature package number */
"DACSII08,02,1,00037FFF"
;
```

At the bottom of the window, there is a status bar with the text "hobbes: UI-00" and a row of buttons: "LINE UP", "LINEDOWN", "PAGE UP", "PAGEDOWN", "TOP", "BOTTOM", "EXIT", and "EXECUTE".

Figure 23-6. DND Forms: MULTIPLEXED PASSTHROUGH Window

DND Forms: Full Passthrough

Description

This type of passthrough lets you communicate directly with the DACS, but does not allow other users to share the link. Select this type when you must enter interactive commands to the DACS; for example, commands that require DACS login.

Constraints

The following constraints on the use of full PASSTHROUGH apply:

- If the DACS was connected to the DND in a direct configuration during installation, and a **Protocol** of *SNIDER* was specified during frame administration, entry of full PASSTHROUGH by one user restricts DND access to the DACS: no other DND users can send commands to it. An attempt to do so results in a message:

PASS THROUGH IS IN PROGRESS

- If a DACS is connected to the DND, whether the link protocol is *SNIDER* or *X.25*, you cannot start both a multiplexed passthrough session and a full passthrough session to the same DACS.
- The system administrator has priority for PASSTHROUGH. If an operator is in the passthrough mode, the system administrator can terminate that relationship instantly with the PASSTHROUGH ABORT selection from the MAIN MENU. A pop-up box prompts *WHICH USERS?* Select the user(s) from the list given. A successful PASSTHROUGH ABORT results in the message:

PASS THROUGH IS AVAILABLE

- Then the system administrator may enter PASSTHROUGH and, once in, cannot be displaced by DND terminal operators. However, more than one system administrator can be logged in, and any of those can terminate the passthrough session of any other with PASSTHROUGH ABORT.
 - Full PASSTHROUGH sessions time out after 15 minutes of idle time.
 - If the DACS was connected to the DND as a node on a Packet Data Network (PDN) and a **Protocol** of *X.25* was specified during frame administration, a maximum of 16 PASSTHROUGH sessions are supported. They require the availability of one Switched Virtual Circuit (SVC) per session.
-

(Continued on next page)

DND Forms: Full Passthrough (Continued)

Constraints (Continued)

- If the **Protocol** is *SNIDER*, but you change the link in PASSTHROUGH to communicate in PDS, the DND does not automatically reset the DACS to MML. Unless you do it manually before leaving PASSTHROUGH, the DND will not be able to communicate with the DACS at all after you leave PASSTHROUGH.
 - If during a SNIDER FULL PASSTHROUGH session, an alarm triggers an Automatic Reconfiguration Plan, the SNIDER FULL PASSTHROUGH session will be aborted and the automatic reconfiguration plan will be executed.
 - Since SNIDER FULL PASSTHROUGH assumes ownership of the SNIDER link, the request to enter FULL PASSTHROUGH will not complete until other outstanding DND commands to the DACS are complete. There may be a noticeable delay while waiting for the FULL PASSTHROUGH request to gain control of the link.
-

DND Forms: Full Passthrough Form

Sample Form

Figure 23-7 shows a sample FULL PASSTHROUGH window.

```

DND USER INTERFACE

Status:
Alarms:
Connected on OHIO_DACS2 DACS II

    98-10-11 12:21:47
A 098.441 REPT EVT EQPT
/* [0.01321] */
"LINK-5:TN-X-FFFF,ERR"
"STATUS:00.00,04"
:

```

hobbes: UI-00

LINE UP LINEDOWN PAGE UP PAGEDOWN TOP BOTTOM HOME EXIT

Figure 23-7. DND Forms: FULL PASSTHROUGH Window

DND Forms: Using Passthrough Selections

Screen Buffer

In PASSTHROUGH, the DND temporarily stores the last 120 lines of screen display in a special area called a screen buffer. The display includes both the commands you type and the DACS' responses to them. The screen displays 18 of those lines at any time.

In MULTIPLEXED PASSTHROUGH, the command remains on the screen. The DND saves the last 120 lines of DACS responses also. The screen displays 14 lines at a time.

The 14 or 18 lines are, therefore, a "window" to the 120 screen buffer lines. You may move, or scroll, the window up and down through the buffer by means of the function keys. However, a different set of function keys is valid for each type of passthrough.

DND Forms: Passthrough Control Keys

Full Passthrough Control Keys

Table 23-3 describes the control keys used for full passthrough.

Table 23-3. DND Forms: Full PASSTHROUGH Control Keys

F1 LINE UP Ctrl u	Scroll up (backward) one line.
F2 LINE DOWN Ctrl d	Scroll down (forward) one line.
F3 PAGE UP Ctrl b	Scroll up (backward) a full page.
F4 PAGE DOWN Ctrl f	Scroll down (forward) a full page.
F5 TOP Ctrl t	Go to top of first page.
F6 BOTTOM Ctrl l	Go to top of last page.
F7 HOME Ctrl l	Go back to last-displayed line.
F8 EXIT Ctrl e	Exit.

DND Forms: Passthrough Control Keys

Multiplexed Passthrough Control Keys

Table 23-4 lists the control keys for multiplexed passthrough.

Table 23-4. DND Forms: MULTIPLEXED PASSTHROUGH Control Keys

LINE UP	Scroll up (backward) one line.
LINE DOWN	Scroll down (forward) one line.
PAGE UP	Scroll up (backward) a full page.
PAGE DOWN	Scroll down (forward) a full page.
TOP	Go to top of first page.
BOTTOM	Go to top of last page.
EXIT	Exit
EXECUTE	Send command to DACS.

If a printer is attached to the DND console monitor, typing **Ctrl O** prints the contents of the screen. If no printer is attached, or if an error is encountered during the screen dump, the screen flashes and the terminal beeps once.

DND Forms: Terminating Passthrough

Sample Screen

When you choose the PASSTHROUGH ABORT option from the PASSTHROUGH menu, a screen appears, similar to the one shown in Figure 23-8.

DND USER INTERFACE

Status:
Alarms:

MAIN MENU

PROVISIONING
SYSTEM ADMINISTRATION
DATABASE ADMINISTRATION
PASSTHROUGH ABORT

Terminal 01 (dacsadm): OHIO_DACS2

Press SELECT to select.

MULTI-SELECT MENU. Use 'SELECT' key (F8) for individual selections.
Press ENTER to Abort Passthrough Sessions.

hobbes: UI-00

HELP PREVIOUS NEXT QUIT FIRST LAST UNSELECT SELECT

Figure 23-8. DND Forms: PASSTHROUGH ABORT Form

This capability will abort:

- DND Forms: Full Passthrough
- DND Forms Multiplexed Passthrough
- DND GUI: DACS Message

It has no control over a direct Telnet session made from the DND GUI

DND Forms: Frame Command Script

Purpose

The FRAME COMMAND SCRIPT Option allows you to create a script file of MML commands in the DND COMMON database for the DACS. You may execute the script in the background, write it on DOS diskette, edit it, delete it, or read it from DOS diskette. The maximum number of script files per DND is 100.

Database backup and restore include the script files with the other COMMON files. Manual execution of an RP and a script are mutually exclusive.

The last executed script log remains and can be viewed under REPORT OPERATIONS.

Rules for Creating Script Content

Some rules governing script content and allowed characters are as follows.

- The script language must be MML.
- Lines beginning with the # character are comment lines. They will not be sent to the DACS or logged in the log file.
- Only printable characters are allowed. The three exceptions are the | , ? , and !.
- Command lines in the script may not contain the characters ? or !, or have any data following the command termination character ;
- Empty lines are not allowed.
- The maximum length of a script line is 120 characters; the maximum file size, 150 lines.
- The only multi-line command supported by the FRAME COMMAND SCRIPT option is the login DAX command:

LGN-USER: : : DAX
- You must have changed the DAX user login to MML before executing the script containing the login DAX command.

DND Forms: FRAME COMMAND SCRIPT Form

Sample Form

To obtain the FRAME COMMAND SCRIPT option, select PASSTHROUGH from the DND Forms MAIN MENU and then FRAME COMMAND SCRIPT. An example of a frame command script is shown in Figure 23-9.

The screenshot displays the 'DND USER INTERFACE' window. At the top, it shows 'Status:' and 'Alarms:'. Below this is a title bar for the 'FRAME COMMAND SCRIPT' form. The form contains several fields: 'Action: EDIT', 'Script Name: UNIT1', and 'Mode: CHANGE'. Below these is a 'Line:' field with '001' and a '#' symbol. The main area of the form is a text editor showing a sample script with 12 lines. The script starts with a comment line, followed by a description, and then a series of commands for creating and restoring equipment. At the bottom of the form, there is a prompt 'Enter the desired edit mode:' and a 'snoopy: UI-01' label. A row of buttons is at the very bottom: 'HELP', 'CHOICES', 'QUIT', 'TOP MENU', 'PRINT', and 'EXECUTE'.

```
Status:
Alarms:

FRAME COMMAND SCRIPT

Action: EDIT   Script Name: UNIT1   Mode: CHANGE
Line: 001     #

001  #
002  # THIS IS A SAMPLE SCRIPT. THE EXACT COMMANDS WILL BE HARDWA
RE DEPENDENT.
003  #
004  # GROW AND RESTORE NAS FTMI5 AND FCS FOR UNIT 1
005  #
006  LGN-USER:::DAX:
007  CRTE-EQPT::UNIT-1::FTMI-1:EQL-1.1:
008  CRTE-EQPT::UNIT-1::FTMI-2:EQL-1.1:
009  CRTE-EQPT::UNIT-1::FTMI-3:EQL-1.1:
010  CRTE-EQPT::UNIT-1::FTMI-4:EQL-1.1:
011  RST-EQPT::UNIT-1::FTMI-1:
012  RST-EQPT::UNIT-1::FTMI-2:

Enter the desired edit mode:
snoopy: UI-01

HELP CHOICES QUIT TOP MENU PRINT EXECUTE
```

Figure 23-9. DND Forms: FRAME COMMAND SCRIPT Form

The specific fields that appear on the form depend on the **Action**.

DND Forms: FRAME COMMAND SCRIPT Form

Field Descriptions The field values for the FRAME COMMAND SCRIPT form are described in Table 23-5.

Table 23-5. DND Forms: Field Descriptions for the FRAME COMMAND SCRIPT Form

Field	Description
Action	The FRAME COMMAND SCRIPT actions are: ■ <i>EDIT</i> - Opens the file of the given Script Name and displays 13 screen lines. You may specify the type of edit with the Mode field, and the line to be edited with the Line field. ■ <i>DELETE</i> - Displays the first 13 screen lines of the Script Name file. On your pressing EXECUTE , the DND deletes the file. ■ <i>DOSREAD</i> - Reads a DOS diskette on which you have previously stored script files in the root directory. The DND has automatically supplied a suffix of SCR. ■ <i>DOSWRITE</i> - Writes selected script files to DOS diskette. ■ <i>EXECUTE</i> - Executes the specified script. ■ <i>ABORT</i> - Terminates executing a script for a site.
Script Name	1-8 alphanumeric characters. The name of the script file to which the Action is to apply. The DND converts lower to upper case.
Site Name	The name of the site where the script file is to be executed or aborted.

Table 23-5. DND Forms: Field Descriptions for the FRAME COMMAND SCRIPT Form (Continued)

Field	Description
Mode	Appears for an Action of <i>EDIT</i> only. ■ <i>Insert</i> - On EXECUTE of this <i>EDIT</i>, insert the Line into the Script Name file. You are presumed to have finished typing the line. ■ <i>Change</i> - On EXECUTE of this <i>EDIT</i>, replace the Line with the one displayed. You are presumed to have finished changing it. To delete a line, simply <i>Change</i> its contents to no value.
DAX Login Password	This field appears for an <i>EXECUTE Action</i> if the script file contains the command: LGN-USER: : : DAX There are two methods for entering a login command in a command script. Method 1. (For X.25 only) Enter the <i>LGN-USER: : : DAX</i> command in the script file. Enter the password in the DAX Login Password field. This is the recommended method for entering a login command in a command script. DND can construct a proper login command and the password remains secure. Method 2. (For X.25 only) Use the official syntax of the DACS login command in the script file, as follows: LGN-USER: : : DAX, <password> If you use Method 2 and put the password directly on the command line in the script file, the entry in the DAX Login Password field is ignored and the <password> in the script is used. The drawback to this method is that the password is revealed in the script file.
Line	Appears only for an Action of <i>EDIT</i>. The line number being referenced of the Script Name file.

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Background

Introduction

DND enables you to keep electronic notebooks, or logs, on NPC and circuit outages that have occurred on a DACS. You collect the data to be placed in a log. An advantage to keeping the log is that you can generate a report to obtain a formatted, hard-copy log.

Two logs are available:

- NPC outage log
- Circuit outage log

The logs allow you to record when an NPC or circuit, respectively, became nonfunctional, and when you restored service on them. You can store, change, or remove records for each log.

Menu Options

To record NPC and circuit outages:

- From the DND GUI interface, select Outage from the Provisioning menu.
 - From the DND Forms interface, select Database Administration from the Main Menu, then select Outage Log
-

Objectives

This chapter provides background information to help you perform the following:

3. Enter outage data
 4. Retrieve outage data
-

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

- Maintaining Outage Log Data GT 24.1G

DND Forms:

- Entering Outage Log Data GT 24.1U
 - Inserting a Record in the NPC Outage Log - Example GT 24.2U
-

DND GUI: Outage Log Form

Sample Outage Log Form

From the Provisioning menu, select Outage Log to display the OUTAGE LOG form. A sample OUTAGE LOG form is shown in Figure 24-1.

OUTAGE LOG

dnd NE Summary ...

Site Name: A-CEF-01-NJ-Manalapan

Outage ID

Outage Type: ☒ NIPIC ☐ CIRCUIT

ID: 02215

Action: ☒ Insert ☐ Modify ☐ Delete ☐ Destroy

Date/Time Outage Occurred (OUT)

DATE

Day: 04 Month: Mar Year: 1999

TIME

Hour: 14 Minute: 33 Second: 52

Date/Time Outage Cleared (IN)

DATE

Day: 04 Month: Mar Year: 1999

TIME

Hour: 14 Minute: 33 Second: 52

Record Number: 1 Total: 0

Back Execute Restart Close

? Continue with next section of the form

Unsigned Java Applet Window

Figure 24-1. DND GUI: Outage Log Form

DND GUI: Outage Log Form (Continued)

Field Descriptions The field values for the OUTAGE LOG form are described in Table 24-1.

Table 24-1. DND Forms: Field Descriptions for OUTAGE LOG Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place.
Outage Type	Mandatory. The log to be affected by the Action . the choices are: ■ <i>NPC</i> - Selects the outage log for an NPC ■ <i>CIRCUIT</i> - Selects the outage log for a circuit.
ID	Mandatory. 1 through 41 characters. The ID of the NPC or circuit for which the outage is being recorded. IDs that are not provisioned are not accepted.
Action	Mandatory. The type of record handling to be performed. The choices are: ■ <i>INSERT</i> - Places the record in the log. ■ <i>MODIFY</i> - Modifies the record. ■ <i>DELETE</i> - Removes the record from the log. ■ <i>DESTROY</i> - Removes all records from the log.
Date/Time Outage Occurred (OUT)	Select the Date and Time that the outage occurred. For the Date , select Day , Month , and Year . For the Time , select the Hour , Minute , and Second .
Date/Time Outage Cleared (IN)	Select the Date and Time that the outage cleared. For the Date , select Day , Month , and Year . For the Time , select the Hour , Minute , and Second .
Record No.	A sequence number, 1 through 9999, that is automatically assigned during an <i>INSERT Action</i> , and can be entered in other Actions . Each circuit or NPC can have up to 9999 outage records. The default is the next highest value for the set of entries for a circuit or NPC. After a deletion, the records in the sequence are renumbered automatically.
Total	Total number of outage records in the database for this ID.

DND Forms: Outage Log Form

Sample Outage Log Form

From the DATABASE ADMINISTRATION menu, select OUTAGE LOG to display the OUTAGE LOG form. A sample OUTAGE LOG form is shown in Figure 22-2.

The screenshot displays a window titled "DND USER INTERFACE". Inside, the "Status:" and "Alarms:" sections are visible. The "OUTAGE LOG" form is the central focus, containing the following fields and controls:

- Site Name:** DACSCentral-X25
- Outage Type:** CIRCUIT
- Action:** INSERT
- Record No.:** _____
- Outage ID:**
- Date Out:** __ __ __
- Time Out:** __:__:__
- Date In:** __ __ __
- Time In:** __:__:__
- Enter the outage identifier:** _____

Below the form, the text "snoopy: UI-01" is displayed. At the bottom, there is a row of buttons: HELP, [blank], [blank], QUIT, [blank], TOP MENU, PRINT, and EXECUTE.

Figure 22-2. DND Forms: Outage Log Form

DND Forms: Outage Log Form (Continued)

Field Descriptions The field values for the OUTAGE LOG form are described in Table 22-2.

Table 22-2. DND Forms: Field Descriptions for the OUTAGE LOG Form

Field	Description
Site Name	Mandatory. The name of the DACS where the requested Action will take place. Enter or press CHOICES to select a Site Name. Site Names are created from the FRAME ADMINISTRATION form. See Chapter 5 for more details.
Outage Type	Mandatory. The log to be affected by the Action . The choices are: ■ <i>NPC</i> - Selects the outage log for an NPC. ■ <i>CIRCUIT</i> - Selects the outage log for a circuit.
Action	Mandatory. The type of record handling to be performed <i>INSERT</i> Places the record in the log. <i>CHANGE</i> Modifies the record. <i>DELETE</i> Removes the record from the log. <i>DESTROY</i> Removes all records from the log.
Record No.	A sequence number, 1 through 9999, that is automatically assigned during an <i>INSERT Action</i> , and can be entered in other Actions . Each circuit or NPC can have up to 9999 outage records. The default is the next highest value for the set of entries for a circuit or NPC. After a deletion, the records in the sequence are renumbered automatically.
Outage ID	Mandatory. 1 through 41 characters. The ID of the NPC or circuit for which the outage is being recorded. IDs that are not provisioned are not accepted.

Table 22-2. DND Forms: Field Descriptions for the OUTAGE LOG Form (Continued)

Field	Description
Date Out	Three fields stating the date on which the outage began, in the format: dd mmm yy If you do not enter a Date Out when inserting an outage record, the default is the current date. where dd can be one or two digits, mmm is the first three letters of the month in either upper or lower case, and yy is the last two digits of the current year. For year, any two digits are valid.
Time Out	Three fields stating the time on which the outage began, in the format: hh:mm:ss where hh is 0 through 23 hours. 00:01 follows midnight (00:00). mm is 0 through 59 minutes, and ss is 0 through 59 seconds. The default is the current time.
Date In	The date the outage was cleared. If you do not enter a Date In when inserting an outage record, the default is the current date.
Time In	The time the outage was cleared. The default is the current time.

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Background

Introduction

The DND receives events and alarms from the network elements it manages. The user is notified when these events and alarms occur. The user can obtain the event/alarm information and monitor the current state of network elements as follows:

- Fault Management - DND Forms

This capability is available from the DND Forms Interface only and pertains only to DACS II and DACS II ISX elements. The report generation of alarms and events is provided in an alarm log, which provides a sequential listing of all events that have occurred.

- Fault Management - DND GUI

The following fault management capability is available from the DND GUI.

- Alarm Surveillance

This feature provides a single consolidated real-time display of all alarms which are currently active. The display is updated in real-time as alarms are activated and retired. An alarm acknowledgment feature is also provided and acknowledgment information is part of the display.

- NE Summary

When a new alarm occurs in the DACS network, a red arrow appears on the **Alarms...** button on the DND Task Bar, next to the site icon in the Network Map, and in the NE Summary window. The NE SUMMARY reports can be generated by pressing the new alarm arrow on the icon either in the NE Summary window or on the network map.

Additionally, the Alarm Severity feature allows users to change the severity level of PA-, PB-, and PC-type NPC facility and associated shelf alarms. This allows DACS II users the flexibility of customizing their alarm severities.

Objectives

This chapter provides background information to help you perform the following:

1. Start the Alarm Surveillance display
 2. Change the contents of the Alarm Surveillance display
 3. Acknowledge an alarm.
-

Background (Continued)

Related tasks

For related tasks, see the following General Tasks:

DND GUI:

■ Monitoring Alarms	GT 25.1G
■ Setting Alarm Selection and Sort Criteria	GT 25.2G
■ Acknowledging an Alarm	GT 25.3G
■ Generating an NE Alarm Summary Report	GT 25.4G

DND FORMS:

■ Retrieving and Acknowledging Alarms	GT 25.1U
-

Related information

For related information see the *DACS II and DACS II ISX Operations and Maintenance Manuals*.

Notes on Alarm Logging and Specific Alarms

Alarm Logging

When an alarm set message is received by the DND, the alarm set message is stored in the DND database and logged to the Alarm Log *if* the alarm *is not* already active in the DND database.

In addition, when an alarm clear message is received by the DND, the alarm clear message is stored in the DND database and logged to the Alarm Log *if* the alarm *is* currently active in the DND database.

Since Performance Monitoring messages from both domestic NPCs and DS3s cannot be cleared, these messages are always logged.

Link Failure

When an X.25 link is removed from the back of a DACS, the link is automatically removed from service. The following messages may appear in the DND alarm log:

```
OOS: LINK
CLR LINK 15
```

Note that no further action needs to be performed. These messages will appear when the X.25 link is down for one of the following reasons:

- Outgoing messages at the DACS are being queued faster than they can be processed. When the X.25 cable is replaced and communications are reestablished, the OOS: LINK and CLR LINK 15 messages may not have been sent out. With communications with the DND fully established, the messages are sent and the placed in the alarm log.
- A Message Log Recovery is performed after the link is reestablished. The OOS: LINK and CLR LINK 15 messages will be placed in the alarm log.

Power Alarm

When there is a Power alarm on a DACS II or DACS II ISX, the message that will clear the alarm is only received when a port is provisioned for screening level 5. The DND does not use this screening and will not receive notification that the Power alarm has been cleared.

To clear the Power alarm, run an Alarm Sync (see Chapter 17, Database Audit/ Synchronization) or use the MUX Passthrough (see Chapter DACS Message/ Passthrough) to issue an INIT-REG command to clear the alarm.

Fault Management - DND Forms

Overview

This feature allows you to monitor the alarm status of the DACS systems being controlled by the DND on a real time basis. In addition to notification, the feature also provides a mechanism to view the contents of the DACS Alarm Log. Details of the various fields in the Alarm Log reports are provided in this section.

The information in this section pertains only to the DND Forms Interface. For information on Fault Management using the DND GUI, refer to Chapter 14, *Report Operations*, in the Alarm Log Report section.



NOTE:

When an alarm set message is received by the DND, the alarm set message is stored in the DND database and logged to the Alarm Log *if* the alarm *is not* already active in the DND database.

In addition, when an alarm clear message is received by the DND, the alarm clear message is stored in the DND database and logged to the Alarm Log *if* the alarm *is* currently active in the DND database.

Since Performance Monitoring messages from both domestic NPCs and DS3s cannot be cleared, these messages are always logged.

DND Alarm Status Line

The DND alarm status line, labeled **Alarms**, displays equipment alarms. When this line is clear, no unacknowledged alarms are pending.

DACS Alarms

DACS Alarms are indicated when the appropriate site name appears on the alarm status line. Equipment alarms are displayed from as many DACS systems as will fit on the line.

Site Names

Site names where critical alarms arise are displayed in red (color terminal), in reverse video (monochrome terminal), or blinking (VT100 only, not the SUN console). Site names where minor or major alarms arise are displayed in red (color terminal) or in reverse video (monochrome terminal). Site names where information alarms arise are not displayed.

When a critical alarm occurs, the site name will flash until you acknowledge by pressing **Ctrl** + **a**.

Fault Management - DND Forms (Continued)

Alarm Message Elements

Table 25-1 through Table 25-8 describe DACS II alarm message elements. These field values help you identify the type of alarm. Explanations of each message element follow each table. The column headings in the report and their values are explained in Table 25-1.

Table 25-1. Explanation of DACS II and DACS II ISX Alarm Message Elements

Heading	Description
Date, Time	The date and time when the alarm was received. Dates are in order from most recent to least recent.
Sev	The severity of the alarm: CR (critical), MAJ (major), MIN (minor), CLR (clear) for Idle, and INF (information).
Summary	The type of alarm message. BMTR ALARM Backup memory transfer alarm. BMTR IDLE Backup memory transfer alarm retired. BOOT FAILED Reports that a system boot has failed during a RST : :MC or RST : :MC, TAPE command. CCB ALARM Cross-connect buffer alarm. CCB IDLE Cross-connect buffer alarm retired. CCI ALARM Clock and control interface alarm. CCI IDLE Clock and control interface alarm retired. CCNI ALARM Cross-connect network interface alarm. CCNI IDLE Cross-connect network interface alarm retired. CGA Carrier group alarm for NAS NPCs. This message reports facility alarms. The type of facility alarm is reported in the F column. CCN IDLE Cross-connect network alarm retired. CGA IDLE The message is informationally the same as for CGA. It means that the CGA has been retired. CI RESET Communications interface reset. A DACS II outputs this type of message immediately after a hardware reset. The MAJ severity notifies remote systems of the reset. DATE RESET Reports that a DACS II's date and/or time have been reset. DSG Jitter suppressor. DSPi ALARM Digital signal processing interface alarm. DSPi IDLE Digital signal processing interface alarm retired. DSPU ALARM Error recovery for the DSPU NPC. ECCN IDLE Expanded cross-connect network side (ECCN) alarm retired. ETSI ALARM Expanded time slot interchanger alarm.

Table 25-1. Explanation of DACS II and DACS II ISX Alarm Message Elements (Continued)

Heading	Description
Summary Continued...	ETSI IDLE Expanded time slot interchanger alarm retired. EER Excessive Error Rate ERR:SXC This autonomous message reports that the synchronizer on the specified synchronizer/cross-connect (SXC) CP has switched to a new phase locked loop operating mode or has switched to a new source of timing. ERR:TREF Synchronization timing reference error. FC ALARM Format converter alarm. FC IDLE Format converter alarm retired. FMT ALARM Formatter alarm. FMT IDLE Formatter alarm retired. FTMI ALARM Facility terminating module interface alarm. FTMI IDLE Facility terminating module interface alarm retired. FTU ALARM Error recovery for the FTU NPC. Refers to error condition code. IDLE:SXC The SXC has returned to in-service state. LES Loss of External Synchronization LES + AIS Loss of External Synchronization and Alarm Indication Signal. LES + EER Loss of External Synchronization and Excessive Error Rate. LES + LOFA/LOS Loss of External Synchronization and Loss of Frame Alignment or Loss of Signal. LOFA/LOS Loss of Frame Alignment or Loss of Signal. LOS Loss of signal (LOS) alarm on a DA type NPC. LOS IDLE LOS alarm retired. MC ALARM Main controller alarm. MC IDLE Main controller alarm retired. MC IN MCOND Maintenance condition (MCOND) in main controller. Reports that the MC has been restored to service in the maintenance condition. MC REMOVED Main controller removed. Reports that the MC was removed from service. OOS:CCB Cross-connect buffer out of service. OOS:CCI Clock and control interface (CCI) out of service. OOS:CCN CCN out of service. OOS:CCNI Cross-connect network interface (CCNI) out of service. OOS:DSPI Digital signal processor interface (DSPI) out of service. OOS:ECCN Expanded cross-connect network side (ECCN) out of service. OOS:ETSI Expanded time slot interchanger (ETSI) out of service. OOS:FC Format converter of a facility terminating unit (FTU) out of service. OOS:FLI Facility line interface out of service. OOS:FMT Formatter in a DS3 unit is out of service. OOS:FTMI Facility terminating module interface out of service. OOS:LINK Link out of service. OOS:MMFG Multiplexer-multiplexer interface unit functional group (MMFG) of a DS3 unit out of service.

Table 25-1. Explanation of DACS II and DACS II ISX Alarm Message Elements (Continued)

Heading	Description
Summary Continued...	ETSI IDLE Expanded time slot interchanger alarm retired. EER Excessive Error Rate ERR:SXC This autonomous message reports that the synchronizer on the specified synchronizer/cross-connect (SXC) CP has switched to a new phase locked loop operating mode or has switched to a new source of timing. ERR:TREF Synchronization timing reference error. FC ALARM Format converter alarm. FC IDLE Format converter alarm retired. FMT ALARM Formatter alarm. FMT IDLE Formatter alarm retired. FTMI ALARM Facility terminating module interface alarm. FTMI IDLE Facility terminating module interface alarm retired. FTU ALARM Error recovery for the FTU NPC. Refers to error condition code. IDLE:SXC The SXC has returned to in-service state. LES Loss of External Synchronization LES + AIS Loss of External Synchronization and Alarm Indication Signal. LES + EER Loss of External Synchronization and Excessive Error Rate. LES + LOFA/LOS Loss of External Synchronization and Loss of Frame Alignment or Loss of Signal. LOFA/LOS Loss of Frame Alignment or Loss of Signal. LOS Loss of signal (LOS) alarm on a DA type NPC. LOS IDLE LOS alarm retired. MC ALARM Main controller alarm. MC IDLE Main controller alarm retired. MC IN MCOND Maintenance condition (MCOND) in main controller. Reports that the MC has been restored to service in the maintenance condition. MC REMOVED Main controller removed. Reports that the MC was removed from service. OOS:CCB Cross-connect buffer out of service. OOS:CCI Clock and control interface (CCI) out of service. OOS:CCN CCN out of service. OOS:CCNI Cross-connect network interface (CCNI) out of service. OOS:DSPI Digital signal processor interface (DSPI) out of service. OOS:ECCN Expanded cross-connect network side (ECCN) out of service. OOS:ETSI Expanded time slot interchanger (ETSI) out of service. OOS:FC Format converter of a facility terminating unit (FTU) out of service. OOS:FLI Facility line interface out of service. OOS:FMT Formatter in a DS3 unit is out of service. OOS:FTMI Facility terminating module interface out of service. OOS:LINK Link out of service. OOS:MMFG Multiplexer-multiplexer interface unit functional group (MMFG) of a DS3 unit out of service.

Table 25-1. Explanation of DACS II and DACS II ISX Alarm Message Elements (Continued)

Heading	Description
Summary Continued...	OOS: MEMA Memory card A out of service. OOS: MEMB Memory card B out of service. OOS: PMEM Primary memory card out of service. OOS: SMEM Secondary memory card out of service. OOS: NPC NPC out of service. OOS: SYNC Synchronizer out of service. Reports that the timing extractor circuit, the phase-locked loop, the clock generator unit, or the service and reply circuit are out of service. OOS: SYNC-TB Synchronizer time base out of service. Reports that the synchronizer time base has been removed as a clock reference oscillator (CRO). OOS: SYNC-TLI Synchronizer time link interface out of service. OOS: SXC One of the SXC CPs has gone out of service as a result of either a failure and a protection switch to the duplicated side, or a manual removal of the SXC. OOS: TSI Time slot interchange out of service. OOS: TREF Synchronization timing reference out of service. OOS: UC Unit controller out of service. PBA Primary block alarm (PBA) for CEPT NPCs. PBA IDLE The PBA has been retired. POWER ALARM Power supply alarm. POWER FAIL Reports that error recovery was instigated by a DACS II because of a frame power failure. The Fld1 and Fld2 columns of the report contain field1 and field2 reported in the DACS II error status register. Refer to the description immediately following this table. POWER IDLE Power supply alarm retired. SSP ALARM Synchronizer sync port alarm. SSP IDLE Synchronizer sync port alarm retired. SYNC ALARM Synchronizer alarm. SYNC IDLE Synchronizer alarm retired. THRES ALARM Threshold alarm. This message reports that the 15-minute or 24-hour threshold exception alarm for a particular NPC has been equaled or exceeded for the facility performance parameter designated under Threshold. THRESH IDLE This threshold alarm has been retired. TS0 BOVF TS0 monitor buffer overflow. TS0 IDLE TS0 monitor buffer clear. TSI ALARM Time slot interchanger alarm. TSI ALARM Time slot interchanger alarm. TSI IDLE Time slot interchanger alarm retired. UC ALARM Unit controller alarm. UC IDLE Unit controller alarm retired.

Table 25-1. Explanation of DACS II and DACS II ISX Alarm Message Elements (Continued)

Heading	Description
Type	Facility Alarm Type. For CEPT NPCs; for example, the Summary is PBA: A Primary AIS; for example, Alarm indication signal received in all 32 time slots. B BER: bit error rate detected in received signal. C LCMA: Loss of CRC4 multiframe alignment in TS0. E RBER: remote bit error rate detected in Bit 4 of TS0. F LOF PBF: Loss of frame primary block failure. G FLCMA; I RAIS: remote AIS detected in Bit 4 of TS0. L LMA: Loss of multiframe alignment in CAS Time Slot 16. M R16: RAI received in Bit 6 of Frame 0 of TS16. P PFOOF: R LOS PBF: Loss of signal type primary block failure, or primary block alarm (PBA). S SFI: synchronization failure indication in Bit 5 of TS0. V A16: AIS received in CAS time slot 16. X EER: excessive error rate. Y RAI: Remote alarm indication received in Bit 3 of NFW of TS0.
NPC	The NPC Number of the NPC that is the subject of the message. The NPC number is displayed in hierarchical format if the DACS is provisioned for hierarchical and displayed as 4-digit extended if provisioned for extended 3 or extended 4. (NPCs on a DACS II ISX are always displayed as 4-digit extended.) See Chapter 2, "Frame Administration."
Threshold	See Table 23-2.
Unit	The unit number of the alarming facility.
Side	The side number of the alarming facility.
Sub	The subunit number of the alarming facility.
FLD1,FLD2	See Table 23-3 and Table 23-4.

Table 25-2. Alarm Thresholds

Threshold	Description
BER	Bit error rate.
C0FA	Change of frame alignment error.
CRC15MIN	15-minute CRC block errors.
CRCDAILY	Daily CRC block errors.
CSS15MIN	15-minute controlled slip seconds.
CSSDAILY	Daily controlled slip seconds.
CV15MIN	15-minute coding violations.
CVDAILY	Daily coding violations.
DM1H	Degraded minutes after 1 hour.
DM24H	Degraded minutes after 24 hours.
ERS15M	Errored seconds after 15 minutes.
ERS24H	Errored seconds after 24 hours.
ES15MIN	15-minute errored seconds.
ESDAILY	Daily errored seconds
FEBE15MIN	15-minute far -end block errors.
FEBEDAILY	Daily far-end block errors
FES15MIN	15-minute far-end seconds.
FESDAILY	Daily far-end errored seconds.
FRER15MIN	15-minute framing errors.
FRERDAILY	Daily frame errors.
FSESDAILY	Daily far-end severely errored seconds.
FUAS15MIN	15-minute far-end unavailable seconds.
FUASDAILY	Daily far-end unavailable seconds.
IDLE SIG	Idle signal.
LOS	Loss of signal.
MER15MIN	15-minute multiframe errors.
MERDAILY	Daily multiframe errors.
OFS15MIN	15-minute out of frame seconds.
OFSDAILY	Daily out of frame seconds.
OOF	Out of frame.
SAFE	Shelf alarm far end.
SANE	Shelf alarm near end.
SERS15M	Severe errored seconds after 15 minutes.
SERS24H	Severe errored seconds after 24 hours.
SES15MIN	15-minute severely errored seconds.
SESDAILY	Daily severe errored seconds.
SLIP	Slip count.
SLIPS15M	Slip count after 15 minutes.
SLIPS24H	Slip count after 24 hours.
UAS15MIN	15-minute unavailable seconds.
UASDAILY	Daily unavailable seconds.
UATC15MIN	15-minute unavailable time count.
UATCDAILY	Daily unavailable time count.
US15M	Unavailable seconds after 15 minutes.
US24H	Unavailable seconds after 24 hours.

Fault Management - DND Forms (Continued)

Power Failure Messages

The POWER FAIL Message

For a POWER FAIL message, Fld1 and Fld2 contain field1 and field2 reported in the error status register. These fields are described in the *DACS II Command and Message Manual* of the appropriate release, for message number 0.01301.

Each field consists of four hexadecimal digits that are 16-bit masks. A bit set to 1 indicates a power error and the source of the error. The maps of bit position into power source are as follows.

For field1 (Unit):

Table 25-3. Error Status Register *field1* Bit Mask

Bit	Failed Power Supply	Bit	Failed Power Supply
15-08	Not used	03	CCN/ECCN 1 PWR failure
07	MC 1, 484GA	02	CCN/ECCN 0 PWR failure
06	MC 0, SM565	01	SYNC 1 PWR failure
05	MC 1, 484GA power converter in MC	00	SYNC 0 PWR failure
04	MC 0, SM565 power converter in MC		

For field2:

Table 25-4. Error Status Register *field2* Bit Mask

Bit	Failed Power Supply	Bit	Failed Power Supply
15	Unit 16	07	Unit 8
14	Unit 15	06	Unit 7
13	Unit 14	05	Unit 6
12	Unit 13	04	Unit 5
11	Unit 12	03	Unit 4
10	Unit 11	02	Unit 3
09	Unit 10	01	Unit 2
08	Unit 9	00	Unit 1

(Continued on next page)

Fault Management - DND Forms (Continued)

Power Failure Messages (Continued)

The ISX_PWR FAIL Message

For an ISX_PWR FAIL message, Fld1 and Fld2 contain field1 and field2 reported in the error status register. Each field consists of two hexadecimal digits. Expand the two hex digits to 8 bits before comparing to the table below.

A bit set to 1 indicates a power error or a unit not installed. For example, if field1 contains C0, then the 8-bit expansion is 11000000, indicating that main shelf PU3 and PU2 are not installed.

The maps of bit position into units are as follows.

For field1:

Table 25-5. Error Status Register *field1* Bit Mask

Bit	Unit
07-03	Reserved.
02	Main shelf PU3 not installed.
01	Main shelf PU2 not installed.
00	Main shelf PU1 not installed.

For field2:

Table 25-6. Error Status Register *field2* Bit Mask

Bit	Unit
07	Expansion shelf PU4 not installed.
06	Expansion shelf PU5 not installed.
05	Main shelf feeder A or fuse failure to PU1, PU2 or PU3.
04	Main shelf feeder B or fuse failure to PU1, PU2 or PU3.
03	Main shelf +5 V output failure on PU1, PU2 or PU3.
02	Expansion shelf feeder A or fuse failure to PU4 or PU5.
01	Expansion shelf feeder B or fuse failure to PU4 or PU5.
00	Expansion shelf +5 V output failure on PU4 or PU5.

ALARM SURVEILLANCE Display

Overview

Alarm Surveillance provides a single display of all active alarms that are contained in the DND database for all managed network elements. The display is updated in "near" real time, that is, as new alarms are recorded by the DND, the alarms are added to the display, and as alarms are retired they are removed from the display, without any user intervention required.

The feature is available from the Graphical User Interface only and each GUI user can view their own alarm surveillance display.

The Alarm display (and database information) may also be updated by certain DND actions:

- Alarm SYNC (DND/DACS)
- NPC provisioning that updates alarm information
- NE provisioning actions.

Only events that are classified as alarms are shown in this report. These are events that have clear start and end conditions. For example DS1 PM events on NAS NPCs are not included since they have no clear indicator, however, E1 PM events on CEPT NPCs are included since they have clear begin and end indicators on the DACS.

Total Number of Displayed Alarms

The total number of alarms on the system is displayed at the bottom of the display, as well as the number of alarms that match the selection criteria, and the number of alarms that are displayed. Up to 200 alarm records can be displayed in the Alarm Surveillance window at a time. If more than 200 alarms match the selection criteria, only the first 200 will be displayed, according to the sort criteria.

Alarm Display Updates

The Alarm display is updated approximately every 15 seconds, if necessary.

**NOTE:**

The actual time may vary, depending on other processing activity on the system.

ALARM SURVEILLANCE Display (Continued)

Changing the Display Criteria

Use the [Change Selection and Sort Criteria](#) button to change the criteria used to display alarms and to change the manner that the alarms are sorted. The Alarm Surveillance display shows all active alarms according to the Selection and Sort criteria. The Selection/Sort criteria by which the display report was generated is shown in the display. The display may be blank if no alarms match the selection and sort criteria.

Acknowledging Alarm Reports

Individual alarm reports can be "acknowledged" by the user who is logged in. This acknowledgment contains the login name of the user, the date and time of the acknowledgment, and a 77-character free format remarks field to record comments by the user. This acknowledgment information is also contained in the alarm surveillance display. Alarms can also be "reacknowledged" (edited), and "unacknowledged" by the same user, identified by the login name.

Adjusting the Field Widths

The width of fields in the alarm display can be stretched if some of the field contents do not fit in the default width of the display. Grab the line and left-click-drag the column at the column heading.

ALARM SURVEILLANCE Display (Continued)

Sample Displays

Samples of the ALARM SURVEILLANCE display are shown in Figures 25-1 and 25-2. To obtain the ALARM SURVEILLANCE display, select *ALARM SURVEILLANCE* from the ALARMS menu.



Figure 25-1. ALARM SURVEILLANCE Display - DACS II Related Alarms

(Continued on next page)

ALARM SURVEILLANCE Display (Continued)

Sample Displays, Continued

The screenshot shows the 'Alarm Surveillance' window with the 'dnd' logo. The 'Alarm Selection Criteria' section includes search filters for Date and Time, Alarm Category, NE Type, Acknowledgement Status, Login Name, and Site Name, all set to 'UNRESTRICTED'. An 'Alarm level' indicator shows four colored dots (red, yellow, green, blue). A 'Change Selection and Sort Criteria...' button is present.

3 ▼ Level	1 ▼ Date	2 ▼ Time	5 ▼ Site	Entity	Type	4 ▼ Acknowledge	Remarks
●	22Dec99	13:44:21	Argentina-	LINK	ALM	-	-
●	22Dec99	13:44:20	Malaysia-A	LINK	ALM	-	-
●	22Dec99	13:44:20	Spain-AX11	LINK	ALM	-	-
●	22Dec99	13:44:20	Washington	LINK	ALM	-	-
●	21Dec99	15:00:41	Argentina-	P01002	TINearEndL	-	-
●	21Dec99	15:00:41	Spain-AX11	P01002	TINearEndL	-	-
●	21Dec99	15:00:39	Malaysia-A	P01002	TINearEndL	-	-
●	21Dec99	15:00:39	Washington	P01002	TINearEndL	-	-
●	21Dec99	15:00:37	Argentina-	P01001	TINearEndL	-	-
●	21Dec99	15:00:37	Spain-AX11	P01001	TINearEndL	-	-
●	21Dec99	15:00:35	Malaysia-A	P01001	TINearEndL	-	-
●	21Dec99	15:00:35	Washington	P01001	TINearEndL	-	-

Total alarms: 71 Total matching: 12 Total shown: 12 Last change: 28 Dec 99 14:42:44

Buttons: Acknowledgement ✓, Close ✗

Unsigned Java Applet Window

Figure 25-2. ALARM SURVEILLANCE Display - DACS II AX Related Alarms

ALARM SURVEILLANCE Display (Continued)

Field Descriptions The field values for the ALARM SURVEILLANCE display are described in Table 25-7.

Table 25-7. Field Descriptions for the ALARM SURVEILLANCE Display

Field	Description
Alarm Selection Criteria	The current Alarm Selection Criteria are displayed for reference in the topmost group box of the Alarm Surveillance window. These criteria can only be changed in the ALARM SURVEILLANCE SELECTION AND SORT CONTROL form, which is obtained by clicking on the <u>Change Selection and Sort Criteria</u> button in the same group box. Each field shows a specific selection criteria as follows: ■ Date and Time Search Information: the current selection range for date, time, or both. If neither date nor time restriction is in effect, the value is "UNRESTRICTED." ■ Alarm Severity: The alarm levels allowed in the current display, shown as one or more colored "LED's." When all four LED's are shown, magenta through blue, the Alarm Severity criteria is unrestricted. ■ Alarm Category: lists all alarm categories allowed in the current display, or "UNRESTRICTED" when all are allowed. ■ NE Type: lists all NE types allowed in the current display, or "UNRESTRICTED" when all are allowed. ■ Acknowledgment Status: shows if the current display is limited to either "Acknowledged" or "Unacknowledged" alarms, or "UNRESTRICTED" when either acknowledgment status is allowed. ■ Login Name: shows the login name associated with all alarms in the current display, or "UNRESTRICTED" when no login name criteria was specified. ■ Site Name: shows the site name associated with all alarms in the current display, or "UNRESTRICTED" when no site name criteria was specified.

Table 25-7. Field Descriptions for the ALARM SURVEILLANCE Display (Continued)

Field	Description
Alarm Sort Criteria	The current Alarm Sort Criteria are displayed for reference in the corresponding column headings of the alarms display. For each sort category, the sort priority and sort direction are shown immediately to the left in light green, where a down arrow indicates the default sort direction and an up arrow indicates the reverse.
Site	The Site: field indicates the name of the Network Element where the alarm occurred.
Date	The Date: field indicates the date/time the alarm occurred. The format of this string is specified using the DATE_FORMAT environmental variable. See Chapter 2, <i>Getting Started</i> , for more information.
Entity	The Entity: field indicates the equipment associated with the alarm being displayed: ■ NPC number: For DACS II and DACS II ISX PBA/CGA and Performance Monitoring alarms this field contains the NPC number. The NPC number is displayed in the format specified by the NPC Addressing field on the NE PROVISIONING form. ■ Common Equipment: For DACS II and DACS II ISX Common Equipment alarms this field contains a string representing the equipment in alarm. See Table for examples of some of the common equipment entity types. ■ SNMP Slot/Port: For DACS II AX, AAC, and IMACS this field shows the slot or port in alarm. For a description of the SNMP slot/port names refer to the appropriate mib definitions: — DACS II AX alarms - DACS II AX SMC-MIB. Release 1.0. — AAC/IMACS alarms - PREMISYS-COMMON-MIB, Version #3

**Table 25-7. Field Descriptions for the ALARM SURVEILLANCE Display
(Continued)**

Field	Description
Type	The Type field indicates the type of alarm being displayed (where applicable). The alarm type strings fall into the following categories: ■ Primary Block Alarm/Carrier Group Alarm (PBA/CGA): These alarms apply to the DACS II and the DACS II ISX. For a description of these alarm types refer to Table 25-1. ■ Performance Monitoring: These alarms apply to the DACS II and the DACS II ISX. For a description of these alarm types refer to Table 25-2. ■ Equipment Failure: These alarms apply to the DACS II and the DACS II ISX. This field is blank for all equipment failure alarms with the exception of the NE summary where the field is set to 'Alarm Summary'. ■ Link Failure: Indicates Network Elements with communication failures. ■ Other: Alarms that are not classified as PBA/CGA, PM, or Equipment Failure.
Severity	The Sev field contains a colored LED representing the severity of the alarm displayed on the given line. The colored LEDs represent the following: ■ Magenta - Critical Alarm ■ Red - Major Alarm ■ Yellow - Minor Alarm ■ Blue - Informational Alarm Most lines contain a single LED with the exception of the NE summary line for DACS type nodes. This line may contain multiple LEDs that represent a summary of the alarms severities active on the DND node. For example, if a critical alarm and major alarm exists on the DND DACS, both the magenta and red LEDs would appear in the alarm severity field.

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ALARM SURVEILLANCE Display (Continued)

Field Descriptions, Continued

Table 25-8. Entity Examples

Entity	Description
MEMB	memory B failure
UNIT-11-DS3-2	DS3-2 failure on unit 11
1SYNC	sync failure on side 1
UNIT-5-0FC-1	format converter 1 failure on unit 5,side 1

ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL Form

Overview

The ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL form is used to:

- Acknowledge an alarm. If there is no acknowledgment information in the DND database, you can acknowledge an alarm. Acknowledgment of an alarm will cause the alarm information to contain your login name, the date of the acknowledgment, and a 77 character remarks field in which you can enter information regarding this alarm.
- Unacknowledge an alarm. If you have previously acknowledged an alarm, then you may remove that acknowledgment. You can only unacknowledge alarms that are acknowledged by your login. Another user logged in under a different login name cannot unacknowledge an alarm.
- Reacknowledge (re-edit) an alarm. This is used to update your remarks information. The date and time will also reflect the date/time of your most recent (re)acknowledgment.

When the alarm is cleared, the record of the alarm is removed from the display and all record of the acknowledgment is also removed.

Sample Form

A sample of the ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL form is shown in Figure 25-3.

There are two ways to get to the ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL form:

- Double-click on the alarm.
 - Select an alarm by single-clicking on the alarm; the alarm will be backlit. Then push Acknowledgment on the ALARM SURVEILLANCE display.
-

(Continued on next page)

ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL Form (Continued)

Sample Form, Continued

Figure 25-3 is a sample Alarm Surveillance Acknowledgment Control Form.

Click **Acknowledge** to acknowledge an alarm. →



The screenshot shows a Java applet window titled "ALARM SURVEILLANCE ACKNOWLEDGEMENT CONTROL". Inside the window, there is a "dnd" logo in blue. To the right of the logo is a red square icon followed by the text "Alarms" and a small downward arrow. Below this, there is a "Login Name:" label followed by a text box containing "dacsadm". Underneath is a "Remarks:" label followed by a large empty text area. At the bottom of the main content area are three buttons: "Acknowledge" (highlighted in blue), "Unacknowledge", and "Close" (with a red X icon). The bottom of the window has a status bar that reads "Unsigned Java Applet Window".

Figure 25-3. ALARM SURVEILLANCE ACKNOWLEDGEMENT CONTROL Form

ALARM SURVEILLANCE ACKNOWLEDGEMENT CONTROL Form (Continued)

Field Descriptions The field values for the ALARM SURVEILLANCE ACKNOWLEDGMENT CONTROL form are described in Table 25-9.

**Table 25-9. Field Descriptions for the ALARM SURVEILLANCE
ACKNOWLEDGEMENT CONTROL Form**

Field	Descriptions
Login Name	(Read-only) The name of the user currently logged in to the DND.
Remarks	(Text field) Comments entered by the user who is acknowledging the alarm. This field is 77 characters wide.

ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form

Overview

The ALARM SURVEILLANCE SELECTION AND SORT CONTROL form is used to set filters to determine which alarms are displayed and to specify how the alarms are sorted. The values only become effective when you push Set Criteria.

Default Buttons

The Default Selection and Default Sort buttons reset the selection or sort values to the default settings. See Table 25-10 for descriptions of the defaults.

Default Selections

When the ALARM SURVEILLANCE form is closed, the Sort and Selection criteria set by a user is not saved. When the ALARM SURVEILLANCE form is opened again, the default selection and sort criteria is set.

ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form (Continued)

Sample Form

A sample of the ALARM SURVEILLANCE SELECTION AND SORT CONTROL form is shown in Figure 25-4. You can get to this form by pressing Change Selection and Sort Criteria on the ALARM SURVEILLANCE display.

Click to return the Selection Criteria to the defaults.

Click to return the Sort Criteria to the defaults.

Click to save the Selection and Sort Criteria.

Figure 25-4. ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form

Alarm Surveillance Selection and Sort Control Form (Continued)

Field Descriptions The field values for the ALARM SURVEILLANCE SELECTION AND SORT CONTROL form are described in Table 25-10.

Table 25-10. Field Descriptions for the ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form

Field	Descriptions
Date	(Combo Boxes) Day:, Month:, and Year: options. Each of these 3 fields collectively specifies the DATE. The default setting is an asterick (*) in each field, which means the display will not restrict the report by date. ⇒ NOTE: You cannot specify one or two of the date fields. For example, for Date you must specify a day and a month and a year.
Time	(Combo Boxes) Hour:, Minutes:, and Second: options. Each of these 3 fields collectively specifies the TIME. The default setting is an asterick (*) in each field, which means the display will not restrict the report by time. ⇒ NOTE: You cannot specify one or two of the time fields. For example, for Time you must specify an hour, and a minute and a second.
Range	(Radio Buttons) There is a range selection for time and one for date. It is possible to choose: ■ = equal to the date or time specification ■ < before this date or time specification ■ > after this date or time specification
Alarm Level or Intervention Level	(Radio Buttons) Specifies whether alarms are displayed and sorted by Alarm Level or Intervention Level. The Alarm Severity and Intervention Level fields described below will only be active when the corresponding radio button has been selected.

Table 25-10. Field Descriptions for the ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form (Continued)

Field	Descriptions
Alarm Severity	(Checkboxes) When selected, alarms of that severity will be shown in the ALARM SURVEILLANCE display. The default setting is that all alarm severities are checked (unrestricted). ■ Critical (CR) ■ Major (MJ) ■ Minor (MN) ■ Informational (IN)
Intervention Level	(Checkboxes) When selected, alarms of that intervention level will be shown in the ALARM SURVEILLANCE display. The default setting is that all intervention levels are checked (unrestricted). ■ Immediate Maintenance Action (IMA) ■ Deferred Maintenance Action (DMA)
Alarm Type	(Checkboxes) When selected, alarms of that type will be shown in the ALARM SURVEILLANCE display. The default setting is that all alarm types are checked. (unrestricted). ■ PBA/CGA ■ Performance Monitoring ■ Equipment Failure (Includes the NE alarm type) ■ Link Failure ■ Other
NE Type	(Checkboxes) When selected, alarms originating on that network element type will be shown in the ALARM SURVEILLANCE display. The default is all NE type (unrestricted). ■ DACS II ■ DACS II ISX ■ DACS II AX ■ AAC ■ IMACS ■ OTHER

Table 25-10. Field Descriptions for the ALARM SURVEILLANCE SELECTION AND SORT CONTROL Form (Continued)

Field	Descriptions
Sort Criteria	Alarms can be sorted by any of the following criteria. The following lists the sort criteria in the default order. In each case, it is possible to reverse the sort.) ■ Date (default is newest to oldest) ■ Time (default is newest to oldest) ■ Severity (default is highest to lowest)  NOTE: A "blank" login name will have the lowest precedence, thus blank fields in the acknowledgment status column will appear first when A-Z ordering is selected. ■ Sitename (default is A-Z)
Acknowledgment Status	(Radio Buttons) When selected, alarms of this acknowledgment status will be shown in the ALARM SURVEILLANCE display. The default is both acknowledged and unacknowledged. ■ Acknowledged ■ Unacknowledged
Login Name	(Text field) Valid only when the Acknowledgment Status is Acknowledged, this field is the login name of the user who acknowledged the alarm.
Site Name	(Combo Box) Alarms originating at a single network element with this site name will be shown in the ALARM SURVEILLANCE display. The default is * (all sites).

NE Summary Report

Description

The NE SUMMARY reports are generated by clicking on the new alarm (red) arrow located either:

- Next to the site name in the NE SUMMARY window
- Next to the site icon in the Network Map.

The NE SUMMARY window appears when the **Alarms...** button is selected from either the DND Task Bar or from any DND GUI form/window.

The report only displays new alarms that have occurred since:

- You have logged in
- The previous display of a NE SUMMARY report.

When a new alarm occurs in the DACS network, a red arrow appears on the **Alarms...** button on the DND Task Bar, as shown in Figure 25-5. The color of the Alarm Status Indicator (ASI) represents the highest alarm severity currently in the DACS network.

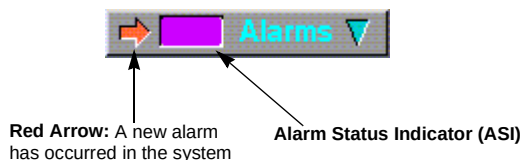
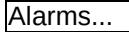
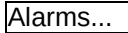


Figure 25-5. Alarms Button

NE Summary Report (Continued)

NE SUMMARY Window

When  is clicked, the Alarms menu appears. When you select **NE Summary...**, the NE SUMMARY window appears on the screen displaying icons for each Network Element in the user's partition. These icons behave similarly to the  button. Each NE SUMMARY icon displays the Network Element name and alarm color, indicating the highest alarm severity on the particular Network Element. The icons are arranged according to severity (highest severity sites appear at the top) and by alphanumeric order.

NE SUMMARY window icons with the red arrow beside it indicate a new alarm has occurred on the particular Network Element. When the red arrow is clicked, it disappears and the NE SUMMARY report (similar to the ALARM LOG Report) is displayed in a separate Netscape window.

Once the red arrow for an icon is clicked, it cannot be clicked again until a new alarm occurs on the Network Element and the red arrow reappears next to the icon.

NE Summary Report (Continued)

Sample NE SUMMARY Window

Figure 25-6 displays a sample NE SUMMARY window for a large network. The NE SUMMARY icons without red arrows to the left of them have no new alarms; NE SUMMARY reports cannot be generated for those sites.

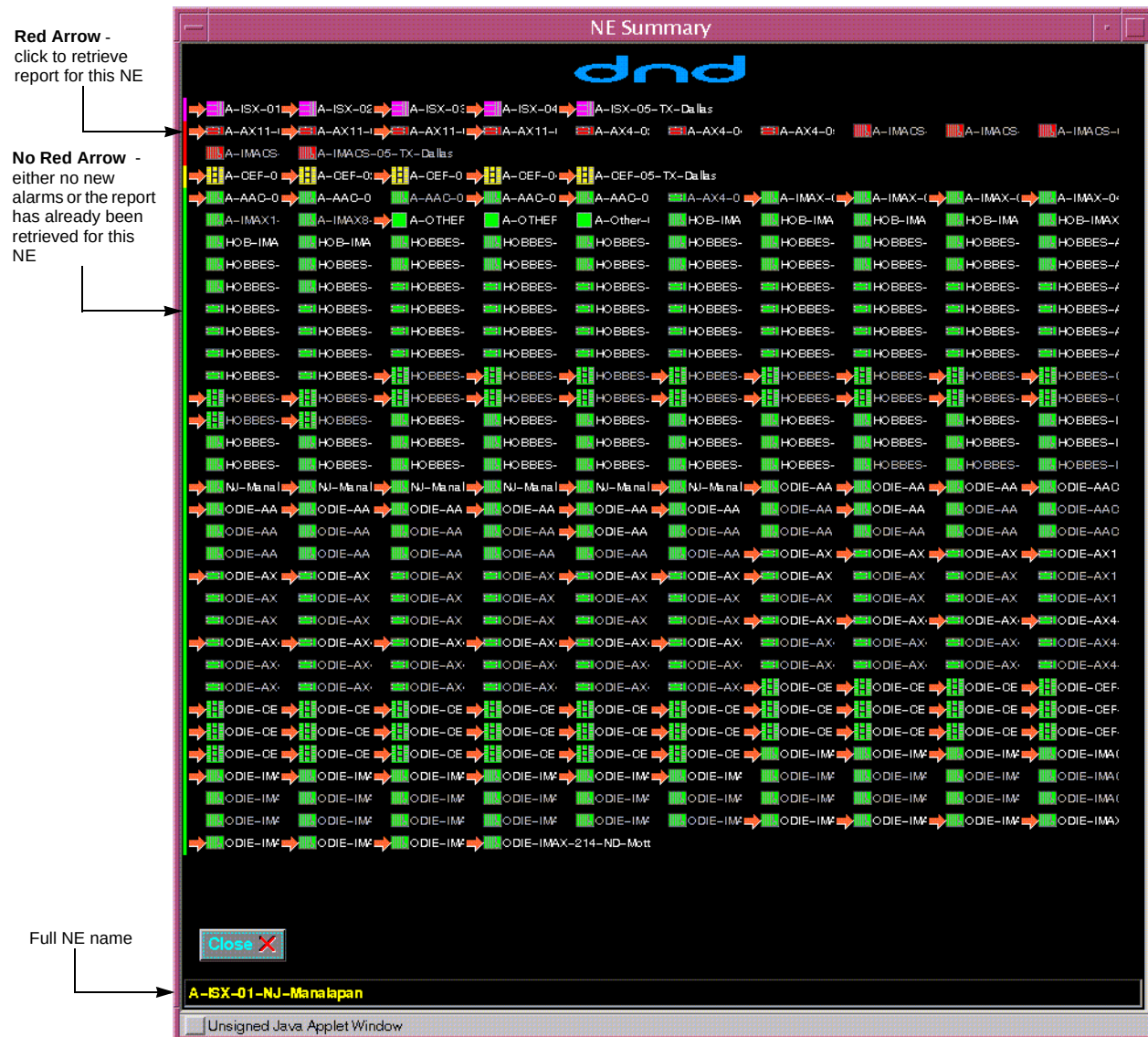


Figure 25-6. Sample NE SUMMARY Window

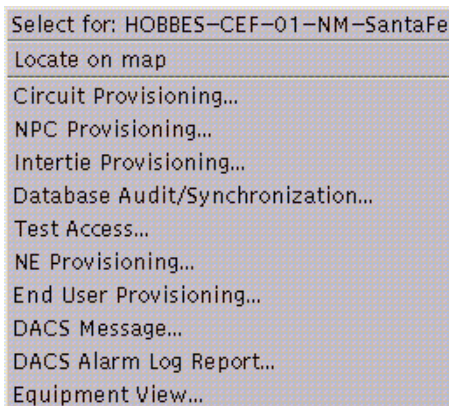
NE Summary Report (Continued)

Truncated Site Names

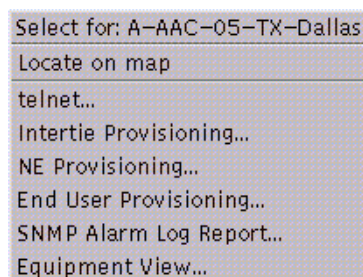
For larger networks with many sites, the entire site name will be truncated to fit all of the icons in the NE SUMMARY window. To see the entire name of the site, slide the mouse pointer over the icon, and the entire site name will appear at the bottom of the NE SUMMARY window.

NE SUMMARY Icon Menus

Similar to the Network Map, right-clicking on a NE SUMMARY icon will display a menu of provisioning form options. When provisioning/report option is selected, the respective form will appear with the known information about the selected Network Element is pre-populated. Figure 25-7 displays the options available for DACS icons and SNMP icons in the NE SUMMARY window.



NE SUMMARY DACS Menu



NE SUMMARY SNMP Menu

Figure 25-7. NE SUMMARY Icon Menus

NE Summary Report (Continued)

Network Map Locator

As network maps grow and more groups are created, it becomes difficult to locate specific sites on the map. Selecting the *LOCATE ON MAP* option from the NE SUMMARY icon menu will display a target on the Network Map around the group in which the site is located. The locator will help you find the site selected from the NE SUMMARY window as you zoom and expand the groups and sub-groups within the locator target. The locator also appears on the zoom mini-map. Figure 25-8 illustrates the locator around a site in a zoomed Network Map.



Figure 25-8. Network Map Locator

Alarm Severity and Intervention Level

Alarm Severity - Overview

The Alarm Severity feature allows users to change the severity level of PA-, PB-, and PC-type NPC facility and associated shelf alarms to one of the following:

- PMA-Critical (Prompt Maintenance Action CRITICAL Alarm Severity)
- PMA-Major (Prompt Maintenance Action MAJOR Alarm Severity)
- DMA-Minor - (Deferred Maintenance Action MINOR Alarm Severity)
- Maintenance Information (MESSAGE INFORMATION Alarm Severity)

This allows DACS II users the flexibility of customizing their alarm severities. When the Alarm Severity feature is on, the Alarm Surveillance display and the NE Summary Report will indicate the assigned severities.

Setting the Alarm Severity

See Chapter 5, NE Provisioning for details on turning on the Alarm Severity feature while creating a DACS.

Intervention Level

With the Intervention Level Setting feature, alarms for individual NPCs, TLIs, Synchronizer or Cross Connects can be escalated or de-escalated by the DACS administrator. See also Chapter 5, NE Provisioning for details on turning on the Alarm Intervention feature.

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Background

Introduction

The DND supports the following interfaces:

- **SNMP Northbound Interface**

This interface provides SNMP trap reporting capability for DACS II and DACS II ISX alarms and events. It also provides SNMP retrieval of the following:

- All equipment provisioned on the DND (DACS II, DACS II ISX, DACS II AX, AAC, IMACS, and OTHER SNMP based equipment.)
- DACS II and DACS II ISX NPC and common equipment alarms.
- DACS II and DACS II ISX alarm logs as well as NPC and circuit provisioning events
- DACS II and DACS II ISX NPC and circuit provisioning information.

- **Northbound G2 Serial Alarm Interface**

There is a message interface to the DND for reporting DACS II and DACS II ISX alarms. This interface concentrates and reports DACS alarms to an Alarm Management system for further processing.

- **ITM-NM/XMC Management Interface**

The DND has a control interface to the ITM-NM/XMC (a Lucent Technologies Management System). This control interface allows the ITM-NM/XMC to provide order based end-to-end circuit management on DACS II and DACS II ISX using the DND as an interface to the DACS.

- **Alarm Messages**

The DND is able to redirect alarm messages from the DACS to a serial port on the DND workstation. This can be one of the default devices on the workstation (ttya or ttyb) or to a port on the serial expansion unit. The DND will redirect the DACS messages from the DACS that it recognizes as being alarm messages to this serial port.

- **BT Interface**

The DND manages a proprietary management interface for service provisioning and test access. This interface is a binary interface which uses Remote Procedure Calls on a TCP/IP connection as its method for receiving commands and sending responses.

Background (Continued)

Objectives

This chapter provides background information to help you perform the following:

1. Provision the SNMP Northbound Interface
-

Related tasks

For related tasks, see the following General Tasks:

DND GUI:

- Provisioning the SNMP Northbound Interface GT 26.1G
-

Related information

For related information see the *DACS II and DACS II ISX Operations and Maintenance Manuals*.

SNMP Northbound Interface

Description

The DND supports SNMP retrieval of DACS provisioning and alarm information and trap monitoring capabilities to the DACS and DACS II ISX equipment managed by the DND. An SNMP trap corresponds to a DACS II autonomous event.

SNMP MIBs

The DND supports three enterprise MIBs and part of the MIB-II specification:

- **DND MIB** - The DND MIB allows an administrator to tell the DND where to report SNMP traps, what community names to use in those traps, and what trap types are filtered out for each management IP address. All of the variables in this MIB can also be accessed from the DND GUI by the DND administrator.
- **DACS MIB** - The DACS MIB contains the current provisioning and alarm information on all DACS II and DACS II ISX equipment managed by the DND. The SNMP manager can access all DACS, NPC, and Circuit provisioning as well as the current NPC and Common Equipment alarms.
- **EVENT MIB** - The EVENT MIB describes the SNMP traps that are sent by the DND and the corresponding event logs that can be retrieved. Certain events that occur at the DND can generate one or more SNMP traps. This MIB describes the different types of traps that correspond to different kinds of events that occur at the DND and explains under what conditions the traps are generated by the DND.
- **MIB-II** - DND supports the system groups and interface groups of MIB-II. The interface group contains all of the NEs provisioned in the DND.

See the DND MIBs documentation for additional details.

SNMP Northbound Interface (continued)

SNMP Communities

The DND supports SNMP requests, although all autonomous events are sent to the SNMP Northbound manager via SNMP traps. The manager must supply the correct community name to have read or write access to the MIBs.

- **Administrator** - The administrator community has the highest privilege set. It can access all of the above MIBs. Additionally, it can modify the administrator community and operator community names. The DND administrator can also modify the administrator community and operator community names through the DND GUI.



NOTE:

The SNMP administrator community has no relation to the DND administrator login.

- **Operator** - The operator community has the second highest privilege set. It has all the privileges of the administrator community, except that it can not read or modify the administrator community and operator community names.
- **Public** - The public community has the least access. It can read the MIB-II variables supported by the DND. The public community name is always *public*, and cannot be changed.

SNMP Managers

The DND supports up to four SNMP managers, each with an associated IP address. The following can be configured for each manager:

- The community name included in traps sent to that manager
 - The traps that are not sent to the manager
-

SNMP Northbound Interface (continued)

SNMP Logs

The DND logs each trap sent to the SNMP Northbound manager. Each trap has an associated trap sequence number, which starts at 1 and is incremented with each new trap. This trap sequence number can be accessed via an SNMP GET request or through the DND GUI. The SNMP manager can determine if any traps have not been received by examining the trap sequence number in each trap and by periodically checking the trap sequence number via SNMP GET.

The SNMP logs can be reset by the SNMP manager or through the DND GUI. Resetting a log will set the next sequential trap number to 1.

SNMP Northbound Provisioning Form

Sample Forms

Figure 26-1 display a sample SNMP Northbound Provisioning Form.

Enter the Administrator and Operator community access strings

Configure the SNMP first Northbound Manager. Repeat for managers 2-4 if necessary

Access community strings

Administrator community admin

Operator community operator

SNMP Northbound Managers

Manager 1

IP address 0.0.0.0

Trap community public

Exclude traps

Clear Alarms

Informational Alarms

Minor Alarms

Major Alarms

Next sequence 1

Reset logs ☐

Manager 2

IP address 0.0.0.0

Trap community public

Exclude traps

Clear Alarms

Informational Alarms

Minor Alarms

Major Alarms

Next sequence 1

Reset logs ☐

Manager 3

IP address 0.0.0.0

Trap community public

Exclude traps

Clear Alarms

Informational Alarms

Minor Alarms

Major Alarms

Next sequence 1

Reset logs ☐

Manager 4

IP address 0.0.0.0

Trap community public

Exclude traps

Clear Alarms

Informational Alarms

Minor Alarms

Major Alarms

Next sequence 1

Reset logs ☐

Back Execute Restart Close

Unsigned Java Applet Window

Figure 26-1. DND GUI: SNMP Northbound Provisioning Form

SNMP Northbound Provisioning Form

Field Descriptions The field values for the SNMP NORTHBOUND PROVISIONING form are described in Table 26-1.

Table 26-1. Field Descriptions for the SNMP Northbound Provisioning Form

Field	Descriptions
Administrator community	(Text field) The access string for the administrator community.
Operator community	(Text field) The access string for the operator community.
IP address	The IP address of the SNMP manager. When this value is 0.0.0.0, that manager is ignored.
trap community	(Text field) The community to whom traps will be sent. The default is public .
Exclude traps	(Combo box) Select events that you do not want to be sent to the SNMP manager.
Next sequence	(Read-only field) Displays the next number that will be added to a trap sent to that SNMP manager.
Reset logs	(Checkbox) Select Reset logs to delete the trap logs. Resetting the logs will set the Next Sequence number back to 1.

Northbound G2 Serial Alarm Interface

Description

There is a message interface to the DND for reporting DACS II and DACS II ISX alarms. This interface concentrates and reports DACS alarms to an Alarm Management system for further processing. These alarm messages apply only to the DACS II and DACS II ISX systems, and not to the DACS II AX system or any of the other SNMP based elements. These alarms are ASCII based messages and contain alarm source, alarm type, and alarm severity information for all alarms that apply to the DACS II and DACS II ISX systems that are controlled by the DND. The format of the message is G2 (name/value pairs) and can be routed over any of the DND serial port interfaces.

Further Information

For detailed information about this interface, see the *DND G2 Interface Description, Version 1.0*. To obtain this document, contact Lucent Customer Technical Support Organization. Further information on the installation of the interface is contained in the *DACS II Network Director (DND) R 2.0 Installation Manual*. See Chapter 2, *Getting Started* for information on the environment variables which provide control of this interface.

ITM-NM/XMC Management Interface

Description

The DND has a control interface to the ITM-NM/XMC (a Lucent Technologies Management System). This control interface allows the ITM-NM/XMC to provide order based end-to-end circuit management on DACS II and DACS II ISX using the DND as an interface to the DACS. At the same time, full functionality of the DND remains available while the ITM-NM/XMC interface is enabled. These ITM-NM/XMC services apply to the DACS II and DACS II ISX systems, and not to the DACS II AX system, or any other SNMP based elements.

Enabling the Interface

This interface is an X.25 based interface and is enabled by purchasing the ITM-NM/XMC option which enables the feature on the DND feature diskette.

Further Information

Further information on the installation and start-up of the management interface is contained in the *DACS II Network Director (DND) R 2.0 Installation Manual*.

Alarm Messages

Description	The DND is able to redirect alarm messages from the DACS to a serial port on the DND workstation. This can be one of the default devices on the workstation (ttya or ttyb) or to a port on the serial expansion unit. The DND will redirect the DACS messages from the DACS that it recognizes as being alarm messages to this serial port. The messages are ASCII messages as received from the DACS. Minimal processing of the DACS message is performed to remove extraneous line feeds and control characters. Otherwise, the message is presented as it is received from the DACS. All alarm messages from the DACS are redirected to this serial port when this feature is enabled. This feature only applies to DACS II and DACS II ISX network elements.
Setup and Control	This interface is setup and controlled by the ALARM_DEV and the ALARM_DEV_SPEED environment variables defined in the user_env file. The ALARM_DEV_SPEED identifies which of the serial ports on the DND is to be used. There are no other controls available to this feature. See Chapter 2, <i>Getting Started</i> .
Performance Considerations	Care should be taken when enabling the alarm device. The highest possible speed should be used, since a prolonged period of alarm messages from the DACS which are to be sent to the alarm device which are accumulated may cause performance slow down on the DND. The alarm device should never be enabled unless there is an active device (terminal or computer) on the serial port which is identified as the alarm device.

BT Interface

Description

The DND manages a proprietary management interface for service provisioning and test access. This interface is a binary interface which uses Remote Procedure Calls on a TCP/IP connection as its method for receiving commands and sending responses. Basic commands are made available for NPC provisioning, circuit provisioning, and test access. This interface is currently used by British Telecom for their own management.

**Further
Information**

Further information or information on how to obtain the interface agreement specifications, contact your Lucent Technologies representative.

Northbound View

Description	The DND can be configured to show a modified view when used by a northbound interface. To use the modified interface, edit the DNDBrowser.html file and set the value of the Northbound parameter to "y".
Restrictions	The following menu items are not available from the Provisioning Menu when the SNMP Northbound view is used: ■ Intertie Provisioning ■ User Administration

Northbound View (Continued)

Sample GUI

Figure 18-2 displays a sample view of the Northbound GUI.

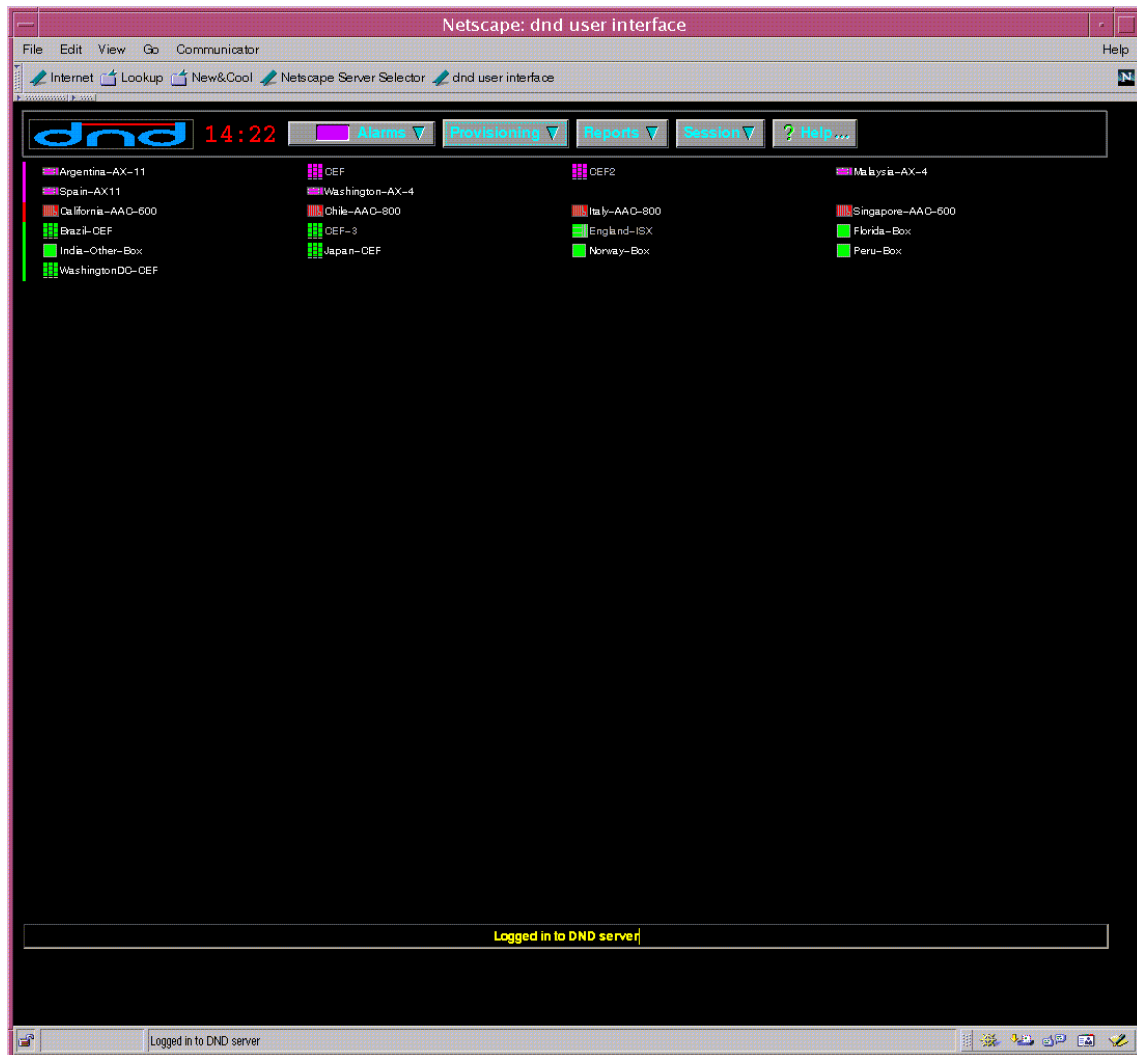
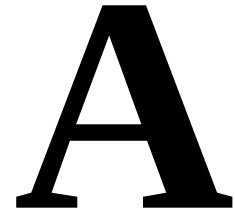


Figure 18-2. SNMP Northbound Interface

Summary of Fields for Customized Reports



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Background

Introduction

The EDIT CUSTOM REPORT FORMAT feature allows you to design a report in one of a number of categories, which are based on type of information. Each category makes available a range of fields, from which you may select for inclusion on your report.

To find out how to create and maintain reports, refer to “Custom Report Formats” in Chapter 16, Report Operations.

**NOTE:**

The Echoed Response Processing and Audit/Synchronization Report fields cannot be customized.

Purpose

This appendix states the full range of fields available, by category, and gives a brief description of each, and its form of origination. In some instances, there is no form of origination, but the data was generated by the system. In that case, the field is the only way to access that data. All data comes from the DND database.

Related tasks

For related tasks, see the following General Tasks in Volume II:

DND GUI:

■ Generating a Report	GT 16.1G
■ Generating an Alarm Summary Report	GT 16.2G

DND Forms:

■ Generating Reports	GT 16.1U
■ Displaying and Printing Reports	GT 16.2.U
■ Transferring Reports To DOS Diskette	GT 16.3U
■ Creating a New Report Format	GT 16.4U
■ Modifying a Report Format	GT 16.5U
■ Renaming a Report Format	GT 16.6U
■ Deleting a Report Format	GT 16.7U
■ Generating an Alarm Query Report	GT 16.8U
-

Background (Continued)

Related information

For related information, refer to Chapter 16, Report Operations.

ALARM LOG Reports

Fields Table A-1 displays the ALARM LOG report fields that can be customized.

Table A-1. ALARM LOG Report Fields

Name	Form of Origination	Description
Alm_Date	None.	The date on which the DND received the alarm.
Alm_Time	None.	The time at which the DND received the alarm.
NPC_Hier	NPC PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC in alarm.
NPC_Ext	NPC PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> NPC Specifier (Extnd) checkbox, NPC: field	The extended number of the NPC in alarm.
NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> NPC Specifier (ID) checkbox, NPC: field	The NPC ID of the NPC in alarm.
FE_Site	NPC PROVISIONING <i>Forms:</i> FE Site field <i>GUI:</i> Far End Site field	User-defined name of the DACS at the other end of the DS1 line terminating at the NPC in alarm.
Severity	None.	The severity of the alarm: CR, MAJ, MIN, INF, CLR
Alm_Summary	None.	The reason for the alarm.
Threshold	None.	The name of the threshold stored in the frame.
Fac_A_Type	None.	The type of facility alarm in a message Summary of CGA.
Side	None	The side number of the alarming facility.

Table A-1. ALARM LOG Report Fields (Continued)

Name	Form of Origination	Description
Unit	None.	The unit number of the alarming facility.
S_Unit	None.	The subunit of the alarming facility.
Field1	None.	Field1 of the Error Status Register, for a power fail message.
Field2	None	Field2 of the Error Status Register, for a power fail message.
NPC_Num	<i>Forms:</i> FRAME PROVISIONING NPC (Hier) or (Ext) field <i>GUI:</i> NE PROVISIONING NPC Addressing (Hier) , (Ext3) , or (Ext4) checkboxes	The format of the NPC number, either hierarchical or extended.
NE_Alm_Date	None.	The date reported in the alarm message received from the NE.
NE_Alm_Time	None.	The time reported in the alarm message received from the NE.
Intrv_Lev	None	The intervention level value reported by the NE when intervention is active.

CIRCUIT ALARM Report

Fields Table A-2 displays the CIRCUIT ALARM report fields that can be customized.

Table A-2. CIRCUIT ALARM Report Fields

Name	Form of Origination	Description
NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC in alarm.
NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> NPC Specifier (Extd) checkbox, NPC: field	The extended number of the NPC in alarm.
NPC_ID	CIRCUIT PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> NPC Specifier (ID) checkbox, NPC: field	The NPC ID of the NPC in alarm.
Service_State	NPC PROVISIONING Service State field	The operational status of the NPC in alarm.
Ch	CIRCUIT PROVISIONING <i>Forms:</i> Ch field <i>GUI:</i> Channel field	The channel, of the NPC in alarm, that is connected in the circuit.
Alarm_State	NPC PROVISIONING Alarm State field	The status of the alarm.
Term_State	None.	The actual termination state of the EFT in the alarming NPC. The EFT can acquire this state by a variety of methods.
Circuit_ID	CIRCUIT PROVISIONING <i>Forms:</i> Ckt ID field <i>GUI:</i> Circuit ID field	The circuit ID of the circuit containing the NPC in alarm.

Table A-2. CIRCUIT ALARM Report Fields (Continued)

Name	Form of Origination	Description
Ckt_Status	CIRCUIT PROVISIONING <i>Forms:</i> Ckt Status field <i>GUI:</i> Status field	The operating status of the circuit containing the EFT of the NPC in alarm.
Class	CIRCUIT PROVISIONING Ckt Class field	The class of the circuit containing the EFT of the NPC in alarm: FDX, HDX, etc.
Customer_Name	CIRCUIT PROVISIONING Customer Name field	The user-defined name of the customer owning the circuit containing the alarming NPC.
TC	CIRCUIT PROVISIONING <i>Forms:</i> TC field <i>GUI:</i> Trunk Conditioning field	Trunk conditioning of the circuit containing the NPC in alarm.
IW	CIRCUIT PROVISIONING <i>Forms:</i> IW field <i>GUI:</i> Insertion Word field	Insertion word of the circuit containing the NPC in alarm.
T_NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> (Connecting To) NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC at the other side of the circuit containing the alarming NPC.
T_NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> (Connecting To) NPC Specifier (Extd) checkbox, NPC: field	The extended number of the NPC at the other side of the circuit containing the alarming NPC.
T_NPC_ID	CIRCUIT PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> (Connecting To) NPC Specifier (ID) checkbox, NPC: field	The ID of the NPC at the other side of the circuit containing the alarming NPC.
T_Service_State	NPC PROVISIONING Service State field	The service status of the NPC at the other side of the circuit containing the alarming NPC.

Table A-2. CIRCUIT ALARM Report Fields (Continued)

Name	Form of Origination	Description
T_Ch	CIRCUIT PROVISIONING <i>Forms:</i> TO Ch field <i>GUI:</i> TO Channel field	The EFT at the other side of the circuit containing the alarming NPC.
T_Alarm_State	CIRCUIT PROVISIONING Alarm State field	The alarm status of the NPC at the other side of the circuit containing the alarming NPC.
T_Term_State	None.	The actual termination state of the NPC at the other side of the circuit containing the alarming NPC. The EFT can acquire this state by a variety of methods.
Ckt_Priority	CIRCUIT PROVISIONING <i>Forms:</i> Ckt Priority field <i>GUI:</i> Priority field	The priority of the circuit containing the alarming NPC.
Bandwidth	CIRCUIT PROVISIONING Bandwidth field	The bandwidth of the circuit containing the alarming NPC.
SC	CIRCUIT PROVISIONING <i>Forms:</i> SC field <i>GUI:</i> Signaling Conversion field	The signalling conversion specification of the circuit containing the alarming NPC.
Framing	CIRCUIT PROVISIONING Framing field	The new values of the framing bits in Channel 0 to non-Channel 0 connections in a circuit containing the alarming NPC.
Options_AIS	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options (AIS) checkbox	The value AIS, for transmit Alarm Indication Signal, if Options is set to B for the circuit in which the alarming NPC appear.
Location_A	CIRCUIT PROVISIONING <i>Forms:</i> Loc A field <i>GUI:</i> Location A field	A user-defined field stating the station ID of the FROM side of the circuit containing the alarming NPC.
Location_Z	CIRCUIT PROVISIONING <i>Forms:</i> Loc Z field <i>GUI:</i> Location Z field	A user-defined field stating the station ID of the TO side of the circuit containing the alarming NPC.

NPC ALARM Report

Fields Table A-3 displays the NPC ALARM report fields that can be customized.

Table A-3. NPC ALARM Report Fields

Name	Form of Origination	Description
NPC_Hier	NPC PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC in alarm.
NPC_Ext	NPC PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> NPC Specifier (Extd) checkbox, NPC: field	The extended number of the NPC in alarm.
NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> NPC Specifier (ID) checkbox, NPC: field	The NPC ID of the NPC in alarm.
Service_State	NPC PROVISIONING Service State field	The operational status of the NPC in alarm.
Alarm_State	NPC PROVISIONING Alarm State field	The status of the alarm.
Alarm_Aging	NPC PROVISIONING <i>Forms:</i> Alarm Aging field <i>GUI:</i> Alarm Age field	The threshold in seconds before the DND takes action on the alarm.
Severity	<i>Forms:</i> ALARM REPORT Sev field <i>GUI:</i> ALARM LOG REPORT Alarm Severity field	The severity of the alarm.
Type	NPC PROVISIONING <i>Forms:</i> Type field <i>GUI:</i> NPC Type field	The type of the NPC in alarm.

Table A-3. NPC ALARM Report Fields (Continued)

Name	Form of Origination	Description
FE_Site	NPC PROVISIONING <i>Forms:</i> FE Site field <i>GUI:</i> Far End Site field	The user-defined name of the DACS at the far end of the line terminating at the alarming NPC.
Insertion_Word	NPC PROVISIONING <i>Forms:</i> IW field <i>GUI:</i> Insertion Word field	The insertion word of the NPC in alarm.
NFS	NPC PROVISIONING <i>Forms:</i> NFS field <i>GUI:</i> NFW field	The treatment of the non-framing bits in Channel 0 to non-Channel 0 connections.
Interv_Lev	NPC PROVISIONING <i>Forms:</i> Interv. Level field <i>GUI:</i> Intervention Level checkboxes	Intervention level setting (1-6) where 1 specifies highest maintenance action and 6 is the lowest maintenance action.
Intv_Lev	None	The intervention level value calculated from the alarm severity and intervention level setting.

COMMON EQUIPMENT ALARM Report

Fields Table A-4 displays the COMMON EQUIPMENT ALARM report fields that can be customized.

Table A-4. COMMON EQUIPMENT ALARM Report Fields

Name	Form of Origination	Description
EqpDate	None.	The date on which the DND received the alarm.
EqpTime	None.	The time at which the DND received the alarm.
Status	None.	The severity of the alarm.
Device	None.	The device name under alarm.
Sub_Device	None.	The sub-device name under alarm.
Side	None.	The side under alarm.
Unit	None.	The unit under alarm.
Sub_Unit	None.	The subunit under alarm.
Intv_Lev	None	The intervention level value reported by the NE when intervention is active.

CIRCUIT Report

Fields Table A-5 displays the CIRCUIT report fields that can be customized.

Table A-5. CIRCUIT Report Fields

Name	Form of Origination	Description
Remarks	CIRCUIT PROVISIONING <i>Forms:</i> Rmks field <i>GUI:</i> Remarks field	User-defined information concerning the circuit.
Ckt_Status	CIRCUIT PROVISIONING <i>Forms:</i> Ckt Status field <i>GUI:</i> Status field	The operating status of the circuit.
Circuit_ID	CIRCUIT PROVISIONING <i>Forms:</i> Ckt ID field <i>GUI:</i> Circuit ID field	User-assigned circuit name.
Class	CIRCUIT PROVISIONING Ckt Class field	The type of circuit: <i>FDX, HDX, BBL, BRD, DMB.</i>
Customer_Name	CIRCUIT PROVISIONING Customer Name field	User-defined name of the customer owning the circuit.
Location_A	CIRCUIT PROVISIONING <i>Forms:</i> Loc A field <i>GUI:</i> Location A field	User-defined station ID of the FROM side of the circuit.
Location_Z	CIRCUIT PROVISIONING <i>Forms:</i> Loc Z field <i>GUI:</i> Location Z field	User-defined station ID of the TO side of the circuit.
F_NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> (FROM) NPC Specifier (Hier) checkbox, NPC: field	Hierarchical number of the circuit's FROM side NPC.

Table A-5. CIRCUIT Report Fields (Continued)

Name	Form of Origination	Description
F_NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> (FROM) NPC Specifier (Extd) checkbox, NPC: field	Extended number of the circuit's FROM side NPC.
F_NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> (FROM) NPC Specifier (ID) checkbox, NPC: field	NPC ID of the circuit's FROM side NPC.
F_Ch	CIRCUIT PROVISIONING <i>Forms:</i> FROM Ch field <i>GUI:</i> FROM Channel: field	The circuit's FROM side channel number.
T_NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> (TO) NPC Specifier (Hier) checkbox, NPC: field	Hierarchical number of the circuit's TO side NPC.
T_NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> (TO) NPC Specifier (Extd) checkbox, NPC: field	Extended number of the circuit's TO side NPC.
T_NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> (TO) NPC Specifier (ID) checkbox, NPC: field	NPC ID of the circuit's TO side NPC.
T_Ch	CIRCUIT PROVISIONING <i>Forms:</i> TO Ch field <i>GUI:</i> TO Channel field	The circuit's TO side channel number.

Table A-5. CIRCUIT Report Fields (Continued)

Name	Form of Origination	Description
F_Mode	CIRCUIT PROVISIONING <i>Forms:</i> FROM Mode field <i>GUI:</i> FROM Channel field	The use of the FROM channel in a DMB circuit: <i>SYM, BRD, BBL, LEG.</i>
T_Mode	CIRCUIT PROVISIONING <i>Forms:</i> TO Mode field <i>GUI:</i> (TO) Mode	The use of the TO channel in a DMB circuit: <i>SYM, BRD, BBL, LEG</i>
TC	CIRCUIT PROVISIONING <i>Forms:</i> TC field <i>GUI:</i> Trunk Conditioning field	Trunk conditioning. Specifies whether A/B-robbet-bit signaling will signal circuit failure.
IW	CIRCUIT PROVISIONING <i>Forms:</i> IW field <i>GUI:</i> Insertion Word field	Insertion word. Specifies the OOS signal of mapped channels.
SC	CIRCUIT PROVISIONING <i>Forms:</i> SC field <i>GUI:</i> Signaling Conversion field	Signaling conversion. Specifies the CAS channel values for CEPT and GATEWAY.
Bandwidth	CIRCUIT PROVISIONING Bandwidth field	The number of channels in a high-rate circuit.
Bandwidth_Type	CIRCUIT PROVISIONING Bandwidth Type field	The placement of channels in a high-rate circuit: <i>C: Contiguous, A: Alternating, R: Random</i>
Service_Date	CIRCUIT PROVISIONING Service Date field	User-defined date when the circuit was first placed in service. <i>GUI:</i> Day, Month, and Year fields
Options_NAM	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options NAM checkbox	The value NAM, for no a-to-mu law conversion: <i>Forms:</i> If Options is set to A; otherwise, blanks. <i>GUI:</i> If checkbox is selected

Table A-5. CIRCUIT Report Fields (Continued)

Name	Form of Origination	Description
Options_AIS	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options AIS checkbox	The value <i>AIS</i> , for transmit Alarm Indication Signal <i>Forms:</i> If Options is set to B <i>GUI:</i> If checkbox is selected
Options_RDLD	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options RDLD checkbox	The value <i>RDLD</i> , for disconnect red-lined circuits: <i>Forms:</i> If Options is set to C <i>GUI:</i> If checkbox is selected
Options_OOS	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options OOS checkbox	The value <i>OOS</i> , for disconnect on channel going <i>OOS</i> : <i>Forms:</i> If Options is set to D <i>GUI:</i> If checkbox is selected
Options_INCL	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options INCL checkbox	The value <i>INCL</i> , for authorize disconnect of red-lined circuits: <i>Forms:</i> If Options is set to E <i>GUI:</i> If checkbox is selected
Options_DCC	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options DCC checkbox	The value <i>DCC</i> , for assert IW as disconnect code <i>Forms:</i> If Options is set to F <i>GUI:</i> If checkbox is selected
Termination_State	CIRCUIT PROVISIONING <i>Forms:</i> Options field value <i>GUI:</i> Circuit Options TLA checkbox	The value <i>TLA</i> , for terminate normal traffic <i>Forms:</i> If Options is set to G <i>GUI:</i> If checkbox is selected
NTR	CIRCUIT PROVISIONING <i>Forms:</i> NTR field value <i>GUI:</i> Circuit Options No Transmit (NTR) combo boxes	No transmit. Specifies that a direction of a DMB leg will not carry traffic: <i>Forms:</i> T or F <i>GUI:</i> T: <i>TO</i> , F: <i>FROM</i>

Table A-5. CIRCUIT Report Fields (Continued)

Name	Form of Origination	Description
CP	CIRCUIT PROVISIONING <i>Forms:</i> Ckt Priority field value <i>GUI:</i> Priority field	Determines the importance of a circuit for restoral actions.
Framing	CIRCUIT PROVISIONING Framing field value	The value of the framing bits in CEPT Channel 0 cross-connection.

CHANNEL Reports

Fields Table A-6 displays the CHANNEL report fields that can be customized.

Table A-6. CHANNEL Report Fields

Name	Form of Origination	Description
NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC. This NPC is to be understood as the FROM NPC.
NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> NPC Specifier (Extd) checkbox, NPC: field	The extended number of the NPC.
NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> NPC Specifier (ID) checkbox, NPC: field	User-assigned NPC name.
Ch	CIRCUIT PROVISIONING <i>Forms:</i> TO Ch field <i>GUI:</i> TO Channel field	The number of the channel under consideration, within the specified NPC.
Status	CIRCUIT PROVISIONING <i>Forms:</i> Ckt Status field <i>GUI:</i> Status field	The status of the circuit in which the channel appears.
Circuit_ID	CIRCUIT PROVISIONING <i>Forms:</i> Ckt ID field <i>GUI:</i> Circuit ID field	The ID of the circuit in which the channel appears.
Class	CIRCUIT PROVISIONING Ckt Class field	The type of circuit: FDX, HDX, BBL, BRD, DMB, BKB, LEG.
TC	CIRCUIT PROVISIONING <i>Forms:</i> TC field <i>GUI:</i> Trunk Conditioning field	Trunk conditioning. Specifies whether A/B-robbed-bit signaling will signal circuit failure.

Table A-6. CHANNEL Report Fields (Continued)

Name	Form of Origination	Description
IW	CIRCUIT PROVISIONING <i>Forms:</i> IW field <i>GUI:</i> Insertion Word field	Insertion word. Specifies the OOS signal of mapped channels.
To_NPC_Hier	CIRCUIT PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> (TO) NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the TO NPC.
To_NPC_Ext	CIRCUIT PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> (TO) NPC Specifier (Extd) checkbox, NPC: field	The extended number of the TO NPC.
To_NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> (TO) NPC Specifier (ID) checkbox, NPC: field	User-assigned TO NPC name.
To_Ch	CIRCUIT PROVISIONING <i>Forms:</i> TO Ch field <i>GUI:</i> TO Channel field	Specifies the TO channel.
TS	None. This information is reported only in this report form.	Reports the termination state of the EFT represented by the channel, as it was when the report was generated. Values are TLA, TLR, or blanks.

NPC Report

Fields

Table A-7 displays the NPC report fields that can be customized.

Table A-7. NPC Report Fields

Name	Form of Origination	Description
NPC_Hier	NPC PROVISIONING <i>Forms:</i> Number (Hier) field <i>GUI:</i> NPC Specifier (Hier) checkbox, NPC: field	The hierarchical number of the NPC.
NPC_Ext	NPC PROVISIONING <i>Forms:</i> (Ext) field <i>GUI:</i> NPC Specifier (Extd) checkbox, NPC: field	The extended number of the NPC.
NPC_ID	NPC PROVISIONING <i>Forms:</i> NPC ID field <i>GUI:</i> NPC Specifier (ID) checkbox, NPC: field	User-assigned NPC name.
Type	NPC PROVISIONING <i>Forms:</i> Type field <i>GUI:</i> NPC Type field	The DND type of NPC, which is based on the hardware module providing it.
FE_Site	NPC PROVISIONING <i>Forms:</i> FE Site field <i>GUI:</i> Far End Site field	User-defined name of the DACS at the other end of the DS1 line terminating at the NPC.
Service_State	NPC PROVISIONING Service State field	The operating status of the NPC.
Alarm_State	NPC PROVISIONING Alarm State field	The status of an alarm currently being received or asserted by this NPC.
Alarm_Aging	NPC PROVISIONING <i>Forms:</i> Alarm Aging field <i>GUI:</i> Alarm Age field	The number of seconds after an alarm is received before the DND takes action.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
Insertion_Word	NPC PROVISIONING <i>Forms:</i> IW field <i>GUI:</i> Insertion Word field	The value transmitted by an <i>IS</i> NPC on unassigned channels.
AIS	NPC PROVISIONING <i>Forms:</i> AIS field <i>GUI:</i> Alarm Indication Signal (AIS) field	Specifies Alarm Indication Signal alarm level for this NPC. Values are: <i>MI</i> (Informational), <i>MN</i> (Minor), <i>MJ</i> (Major), <i>CR</i> (Critical).
NFS	NPC PROVISIONING <i>Forms:</i> NFS field <i>GUI:</i> NFW field	Non-frame word setting. Specifies how the spare bits of time slot 0 are to be handled.
TS0	NPC PROVISIONING TS0 field	Describes how to process bits for transmission in a CEPT time slot 0.
TS0M	NPC PROVISIONING TS0M field	Describes what CEPT time slot 0 bits are to be monitored by the frame.
Min_Slips	NPC PROVISIONING <i>Forms:</i> Minor Alarm Option/Slips field <i>GUI:</i> Minor Alarm Thresholds/Slips checkbox	Specifies the threshold of a minor alarm on a slips error in an NAS NPC.
Min_BER	NPC PROVISIONING <i>Forms:</i> Minor Alarm Option/Bit Error Rate field <i>GUI:</i> Minor Alarm Thresholds/Bit Error Rate checkbox	Specifies the threshold of a minor alarm on a bit error rate in an NAS NPC.
Min_Frame_Align	NPC PROVISIONING <i>Forms:</i> Minor Alarm Option/Frame Alignment field <i>GUI:</i> Minor Alarm Thresholds/Change of Frame Alignment checkbox	Specifies the threshold of a minor alarm on a frame alignment error in an NAS NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
Maj_Slips	NPC PROVISIONING <i>Forms:</i> Major Alarm Option/Slips field <i>GUI:</i> Major Alarm Thresholds/Slips checkbox	Specifies the threshold of a major alarm on a slips error in an NAS NPC.
Maj_BER	NPC PROVISIONING <i>Forms:</i> Major Alarm Option/Bit Error Rate field <i>GUI:</i> Major Alarm Thresholds/Bit Error Rate checkbox	Specifies the threshold of a major alarm on a bit error rate in an NAS NPC.
Maj_Frame_Align	NPC PROVISIONING <i>Forms:</i> Major Alarm Option/Frame Alignment field <i>GUI:</i> Major Alarm Thresholds/Change of Frame Alignment checkbox	Specifies the threshold of a major alarm on a frame alignment error in an NAS NPC.
Maj_Err_Sec	NPC PROVISIONING <i>Forms:</i> Major Alarm Option/Errored Seconds field <i>GUI:</i> Major Alarm Thresholds/Errored Seconds checkbox	Specifies the threshold of a major alarm on errored seconds in an NAS NPC.
Maj_Sev_Err_Sec	NPC PROVISIONING <i>Forms:</i> Major Alarm Option/Severe Errored Seconds field <i>GUI:</i> Major Alarm Thresholds/Severe Errored Seconds checkbox	Specifies the threshold of a major alarm on severe errored seconds in an NAS NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
Short_Slips	NPC PROVISIONING <i>Forms:</i> Short Interval Option/Slips field <i>GUI:</i> Near End 15 Minute Counts/Slips checkbox	Specifies the short-interval threshold of a slips alarm in a CEPT non-PA NPC.
Short_Degraded_Min	NPC PROVISIONING <i>Forms:</i> Short Interval Option/Degraded Minutes field <i>GUI:</i> Near End 15 Minute Counts/Degraded Minutes checkbox	Specifies the short-interval threshold of a degraded minutes alarm in a CEPT non-PA NPC.
Short_Unavail_Sec	NPC PROVISIONING <i>Forms:</i> Short Interval Option/Unavailable Seconds field <i>GUI:</i> Near End 15 Minute Counts/Unavailable Seconds checkbox	Specifies the short-interval threshold of an unavailable seconds alarm in a CEPT non-PA NPC.
Short_Err_Sec	NPC PROVISIONING <i>Forms:</i> Short Interval Option/Errored Seconds field <i>GUI:</i> Near End 15 Minute Counts/Errored Seconds checkbox	Specifies the short-interval threshold of an errored seconds alarm in a CEPT non-PA NPC.
Short_Sev_Err_Sec	NPC PROVISIONING <i>Forms:</i> Short Interval Option/Severe Errored Seconds field <i>GUI:</i> Near End 15 Minute Counts/Severe Errored Seconds checkbox	Specifies the short-interval threshold of a severe errored seconds alarm in a CEPT non-PA NPC.
Long_Slips	NPC PROVISIONING <i>Forms:</i> Long Interval Option/Slips field <i>GUI:</i> Near End 24 Hour Counts/Slips checkbox	Specifies the long-interval threshold of a slips alarm in a CEPT non-PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
Long_Degraded_Min	NPC PROVISIONING <i>Forms:</i> Long Interval Option/Degraded Minutes field <i>GUI:</i> Near End 24 Hour Counts/Degraded Minutes checkbox	Specifies the long-interval threshold of a degraded minutes alarm in a CEPT non-PA NPC.
Long_Unavail_Sec	NPC PROVISIONING <i>Forms:</i> Long Interval Option/Unavailable Seconds field <i>GUI:</i> Near End 24 Hour Counts/Unavailable Seconds checkbox	Specifies the long-interval threshold of an unavailable errors alarm in a CEPT non-PA NPC.
Long_Err_Sec	NPC PROVISIONING <i>Forms:</i> Long Interval Option/Errored Seconds field <i>GUI:</i> Near End 24 Hour Counts/Errored Seconds checkbox	Specifies the long-interval threshold of an errored seconds alarm in a CEPT non-PA NPC.
Long_Sev_Err_Sec	NPC PROVISIONING <i>Forms:</i> Long Interval Option/Unavailable Seconds field <i>GUI:</i> Near End 24 Hour Counts/Unavailable Seconds checkbox	Specifies the long-interval threshold of a severe errored seconds alarm in a CEPT non-PA NPC.
NE_Daily_CRC_Err	NPC PROVISIONING <i>Forms:</i> Daily NE CRC Block Errors field <i>GUI:</i> Near End 24 Hour Counts/CRC Block Errors checkbox	Specifies the daily near end CRC block errors for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
NE_Daily_Err_Sec	NPC PROVISIONING <i>Forms:</i> Daily NE Errored Seconds field <i>GUI:</i> Near End 24 Hour Counts/Errored Seconds checkbox	Specifies the daily near end errored seconds for a CEPT PA NPC.
NE_Daily_S_Err_Sec	NPC PROVISIONING <i>Forms:</i> Daily NE Severe Errored Seconds field <i>GUI:</i> Near End 24 Hour Counts/Severe Errored Seconds checkbox	Specifies the daily near end severe errored seconds for a CEPT PA NPC.
NE_Daily_Unavl_Sec	NPC PROVISIONING <i>Forms:</i> Daily NE Unavailable Seconds field <i>GUI:</i> Near End 24 Hour Counts/Unavailable Seconds checkbox	Specifies the daily near end unavailable seconds for a CEPT PA NPC.
NE_Daily_Frame_Err	NPC PROVISIONING <i>Forms:</i> Daily NE Framing Errors field <i>GUI:</i> Near End 24 Hour Counts/Framing Errors checkbox	Specifies the daily near end framing errors for a CEPT PA NPC.
NE_Daily_OOF_Sec	NPC PROVISIONING <i>Forms:</i> Daily NE Out-of-Frame Seconds field <i>GUI:</i> Near End 24 Hour Counts/Out-of-Frame Seconds checkbox	Specifies the daily near end out-of-frame seconds for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
NE_Daily_Slip_Sec	NPC PROVISIONING <i>Forms:</i> Daily NE Controlled Slip Seconds field <i>GUI:</i> Near End 24 Hour Counts/Controlled Slip Seconds checkbox	Specifies the daily near end controlled slip seconds for a CEPT PA NPC.
NE_Daily_Code_Vltn	NPC PROVISIONING <i>Forms:</i> Daily NE Controlled Coding Violations field <i>GUI:</i> Near End 24 Hour Counts/Coding Violations Seconds checkbox	Specifies the daily near end coding violations for a CEPT PA NPC.
NE_Daily_Unavl_Cnt	NPC PROVISIONING <i>Forms:</i> Daily NE Unavailable Time Count field <i>GUI:</i> Near End 24 Hour Counts/Unavailable Time Count checkbox	Specifies the daily near end unavailable time count for a CEPT PA NPC.
NE_Daily_Mfram_Err	NPC PROVISIONING <i>Forms:</i> Daily NE Multiframe Errors field <i>GUI:</i> Near End 24 Hour Counts/Multiframe Errors checkbox	Specifies the daily near end multiframe errors for a CEPT PA NPC.
FE_Daily_CRC_Err	NPC PROVISIONING <i>Forms:</i> Daily FE CRC Block Errors field <i>GUI:</i> Far End 24 Hour Counts/CRC Block Errors checkbox	Specifies the daily far end CRC block errors for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
FE_Daily_Err_Sec	NPC PROVISIONING <i>Forms:</i> Daily FE Errored Seconds field <i>GUI:</i> Far End 24 Hour Counts/Errored Seconds checkbox	Specifies the daily far end errored seconds for a CEPT PA NPC.
FE_Daily_S_Err_Sec	NPC PROVISIONING <i>Forms:</i> Daily FE Severe Errored Seconds field <i>GUI:</i> Far End 24 Hour Counts/Severe Errored Seconds checkbox	Specifies the daily far end severe errored seconds for a CEPT PA NPC.
FE_Daily_Unavl_Sec	NPC PROVISIONING <i>Forms:</i> Daily FE Unavailable Seconds field <i>GUI:</i> Far End 24 Hour Counts/Unavailable Seconds checkbox	Specifies the daily far end unavailable seconds for a CEPT PA NPC.
NE_15M_CRC_Err	NPC PROVISIONING <i>Forms:</i> 15-Min NE CRC Block Errors field <i>GUI:</i> Near End 15 Minute Counts/CRC Block Errors checkbox	Specifies the 15-minute near end CRC block errors for a CEPT PA NPC.
NE_15M_Err_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min NE Errored Seconds field <i>GUI:</i> Near End 15 Minute Counts/Errored Seconds checkbox	Specifies the 15-minute near end errored seconds for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
NE_15M_S_Err_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min NE Severe Errored Seconds field <i>GUI:</i> Near End 15 Minute Counts/Severe Errored Seconds checkbox	Specifies the 15-minute near end severe errored seconds for a CEPT PA NPC.
NE_15M_Unavl_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min NE Unavailable Seconds field <i>GUI:</i> Near End 15 Minute Counts/Unavailable Seconds checkbox	Specifies the 15-minute near end unavailable seconds for a CEPT PA NPC.
NE_15M_Frame_Err	NPC PROVISIONING <i>Forms:</i> 15-Min NE Framing Errors field <i>GUI:</i> Near End 15 Minute Counts/Framing Errors checkbox	Specifies the 15-minute near end framing errors for a CEPT PA NPC.
NE_15M_OOF_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min NE Out-of-Frame Seconds field <i>GUI:</i> Near End 15 Minute Counts/Out-of-Frame Seconds checkbox	Specifies the 15-minute near end out-of frame seconds for a CEPT PA NPC.
NE_15M_Slip_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min NE Controlled Slip Seconds field <i>GUI:</i> Near End 15 Minute Counts/Controlled Slip Seconds checkbox	Specifies the 15-minute near end controlled slip seconds for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
NE_15M_Code_Vltn	NPC PROVISIONING <i>Forms:</i> 15-Min NE Coding Violations field <i>GUI:</i> Near End 15 Minute Counts/Coding Violations checkbox	Specifies the 15-minute near end coding violations for a CEPT PA NPC.
NE_15M_Unavl_Cnt	NPC PROVISIONING <i>Forms:</i> 15-Min NE Unavailable Time Count field <i>GUI:</i> Near End 15 Minute Counts/Unavailable Time Count checkbox	Specifies the 15-minute near end unavailable time count for a CEPT PA NPC.
NE_15M_Mfram_Err	15-Min NE Multiframe Errors NPC PROVISIONING <i>Forms:</i> 15-Min NE Unavailable Time Count field <i>GUI:</i> Near End 15 Minute Counts/Unavailable Time Count checkbox	Specifies the 15-minute near end multiframe errors for a CEPT PA NPC.
FE_15M_CRC_Err	NPC PROVISIONING <i>Forms:</i> 15-Min FE CRC Block Errors field <i>GUI:</i> Far End 15 Minute Counts/CRC Block Errors checkbox	Specifies the 15-minute far end CRC block errors for a CEPT PA NPC.
FE_15M_Err_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min FE Errored Seconds field <i>GUI:</i> Far End 15 Minute Counts/Errored Seconds checkbox	Specifies the 15-minute far end errored seconds for a CEPT PA NPC.

Table A-7. NPC Report Fields (Continued)

Name	Form of Origination	Description
FE_15M_S_Err_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min FE Severe Errored Seconds field <i>GUI:</i> Far End 15 Minute Counts/Severe Errored Seconds checkbox	Specifies the 15-minute far end severe errored seconds for a CEPT PA NPC.
FE_15M_Unavl_Sec	NPC PROVISIONING <i>Forms:</i> 15-Min FE Unavailable Seconds field <i>GUI:</i> Far End 15 Minute Counts/Unavailable Seconds checkbox	Specifies the 15-minute far end unavailable seconds for a CEPT PA NPC.
Trans	NPC PROVISIONING <i>Forms:</i> Lpbk Trans field <i>GUI:</i> Loopback Trans- mission checkboxes	The transmission parameter of a loopback state. Values/checkboxes are: A - loop the signal, send AIS, turn off PM and alarms B - loop the signal, send AIS, perform PM and alarm processing C - Loop the signal, turn off PM, freeze alarms T - Loop the signal, perform PM and process alarms N - No loopback is up
Dir	NPC PROVISIONING <i>Forms:</i> Dir field <i>GUI:</i> Direction checkboxes	The Direction parameter of a loopback state. Values/checkboxes are: F/Facility - Facility, back to the facility E/Equipment - Equipment, back to the DACS N/None - No loopback
Interv_Lev	NPC PROVISIONING <i>Forms:</i> Interv. Level field <i>GUI:</i> Intervention Level checkboxes	Intervention level setting (1-6) where 1 specifies highest maintenance action and 6 is the lowest maintenance action.

ALTROUTES/PREEMPTIONS Reports

Fields Table A-8 displays the ALTROUTE/PREEMPTION report fields that can be customized for the DND Forms Interface Only.

Table A-8. ALTROUTES/PREEMPTIONS Report Fields

Name	Form of Origination	Description
Circuit_ID	Ckt ID field, CIRCUIT PROVISIONING	The circuit ID of the altrouted circuit.
CP	Ckt Priority field, CIRCUIT PROVISIONING	The circuit priority of the altrouted circuit. The CP partly determines its order of normalization.
TC	TC field, CIRCUIT PROVISIONING	Trunk conditioning of the altrouted circuit.
IW	IW field, CIRCUIT PROVISIONING	Insertion word of the altrouted circuit.
Alt_Date	Altroute Date & Time , CIRCUIT PROVISIONING	The date the circuit was altrouted.
Alt_Time	Altroute Date & Time , CIRCUIT PROVISIONING	The time the circuit was altrouted.
NPC_Hier	NORMAL Hier , CIRCUIT PROVISIONING	The hierarchical NPC number of the EFT that was changed in altrouting.
NPC_Ext	NORMAL Ext field, CIRCUIT PROVISIONING	The extended NPC number of the EFT that was changed in altrouting.
NPC_ID	NORMAL NPC ID field, CIRCUIT PROVISIONING	The NPC ID of the EFT that was changed in altrouting.
Alt_Ch	ALTRROUTE Ch field, CIRCUIT PROVISIONING	The channel to which the NORMAL channel was changed.
Preemp_Ckt_ID	Preempted Ckt ID field, CIRCUIT PROVISIONING	The NPC ID of the first circuit that was preempted by this altroute, if any.
Preemp_CP	Preempted CP field, CIRCUIT PROVISIONING	The circuit priority of the preempted circuit, if any.

RECONFIGURATION PLANS Reports

Fields Table A-9 displays the RECONFIGURATION PLANS report fields that can be customized for the DND Forms Interface Only.

Table A-9. RECONFIGURATION PLANS Report Fields

Name	Form of Origination	Description
Reconfiguration_ID	RP ID field, RECONFIGURATION PLAN PROVISIONING	The user-defined name of this plan.
Circuit_ID	Ckt ID field, RECONFIGURATION PLAN PROVISIONING	The circuit ID of the circuit on which this item of the plan operates.
Status	Status field, RECONFIGURATION PLAN PROVISIONING	The current operating status of the circuit on which this item of the plan operates.
Circuit_Action	Action field, RECONFIGURATION PLAN PROVISIONING	The Action to be performed on the circuit of this item.
T_NPC_Ext	CIRCUIT PROVISIONING <i>Forms: (Ext)</i> field <i>GUI: (TO) NPC Specifier (Extd)</i> checkbox, NPC: field	Extended number of the circuit's TO side NPC.

RECONFIGURATION PLAN ALTROUTE Reports

Fields Table A-10 displays the RECONFIGURATION PLAN ALTROUTE report fields that can be customized for the DND Forms Interface Only.

Table A-10. RECONFIGURATION PLAN ALTROUTE Report Fields

Name	Form of Origination	Description
Reconfiguration_ID	RP ID field, RECONFIGURATION PLAN PROVISIONING	The user-defined name of this plan.
Circuit_ID	Ckt ID field, RECONFIGURATION PLAN PROVISIONING	The circuit ID of the circuit on which this item of the plan operates.
Status	Status field, RECONFIGURATION PLAN PROVISIONING	The current operating status of the circuit on which this item of the plan operates.
Circuit_Action	Action field, RECONFIGURATION PLAN PROVISIONING	The Action to be performed on the circuit of this item.
Sequence	Sequence field, RECONFIGURATION PLAN PROVISIONING	The sequence number of this item in the plan.
NPC_Hier	FROM Hier field, CIRCUIT PROVISIONING	The hierarchical number of the NPC. This NPC is to be understood as the FROM NPC.
NPC_Ext	FROM Ext field, CIRCUIT PROVISIONING	The extended number of the NPC.
NPC_ID	FROM NPC ID field, CIRCUIT PROVISIONING	User-assigned NPC name.
Ch	FROM Ch field, CIRCUIT PROVISIONING	The number of the channel under consideration, within the specified NPC.
Alt_NPC_Hier	ALTROUTE Hier field, CIRCUIT PROVISIONING	The hierarchical number of the NPC to which the NORMAL NPC was changed.
Alt_NPC_Ext	ALTROUTE Ext field, CIRCUIT PROVISIONING	The extended number of the NPC to which the NORMAL NPC was changed.
Alt_NPC_ID	ALTROUTE NPC ID field, CIRCUIT PROVISIONING	The NPC number to which the NORMAL NPC was changed.
Alt_Ch	ALTROUTE Ch field, CIRCUIT PROVISIONING	The channel to which the NORMAL channel was changed.

Table A-10. RECONFIGURATION PLAN ALTRROUTE Report Fields (Continued)

Name	Form of Origination	Description
F_Preemp_Ckt_ID	Preempted Ckt ID field, CIRCUIT PROVISIONING	A circuit preempted by the FROM side of an altrouted circuit, if any.
F_Preemp_CP	Preempted CP field, CIRCUIT PROVISIONING	The circuit priority of the circuit preempted by the FROM side of the altrouted circuit.
T_Preemp_Ckt_ID	Preempted Ckt ID field, CIRCUIT PROVISIONING	A circuit preempted by the TO side of an altrouted circuit, if any.
T_Preemp_CP	Preempted CP field, CIRCUIT PROVISIONING	The circuit priority of the circuit preempted by the TO side of the altrouted circuit.

AUTO RECONFIGURATION PLAN Reports

Fields Table A-11 displays the AUTO RECONFIGURATION PLAN report fields that can be customized for the DND Forms Interface Only.

Table A-11. AUTO RECONFIGURATION Report Fields

Name	Form of Origination	Description
ARP_ID	ARP ID field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The user-defined name of this ARP.
ARP_Status	ARP Status field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The execution status of the ARP.
RP_Sequence	Sequence field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The sequence number of the RP listed in the ARP.
RP_Status	RP Status field, RECONFIGURATION PLAN PROVISIONING	The execution status of an RP on the ARP.
RP_Site	Site Name field, RP and ARP forms.	The name of the site where the RP was or is to be executed.
RP_ID	RP ID field, RP and ARP forms.	The ID of the RP that was or is to be executed.
RP_Date	None.	The date when the RP was executed.
RP_Time	None	The time when the RP was executed.
NPC_Sequence	Sequence field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The sequence number of an item placing an NPC on the alarm list.
NPC_Site	Site Name field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The site of the NPC being placed on the alarm list.
NPC_Hier	Number (Hier) field, AUTOMATIC RECONFIGURATION PLAN PROVISIONING	The hierarchical number of the NPC being placed on the alarm list.

Table A-11. AUTO RECONFIGURATION Report Fields (Continued)

Name	Form of Origination	Description
NPC_Ext	(Ext) field, AUTOMATIC RECONFUGURATION PLAN PROVISIONING	The extended number of the NPC being placed on the alarm list.
NPC_Date	None.	The date on which the NPC issued an alarm, triggering the RP.
NPC_Time	None.	The time at which the NPC issued an alarm.

OUTAGES Reports

Fields Table A-12 displays the OUTAGES report fields that can be customized for the DND Forms Interface Only.

Table A-12. OUTAGES Report Fields

Name	Form of Origination	Description
Outage_Type	Outage Type field, OUTAGE LOG	The type of log: NPC or CIRCUIT.
Record_Number	Record No. field, OUTAGE LOG	The sequence number of the record in the log.
Outage_ID	Outage ID field, OUTAGE LOG	The ID of this outage record. It is in fact an NPC ID or a circuit ID.
CP	Ckt Priority field, CIRCUIT PROVISIONING	The priority of the circuit referenced by the Outage ID .
Date_Out	Date Out field, OUTAGE LOG	Three fields stating the date on which the outage began.
Time_Out	Time Out field, OUTAGE LOG	Three fields stating the time on which the outage began.
Date_In	Date In field, OUTAGE LOG	The date when the outage was cleared.
Time_In	Time In field, OUTAGE LOG	The time the outage was cleared.

TEST PORT Reports

Fields Table A-13 displays the TEST PORT report fields that can be customized for the DND Forms Interface Only.

Table A-13. TEST PORT Report Field

Name	Form of Origination	Description
Test_Port	Test Port No. field, TP PROVISIONING	The test port number.
Test_Port_Group	Test Port Group field, TP PROVISIONING	The test port group.
Test_Port_State	Test State field, TEST ACCESS	The operating status of the test port.
TP_NPC_Hier	NPC Number (Hier) field, TP PROVISIONING	The hierarchical number of the NPC being used for this test port group.
TP_NPC_Ext	(Ext) field, TP PROVISIONING	The extended number of the NPC being used for this test port group.
TP_NPC_ID	NPC ID field, TP PROVISIONING	The NPC ID of the NPC being used for this test port group.
Static_TC	TC field, TP PROVISIONING	The test port trunk conditioning, if the TC is static for this port.
Static_IW	IW field, TP PROVISIONING	The test port insertion word, if the IW is static for this port.
F_NPC_Hier	FROM Hier field, TEST ACCESS form	The hierarchical number of the FROM NPC of the object under test.
F_NPC_Ext	FROM Ext field, TEST ACCESS form	The extended number of the FROM NPC of the circuit under test.
F_NPC_ID	FROM NPC ID field, TEST ACCESS form	The ID of the FROM NPC of the circuit under test.
F_Ch	FROM Ch field, TEST ACCESS form	The FROM channel number of the circuit under test.
T_NPC_Hier	TO Hier field, TEST ACCESS form	The hierarchical number of the TO NPC of the circuit under test.
T_NPC_Ext	TO Ext field, TEST ACCESS form	The extended number of the TO NPC of the circuit under test.
T_NPC_ID	TO NPC ID field, TEST ACCESS form	The ID of the TO NPC of the circuit under test.

Table A-13. TEST PORT Report Field (Continued)

Name	Form of Origination	Description
T_Ch	TO Ch field, TEST ACCESS form	The TO channel number of the circuit under test.
Circuit_ID	Ckt ID , TEST ACCESS form	The circuit ID of the object under test.
Term_State	Termination State field TEST ACCESS form.	The actual termination state of the object under test.
Ckt_Status	Ckt Status field, CIRCUIT PROVISIONING	The operational status of the circuit under test.

TEST ACCESS Reports

Fields Table A-14 displays the TEST ACCESS report fields that can be customized for the DND Forms Interface Only.

Table A-14. TEST ACCESS Report Fields

Name	Form of Origination	Description
Test_Object_Number	Test Object Number field, TEST ACCESS	The test object number.
IW	IW field, TEST ACCESS	The IW of the test object.
F_Test_Obj_NPC_ID	Test Object F NPC ID , TEST ACCESS	The FROM NPC ID of the test object.
T_Test_Obj_NPC_ID	Test Object T NPC ID , TEST ACCESS	The TO NPC ID of the test object.
FIRST_F_Test_Ch	Test Object FROM Ch TEST ACCESS	The channel number of the first channel of the band, of the FROM side of the test object.
Test_Object_Type	Object Type field, TEST ACCESS	The type of test object, TP or TG.
TC	TC field, TEST ACCESS	The trunk conditioning of the object under test, if the TC is static for this port.
F_Test_Obj_NPC_Ext	Test Object FROM Ext , TEST ACCESS	The extended number of the test object FROM NPC.
T_Test_Obj_NPC_Ext	Test Object TO Ext , TEST ACCESS	The extended number of the test object TO NPC.
FIRST_T_Test_Ch	Test Object TO Ch , TEST ACCESS	The channel number of the first channel of the band, of the TO side of the test object.
Test State	Test State field, TEST ACCESS	The operating status of the test access connections: RELEASED, MONITOR, etc.
AtoMU	AtoMU field, TEST ACCESS	A-law to Mu-law conversion in effect, Y or N.
F_Test_Obj_NPC_Hier	Test Object F Hier , TEST ACCESS	The hierarchical number of the of the test object FROM NPC.
T_Test_Obj_NPC_Hier	Test Object T Hier , TEST ACCESS	The hierarchical number of the test object TO NPC.
BW	Bandwidth field, TEST ACCESS	The bandwidth of the test object.

Table A-14. TEST ACCESS Report Fields (Continued)

Name	Form of Origination	Description
Circuit_ID	Object Under Test Ckt ID, TEST ACCESS	The circuit ID of the circuit being tested.
F_NPC_ID	Obj. Under Test F NPC ID, TEST ACCESS	The FROM NPC ID of the circuit under test.
T_NPC_ID	Obj. Under Test T NPC ID, TEST ACCESS	The TO NPC ID of the circuit under test.
F_Ch	Obj. Under Test F Ch, TEST ACCESS	The first FROM channel of the object under test.
Ckt_Status	Ckt Status field, CIRCUIT PROVISIONING	The circuit status of the circuit under test.
F_NPC_Ext	Obj. Under Test F Ext, TEST ACCESS	The extended number of the FROM NPC in the circuit under test.
T_NPC_Ext	Obj. Under Test T Ext, TEST ACCESS	The extended number of the TO NPC in the circuit under test.
T_Ch	Obj. Under Test T Ch, TEST ACCESS	The first TO channel of the object under test.
F_NPC_Hier	Obj. Under Test F Hier, TEST ACCESS	The hierarchical number of the FROM NPC in the circuit under test.
T_NPC_Hier	Obj. Under Test T Hier, TEST ACCESS	The hierarchical number of the TO NPC in the circuit under test.
Termination_State	Termination State field, TEST ACCESS	The termination state of the circuit under test.

FRAMES/LINKS Reports

Fields Table A-15 displays the FRAMES/LINKS report fields that can be customized for the DND Forms Interface Only.

Table A-15. FRAMES/LINKS Report Fields

Name	Form of Origination	Description
Site_Name	Site Name field, FRAME ADMINISTRATION	The user-assigned name of the frame being provisioned.
Site_Status	Site Status field, FRAME ADMINISTRATION	The status of the frame.
Protocol	Protocol field, FRAME ADMINISTRATION	The protocol in effect over the path between the DND and the frame: SNIDER or X.25.
Location	Location field, FRAME ADMINISTRATION	User-defined value stating the physical location of the frame.
Generic	Generic field, FRAME ADMINISTRATION	States the software release of the frame software.
NPC_Addressing	NPC Addr field, FRAME ADMINISTRATION	The type of NPC addressing used in frame commands generated by the DND: HIER, EXT3, EXT4.
Language	Language field, FRAME ADMINISTRATION	The command language used for frame commands generated by the DND: MML, PDS.
Frame_Type	Type field, FRAME ADMINISTRATION	The type of frame: DACS II, D II ISX.
Alarm_Sync	NPC Alarm Sync , FRAME ADMINISTRATION	The selection or non-selection of NPC alarm synchronization for this frame.
Speed	Speed field, FRAME ADMINISTRATION	The baud rate for the SNIDER port.
Primary_Line	Primary Line , FRAME ADMINISTRATION	The number of the line between the DND and the network or the frame.
Primary_Conn_Type	Connection Type , X.25 LINK ADMINISTRATION	The connection type of the primary line: PDN or DIRECT.
Primary_Netwk_Addr	Network Address , FRAME ADMINISTRATION	The network address of the primary line.

Table A-15. FRAMES/LINKS Report Fields (Continued)

Name	Form of Origination	Description
Primary_Link_Stat	Status field, FRAME ADMINISTRATION	The operational status of the primary line.
Backup_Line	Backup Line , FRAME ADMINISTRATION	The number of the backup line.
Backup_Conn_Type	Connection Type , X.25 LINK ADMINISTRATION	The connection type of the backup line: PDN or DIRECT.
Backup_Netwk_Addr	Network Address , FRAME ADMINISTRATION	The network address of the backup line.
Backup_Link_Stat	Status field, FRAME ADMINISTRATION	The operational status of the backup line.
ERP_Control	ERP Control , FRAME ADMINISTRATION	The selection or non-selection of conditional echoed response processing for this frame.
Comm_Status	None.	Whether or not the DND received a response after it sent out a command to the frame. A * means communication occurred.
Log_Recovery	DACS Log Recovery , FRAME ADMINISTRATION	The maximum number of messages that will be retrieved from the NE message log after a link recovery occurs.
Link_Failure	DACS Link Failure , FRAME ADMINISTRATION	The minimum time, in seconds, the link to the DACS must be failed for the DACS message log recovery action to occur.
IP_Address	IP Address , GUI NE PROVISIONING Form	IP address for TELNET DACS.
DACS_UserName	DACS User Name , GUI NE PROVISIONING Form	User name provisioned at DACS and used to login with TELNET session.
Alm_Interv	Alarm Intervention , GUI NE PROVISIONING Form	Indicates whether alarm intervention is enabled/disabled at the DACS.

USER ADMINISTRATION Reports

Fields

Table A-16 displays the USER ADMINISTRATION report fields that can be customized for the DND Forms Interface Only.

Table A-16. USER ADMINISTRATION Report Fields

Name	Form of Origination	Description
Login	Login Name field, USER MANAGEMENT	The login name by which the user is known to the DND system.
Class	User Class field, USER MANAGEMENT	The type of login: OPERATOR, ADMIN, CONTROLLER.
User_Name	User Name field, USER MANAGEMENT	The name of the person owning the login.
Phone	Phone field, USER MANAGEMENT	User-defined value stating the user's telephone number.
Address	Address field, USER MANAGEMENT	User-defined value stating the user's address.
City	City field, USER MANAGEMENT	User-defined value stating the user's city.
Alarm	Alarms Audible field, USER MANAGEMENT	Whether or not an audible alarm should sound at the user terminal when a frame alarm occurs: ON or OFF.
Idle	UI Idle Option field, USER MANAGEMENT	The logoff threshold in seconds of terminal idle time.
Printer_Name	Printer Name field, USER MANAGEMENT	Printer Name
Type	Type field, USER MANAGEMENT	ASYNC, X25, LOCAL
Partition	Network Partition Name field <i>GUI:</i> USER ADMINISTRATION	The name of the GUI network partition the user is assigned to.

LOST RESPONSE LOG Reports

Fields

Table A-17 displays the LOST RESPONSE LOG report fields that can be customized for the DND Forms Interface Only.

Table A-17. LOST RESPONSE LOG Report Fields

Name	Form of Origination	Description
L_Date	None.	The date on which the DND issued the response.
L_Time	None.	The time at which the DND issued the response.
Request_Type	None	FRAME, NPC or CIRCUIT.
Status	None	S (Success) or F (Failure).
Message_No	None	The message number.
Denial_Message		The reason for denial.

24-HOUR PERFORMANCE MONITORING STATISTICS Reports

Fields

Table A-18 displays the 24-HOUR PERFORMANCE MONITORING STATISTICS report fields that can be customized for the DND Forms Interface Only.

Table A-18. 24-HOUR PERFORMANCE MONITORING STATISTICS Report Fields

Name	Form of Origination	Description
NPC_ID	NPC ID field, NPC PROVISIONING.	The NPC ID.
NPC_Type	NPC Type field, NPC PROVISIONING.	The NPC Type.
NPC_Hier	Number (Hier) field, NPC PROVISIONING	The hierarchical number of the NPC.
NPC_Ext	Number (EXT) field, NPC PROVISIONING	The extended number of the NPC.
CRC_Avg	CRC_AVG field, 24- HOUR PERFORMANCE	Average Cyclic Redundancy Check counts.
ES_Avg	ES_AVG field, 24-HOUR PERFORMANCE	Average Errored Seconds counts.
SES_Avg	SES_AVG field, 24- HOUR PERFORMANCE	Average Errored Severely Seconds counts.
UAS_Avg	UAS_AVG field, 24- HOUR PERFORMANCE	Average Unavailable Seconds counts.
FRER_Avg	FRER_AVG field, 24- HOUR PERFORMANCE	Average Framing Errors counts.
OFS_Avg	OFS_AVG field, 24- HOUR PERFORMANCE	Average Out of Frame Seconds counts.
CSS_Avg	CSS_AVG field, 24- HOUR PERFORMANCE	Average Control Slips Seconds counts.
CV_Avg	CV_AVG field, 24-HOUR PERFORMANCE	Average Coding Violations counts.
UATC_Avg	UATC_AVG field, 24- HOUR PERFORMANCE	Average Unavailable Time Count counts.
MER_Avg	MER_AVG field, 24- HOUR PERFORMANCE	Average Multiframe Error counts.

Table A-18. 24-HOUR PERFORMANCE MONITORING STATISTICS Report Fields (Continued)

Name	Form of Origination	Description
FEBE_Avg	FEBE_AVG field, 24-HOUR PERFORMANCE	Average Far End Bit Error counts.
FSES_Avg	FSES_AVG field, 24-HOUR PERFORMANCE	Average Far End Severely Errored Seconds counts.
FES_Avg	FES_AVG field, 24-HOUR PERFORMANCE	Average Far End Errored Seconds counts.
FUAS_Avg	FUAS_AVG field, 24-HOUR PERFORMANCE	Average Far End Unavailable Second counts.
LOFA_Avg	LOFA_AVG field, 24-HOUR PERFORMANCE	Average Loss of Frame Alignment counts.
ERS_Avg	ERS_AVG field, 24-HOUR PERFORMANCE	Average Errored Seconds counts.
SLIP_Avg	SLIP_AVG field, 24-HOUR PERFORMANCE	Average SLIP counts.
US_Avg	US_AVG field, 24-HOUR PERFORMANCE	Average Unavailable Second counts.
DM_Avg	DM_AVG field, 24-HOUR PERFORMANCE	Average Degraded Minutes counts.
SERS_Avg	SERS_AVG field, 24-HOUR PERFORMANCE	Average Severely Errored Seconds counts.
Collected	No. of Days Collected field, 24-HOUR PERFORMANCE	Number of days collected.
Reset	Reset field, 24-HOUR PERFORMANCE	Number of days since data was reset.
Error	Error field, 24-HOUR PERFORMANCE	Number of days data not collected.
CRC_24hr	CRC_24hr field, 24-HOUR PERFORMANCE	Cyclic Redundancy Check counts.
ES_24hr	ES_24hr field, 24-HOUR PERFORMANCE	Errored Seconds counts.
SES_24hr	SES_24hr field, 24-HOUR PERFORMANCE	Errored Severely Seconds counts.
UAS_24hr	UAS_24hr field, 24-HOUR PERFORMANCE	Unavailable Seconds counts.

Table A-18. 24-HOUR PERFORMANCE MONITORING STATISTICS Report Fields (Continued)

Name	Form of Origination	Description
FEBE_Avg	FEBE_AVG field, 24-HOUR PERFORMANCE	Average Far End Bit Error counts.
FSES_Avg	FSES_AVG field, 24-HOUR PERFORMANCE	Average Far End Severely Errored Seconds counts.
FES_Avg	FES_AVG field, 24-HOUR PERFORMANCE	Average Far End Errored Seconds counts.
FUAS_Avg	FUAS_AVG field, 24-HOUR PERFORMANCE	Average Far End Unavailable Second counts.
LOFA_Avg	LOFA_AVG field, 24-HOUR PERFORMANCE	Average Loss of Frame Alignment counts.
ERS_Avg	ERS_AVG field, 24-HOUR PERFORMANCE	Average Errored Seconds counts.
SLIP_Avg	SLIP_AVG field, 24-HOUR PERFORMANCE	Average SLIP counts.
US_Avg	US_AVG field, 24-HOUR PERFORMANCE	Average Unavailable Second counts.
DM_Avg	DM_AVG field, 24-HOUR PERFORMANCE	Average Degraded Minutes counts.
SERS_Avg	SERS_AVG field, 24-HOUR PERFORMANCE	Average Severely Errored Seconds counts.
Collected	No. of Days Collected field, 24-HOUR PERFORMANCE	Number of days collected.
Reset	Reset field, 24-HOUR PERFORMANCE	Number of days since data was reset.
Error	Error field, 24-HOUR PERFORMANCE	Number of days data not collected.
CRC_24hr	CRC_24hr field, 24-HOUR PERFORMANCE	Cyclic Redundancy Check counts.
ES_24hr	ES_24hr field, 24-HOUR PERFORMANCE	Errored Seconds counts.
SES_24hr	SES_24hr field, 24-HOUR PERFORMANCE	Errored Severely Seconds counts.
UAS_24hr	UAS_24hr field, 24-HOUR PERFORMANCE	Unavailable Seconds counts.

Table A-18. 24-HOUR PERFORMANCE MONITORING STATISTICS Report Fields (Continued)

Name	Form of Origination	Description
FRER_24hr	FRER_24hr field, 24-HOUR PERFORMANCE	Framing Errors counts.
OFS_24hr	OFS_24hr field, 24-HOUR PERFORMANCE	Out of Frame Seconds counts.
CSS_24hr	CSS_24hr field, 24-HOUR PERFORMANCE	Control Slips Seconds counts.
CV_24hr	CV_24hr field, 24-HOUR PERFORMANCE	Coding Violations counts.
UATC_24hr	UATC_24hr field, 24-HOUR PERFORMANCE	Unavailable Time Count counts.
MER_24hr	MER_24hr field, 24-HOUR PERFORMANCE	Multiframe Error counts.
FEBE_24hr	FEBE_24hr field, 24-HOUR PERFORMANCE	Far End Bit Error counts.
FSES_24hr	FSES_24hr field, 24-HOUR PERFORMANCE	Far End Severely Errored Seconds counts.
FES_24hr	FES_24hr field, 24-HOUR PERFORMANCE	Far End Errored Seconds counts.
FUAS_24hr	FUAS_24hr field, 24-HOUR PERFORMANCE	Far End Unavailable Second counts.
LOFA_24hr	LOFA_24hr field, 24-HOUR PERFORMANCE	Loss of Frame Alignment counts.
ERS_24hr	ERS_24hr field, 24-HOUR PERFORMANCE	Errored Seconds counts.
SLIP_24hr	SLIP_24hr field, 24-HOUR PERFORMANCE	SLIP counts.
US_24hr	US_24hr field, 24-HOUR PERFORMANCE	Unavailable Second counts.
DM_24hr	DM_24hr field, 24-HOUR PERFORMANCE	Degraded Minutes counts.
SERS_24hr	SERS_24hr field, 24-HOUR PERFORMANCE	Severely Errored Seconds counts.
Alarm_State	Alarm_State field, 24-HOUR PERFORMANCE	Current alarm state on the NPC.

Error Messages

B

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Background

Introduction

The DND software will report errors when it encounters unusual situations it cannot handle. These error messages can appear in three places:

- **The DND Console**

These are messages from the UNIX operating system, but some system related DND messages may also be broadcast here as well. These are not described here but will indicate problems with workstation devices or workstation resources. It is always recommended that a Console window be permanently displayed on the DND workstation.

- **The DND Forms Status Line and the DND GUI Status Summary Window**

A number of messages may be displayed on the DND status line. Most of these are self explanatory except for those messages that indicate unusual internal conditions. When the DND software detects an unusual or invalid condition, it signal this through a STATUS message and also supplies trace information in an internal INFORMIX table setup specifically to record error messages. Refer to Table B-1 for a list of messages and corrective actions.

- **DND GUI Application Messages**

These messages appear in the Connection and Display Status field on the DND Main Window. They indicate errors encountered by the DND GUI application running on the DND browser. Refer to Table B-2 for a list of messages and corrective actions.

Purpose

This appendix provides:

- A listing of Status error messages
 - Troubleshooting suggestions for:
 - DND resource problems
 - DND internal software problems.
 - A listing of DND application messages
-

Status Error Messages

Table B-1 contains a complete listing of status error messages that appear in the Status Summary window on the DND Main Window (DND GUI) or on the top of each form (DND Forms).

Table B-1. Status Error Messages

Error Message	Description	Error Code and Number	Corrective Action
"A database error occurred."	Redundant with DB_ERR	DB_ERROR 1096	See Resource Problems in Troubleshooting
"A database error prevented command completion"	An error was detected reading, writing, opening or closing a database table. In some cases this may be a logical error (i.e. an expected/unexpected record was not found/found) or it may be a physical error (e.g. the table does not exist).	DB_ERR 1023,	See Resource Problems in Troubleshooting
"A history file error occurred."	The process which maintains the DACS message log (history file) was unable to open, close or otherwise set the history file.	HISTORY_FILE_ERROR 1006	See Resource Problems in Troubleshooting
"A message failure occurred"	This is an error in using the interprocessor communication facility of UNIX. A variety of failures may account for this, most commonly it is because the receiving process does not exist. This can commonly happen (i.e. normal operations) when a DACS link failure occurs. That is, a message was being sent to the process which handles DACS communications, and the DACS link went down. This was very common in R4.0 and earlier releases. In R4.1.2 and later releases, this is no longer reported as an "error."	IPC_FAILURE 1005	See Resource Problems in Troubleshooting
"A message processing error occurred."	A process has received an unexpected message. Each message is keyed with a message type, the processed received a message type it is not coded to handle.	MSG_ERR 1012	See Software Failure Resolution in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"An invalid parameters error occurred."	Typically the default of a c language switch statement, and this indicates that an unexpected condition/definition was passed to a software routine. Similar to SOFT_ERR.	INV_PARM_ERR 1031	See Software Failure Resolution in Troubleshooting
"An SNMP error occurred"	This message will appear when an error is detected in the SNMP interface to one of the nodes. This may happen when the DND is attempting to query information and receives unexpected data, or when unexpected data is received in an autonomous trap message from the device. It may also indicate an error had occurred in the SNMP BRASS agent software.	SNMP_ERR 5127	If the problem occurs once, then no corrective action is required. If the problem persists or is periodic, then see SNMP Error Resolution in Troubleshooting
"An unexpected message or a completion message to a previous command which timed out has been received by this browser (job number #)."	This message appears in the STATUS SUMMARY window on the DND Main screen in possible response to a previous form action. The form action had previously timed out at the browser interface. The job number as displayed in the message corresponds to the job number of the command which timed out, indicated in the time out message (T_B_UA_TIMER_EXPIRE 2602) on the form.	T_B_LATE_COMPL 3027	None
"An unexpected response was received."	While waiting for a response to a command sent to the DACS, an unexpected response was received (e.g. not a timeout, or a reply). Typically, indicative of a software defect. The command in progress has been aborted.	UNEXP_RSP 1084	See Software Failure Resolution in Troubleshooting
"An unexpected signal was received."	Processes set themselves up to receive and do certain processes upon receiving certain UNIX signals (e.g. alarm clock signal). A process has received a signal it did not expect or set itself up to handle.	UNEXPECTED_SIGNAL 1004	See Software Failure Resolution in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"A printer error occurred."	As part of printer operations, when printer logging is enabled, the process (e.g. history process to log dacs commands) was unable to open a UNIX communication pipe to the UNIX line printer software.	LP_PIPE_ERROR 1008	See Resource Problems in Troubleshooting
"A receive message error occurred."	Interchangeable with IPC_FAILURE when receiving messages.	RECEIVE_ERROR 1010	See Resource Problems in Troubleshooting
"A send message error occurred."	Interchangeable with IPC_FAILURE when sending messages.	SEND_ERR 1011	See Resource Problems in Troubleshooting
"A site port error occurred."	A serial SNIDER port was unable to be opened or configured for unknown reasons, possibly because it is being used.	DACS_PORT_ERROR 1001	See Resource Problems in Troubleshooting
"A software error occurred"	A piece of software has encountered a condition it is not prepared to handle. Typically this are indicative of software deficiencies, or unexpected error handling has not been coded.	SOFT_ERR 1030	See Resource Problems in Troubleshooting
"A temporary history file error occurred."	Similar to HISTORY_FILE_ERROR	TMP_HIST_FILE_ERROR 1007	See Resource Problems in Troubleshooting
"Audit/synchronization autonomously aborted."	An audit sync that is in progress has stopped itself due to an internal verification error (software error).	ABORT_SYNC 4539	See Software Failure Resolution in Troubleshooting
"Bad process ID."	A reference was made to a process which is not identified in the DND system.	OAM_BAD_PROC_ID 3075	See Software Failure Resolution in Troubleshooting
"DND failed to attach to shared memory segment."	Shared memory is used to store global information between process. An attempt to attach to the shared memory has failed.	SHMAT_ERR 1020	See Resource Problems in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"Failed to open a file."	Many processes open and write to files for many different reasons. This signifies that an open, close, read or write of an ordinary UNIX file failed.	OPEN_FILE_ERR 1022	See Resource Problems in Troubleshooting
"Memory allocation failed."	A process was unable to allocate memory from the system memory pool, typically because it is exhausted.	ALLOC_ERR 1021	See Resource Problems in Troubleshooting
"Message log sequencing error. Details in error log"	During a message log recovery, the DACS, when a link is restored, the message log sequencing is examined, if an out of sequence message is detected, a message is output.	MSG_SEQ_ERR 5099	See Software Failure Resolution in Troubleshooting
"No more SVC available locally"	Currently for the FT feature, the selected link is established directly by the X.25 software, if no more SVCs on any link can be found locally, then this message is output.	B_T_X25_OUTSVC_L 5079	See Resource Problems in Troubleshooting
"No more SVC available locally on Backup link"	Similar to X25_OUTSVC_L_P, except for the backup link.	X25_OUTSVC_L_B 5021	See Resource Problems in Troubleshooting
"No more SVC available locally on Primary link"	Similar to B_T_X25_OUTSVC_L, except that for non-FT customers, the link is specified at frame provisioning time. The SVCs on the primary link are exhausted.	X25_OUTSVC_L_P 5020	See Resource Problems in Troubleshooting
"No more SVC available remotely on Backup link"	Similar to X25_OUTSVC_R_P except this occurs on the backup link.	X25_OUTSVC_R_B 5023	See Resource Problems in Troubleshooting
"No more SVC available remotely on Primary link"	Similar to X25_OUTSVC_L_P, except the problem is on the remote side of the connection.	X25_OUTSVC_R_P 5022	See Resource Problems in Troubleshooting
None.	No longer used.	X25_PROTOCOL_ERROR 5001	

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"No such reconfiguration circuit."	May accompany an Automatic Replan request. There are no records associated with the requested routing plan.	NO_PPRCKT 1511	See Software Failure Resolution in Troubleshooting
"No users."	An error has occurred in trying to read the password file for a user, the user does not exist.	OAM_NO_USER 3098	See Software Failure Resolution in Troubleshooting
"Passthrough fork failed."	Similar to OAM_FORK_FAILED, except applied to the User Interface process when attempting to start a Passthrough session.	UI_FORK_FAIL 2002	See Resource Problems in Troubleshooting
"Passthrough pipe failed."	Similar LP_PIPE_ERROR, but applied to other operations that require UNIX pipes, such as passthrough and other printer actions.	PIPE_FAIL 2001	See Resource Problems in Troubleshooting
"Passthrough request failed."	An error was detected when the user attempted to exit a passthrough session, may be accompanied by other system error output. Typically this was in inability to release resources.	PASSTHRU_FAIL 2000	See Software Failure Resolution in Troubleshooting
"Reconfiguration ID mismatch."	The reconfiguration plan ID does not match the ID of the database.	MISMATCH_PPR 1509	See Software Failure Resolution in Troubleshooting
"Reconfiguration sequence mismatch."	May accompany an Automatic Replan request, when deleting a circuit from the plan, there is a mismatch in the sequencing of the circuit plan.	MISMATCH_CKT_SQN 1508	See Software Failure Resolution in Troubleshooting
"Size error: echo response ID line."	The construction of a line in the ERP log has created a string greater than the maximum size that can be stored in the log. The string has been truncated prior to insertion in the log.	ERPIDLINE_SZERR 4514	See Software Failure Resolution in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"Size error: input database name."	Similar to DACSNAME_ERR, except the associated database to the DACS has failed verification.	DBNAME_SZERR 4513	See Software Failure Resolution in Troubleshooting
"Size error: site name."	Similar to DACSNAME_ERR, except the size of the DACS name, as received, fails verification.	DACSNAME_SZERR 4529	See Software Failure Resolution in Troubleshooting
"The backbone leg must be the last leg."	When setting up a multipoint circuit (virtual, dmb), the backbone leg must be the last to be deleted. This typically accompanies a circuit provisioning denial.	BBL_NOT_LAST 1058	See Software Failure Resolution in Troubleshooting
"The browser interface failed waiting for a completion response from the system. The command (job number #) may still be in progress and complete later."	A command or action may take longer than the integrity timer set for these responses. The form which initiated the action will display this message. The job number may be retained, and a STATUS message will be displayed if that command or action ultimately completes.	T_B_UA_TIMER_EXPIRE 2602	See Software Failure Resolution in Troubleshooting
"The calling function is invalid."	A message was received by a process, but from an unknown sender.	BAD_SENDER 1517	See Software Failure Resolution in Troubleshooting
"The circuit action is invalid"	A circuit has an invalid status and cannot be normalized (un-altroute).	BAD_ACTION_ST 1044	See Software Failure Resolution in Troubleshooting
"The circuit bandwidth is invalid."	An invalid bandwidth was received by circuit provisioning, it was less than 1 or greater than 32 channels in width. Typically accompanied by a circuit provisioning failure.	BAD_BW 1045	See Software Failure Resolution in Troubleshooting
"The circuit bandwidth type is invalid."	Internal circuit provisioning checking has received a bad bandwidth type.	BAD_BWTYPE 1046	See Software Failure Resolution in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"The circuit channel is invalid."	A request was made to operate on a channel that failed validation (e.g. greater than 32), for example an echoed response was received from the DACS that was incorrect.	CH_SZERR 1063	See Software Failure in Troubleshooting
"The circuit class is invalid."	Typically accompanied by a circuit provisioning failure, this indicates that the software has received an invalid circuit class (e.g. FDX, HDX....LEG). The circuit class received is not a member of the known circuit classes. This can possibly happen due to database corruption, a software error or an improperly parsed DACS message, all of which imply software defect and should be reported to technical support.	BAD_OPERATION 1052	See Software Failure in Troubleshooting
"The circuit does not exist."	An operation was attempted on a circuit, but that circuit did not exist, i.e. an echoed response was received from a DACS, which operated on a circuit that the DND has no record of, or a pre-planned route operation was requested on a circuit which does not exist.	NO_CKT 4533	See Software Failure in Troubleshooting
"The DBA process died"	The lock monitor process controls single user access to the database. The lock monitor process has been restarted and the application processes have been notified, all in progress actions are aborted. The lock monitor process will exit if it has encountered an internal software defect, or more likely it is unable to allocation more memory to maintain its lock request queues.	DBA_DIE 1106	See Resource Problems in Troubleshooting
"The message length is bad"	The maximum length string that can be passed through a "passthrough" session, or through a "passthrough script" is 140 characters, this has been exceeded.	STRING_TOO_LONG 1000	See Software Failure Resolution in Troubleshooting

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"The message type is invalid."	A message was received a software process, but one or more of its internal contents fail consistency checking or some other validation of the parameters.	BAD_MSG 1051	See Software Failure Resolution in Troubleshooting
"The new reconfiguration plan must have a unique ID."	Typically accompanies deny of an ARP request to CREATE a pre-planned route, the ID has already been used.	DUPL_PPRID 1507	See Software Failure Resolution in Troubleshooting
"The NPC specification is inconsistent."	Circuit provisioning detected and internal problem with the NPC number in the provisioning request.	INCONSISTENT_NPC 1070	See Software Failure Resolution in Troubleshooting
"There are no more spare legs."	The BCON circuit already has the maximum of 99 legs, or the virtual circuit has the maximum of 20 legs.	OVER_MAX_LEG 1078	None
"The reconfiguration LIST is invalid."	An error was found in a pre-planned routing list, the list appears to be out of order, the sequence of the list can be altered with the CHECK action.	BAD_PPR_LST 1503	See Software Failure Resolution in Troubleshooting
"The virtual circuit specification is inconsistent."	There is a mismatch between internal virtual circuit number and the internal circuit number.	MISMATCH_VCKT 1075	See Software Failure Resolution in Troubleshooting
"The virtual NPC/channel is invalid."	The virtual (site only) provisioning command could not be executed because the circuit was not found in the database and no virtual NPC was specified.	BAD_VEFT 1056	See Software Failure Resolution in Troubleshooting
"Too many ERP created circuits for the same points. Cleanup database now!."	The system is running out of internally generated circuit names for these end points in response to echoed responses from the DACS. The circuits created through echoed response should be modified and given proper names. This error will occur for the creation of multipoint circuits only.	ALT_CKTID 4505	Rename circuits created by echoed response processing

Table B-1. Status Error Messages (Continued)

Error Message	Description	Error Code and Number	Corrective Action
"Unable to get site name for system."	Verification of the DACS "name" has failed, the process has received a message but the associated DACS information is incorrect and is not present in the common database.	DACSNAME_ERR 4517	See Software Failure Resolution in Troubleshooting
"UNIX system error (cannot exec process)."	Similar to OAM_FORK_FAILED.	OAM_EXEC_FAILED 3082	See Software Failure Resolution in Troubleshooting
"UNIX system error (cannot fork)."	An attempt to spawn another process has failed, possibly because of system resources, possibly because the executable for the process cannot be found.	DACS_FORK_FAILED 1009	See Resource Problems in Troubleshooting
"UNIX system error (cannot fork process)."	Similar to DACS_FORK_FAILED but applied to the OAM process which is the parent process for all DND processes. OAM was not able to start or restart a process, possibly due to system resources, or due to the fact that the executable does not exist (i.e. program installation error).	OAM_FORK_FAILED 3083	See Resource Problems in Troubleshooting
"UNIX system error (message queues are gone)."	A process' message queue has inexplicably been removed from global shared memory.	OAM_MSGQ_GONE 3085	See Software Failure Resolution in Troubleshooting

Troubleshooting

Overview

There are only two classifications of error described in this section:

- Errors that indicate DND resource problems
- Errors that indicate a DND internal software problem (bug).

Hardware or Solaris internal problems (bugs) problems usually manifest in more severe ways, such as CPU panic messages, erratic screen or keyboard behavior, or UNIX messages that appear on the system console. It is always good practice to keep a console window open and periodically (daily) check to see if any messages are present. Disk, printer, asynchronous port, X.25, and tape drive, problems are often written to the console. These types of problems are beyond the scope of this manual.

If you suspect an installation problem (for example, unable to connect to the DND server) contact your next level of support.



WARNING:

All troubleshooting procedures should only be done on the DND server and by the DND system administrator.

Resource Problems

Resource problems relate to the following types of errors:

- Free disk space
- RAM
- CPU usage and processing
- Internal UNIX resource.

Resource problems may also be evident on the system console as well. The following errors from Table B-1 may indicate resource problems on the DND:

- ALLOC_ERR
- B_T_X25_OUTSVC_L
- DACS_FORK_FAILES
- DACS_PORT_ERROR
- DB_ERR

(Continued on next page)

Troubleshooting (Continued)

Resource Problems (Continued)

- DB_ERROR
- DBA_DIE
- HISTORY_FILE_ERROR
- IPC_FAILURE
- LP_PIPE_ERROR
- OAM_FORK_FAILED
- OAM_EXEC_FAILED
- OPEN_FILE_ERR
- PIPE_FAIL
- RECEIVE_ERROR
- SEND_ERR
- SHMAT_ERR
- SOFT_ERR
- TMP_HIST_FILE_ERROR
- UI_FORK_FAIL
- X25_OUTSVC_L_P
- X25_OUTSVC_L_B
- X25_OUTSVC_R_P
- X25_OUTSVC_R_B.

Resource Problem Resolution

When one of these errors occurs, take the following actions:

1. Installation problems may cause some of the abnormal behaviors. The user should insure that:
 - Proper amount of RAM has been installed
 - X.25 package has been installed
 - X.25 network is operating properly
 - There are no other software applications using memory, disk and TTY resources.

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Troubleshooting (Continued)

Resource Problem Resolution, Continued

2. If a process is a runaway, stuck, or insane process (running and consuming resources but doing no real work), one way to detect this is to use the following UNIX command:

```
unix> /usr/ucb/ps -aux | head
```

The response will be of the following form:

USER	PID	%CPU	%MEM	SZ	RSS	TT	S	START	TIME	COMMAND
root	401	50.1	0.8	2856	1984	?	S	09:14:12	0:00	userint -f -u
root	402	0.1	0.8	2856	1984	?	S	09:14:12	0:00	/usr/ems/bin/proc2
root	403	0.1	0.8	2856	1984	?	S	09:14:12	0:00	/usr/ems/bin/proc3

In this example, the %CPU utilization of the first process on the list is named `userint`, indicated that it is consuming a great deal of the system. If the system is known to be idle and no reason can be found to determine the cause of this, then this process is possibly in an error state. A process that is persistently consuming more than 20% to 30% CPU is possibly in an "insane" condition.

There is a known problem where, if the CDE window manager exits with one or more user interfaces up, the "userint" process may not die.

It is possible to kill this process with the following command:

```
unix> kill -9 <PID>
```

Where <PID> in this case would be 401.



CAUTION:

Be careful when killing processes. Most processes will restart, however, some may not and cause serious system damage. Whenever in doubt, contact your next level of support with the data you have collected.

3. If installation errors are not suspect, then typically resource problems occur because of DACS activities. Significant activity on a single DACS or on multiple DACS may exceed the capacity of the workstation. Wait for the activity to diminish.

Isolate the offending DACS by observing DACS activity in the DND Forms Interface Multiplexed Passthrough for each DACS to identify busy DACS and then modify the DACS behavior.

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Troubleshooting (Continued)

Resource Problem Resolution, Continued

If improper behavior is still apparent, the administrator can remove the DACS from service.

4. Actions can cause temporary and residual files to be created in various places. For example, a report operation requires storage in /tmp and stores the final report in /usr/ems/reports. The storage required in /tmp is oftentimes quite large. User data (e.g. tar files) have also been known to consume excessive amounts of data. You can observe an overall summary of utilization by using the following command:

```
unix> df -k
```

The response will be of the following form:

Filesystem	kbytes	used	avail	capacity	Mounted on
/dev/dsk/c0t0d0s0	1539719	89715	1446155	6%	/
/dev/dsk/c0t0d0s6	2011919	629605	1375608	32%	/usr
/proc	0	0	0	0%	/proc
fd	0	0	0	0%	/dev/fd
swap	392840	1592	391248	1%	/tmp

Primary file systems are the "root" file system (/), the "user" file system (/usr) and swap (also virtual storage). A capacity utilization of 80% or greater in any of these implies a possible problem and typically usage is normally much less.

To seek out files on disk which are consuming a great deal of space, the following commands are often useful:

```
unix> du
```

```
unix> du -s
```

The first command will provide a recursive display of all files and file systems from the current directory downward. The second will provide a summary display of the current directory utilization. An example output is as follows:

```
unix> du -s /usr
```

```
1259576 /usr
```

This means that /tmp is currently consuming 1,259,576 blocks of 512 bytes each. This implies disk usage of approximately 0.6 Mb.

(Continued on next page)

Troubleshooting (Continued)

Resource Problem Resolution, Continued

5. To monitor the overall performance information on the system, use the `vmstat` command. Its output requires particular expert interpretation, but the on-line UNIX manual (e.g. `man vmstat`) provides the detailed information. An example usage is:

```
unix> vmstat 5 5
```

Which implies a sample of 5, every 5 seconds. An example output is as follows:

procs			memory		page				disk				faults		cpu						
r	b	w	swap	free	re	mf	pi	po	fr	de	sr	s0	s6	--	--	in	sy	cs	us	sy	id
0	0	0	486200	43832	0	278	23	15	32	0	5	12	0	0	0	292	2954	265	8	7	86
0	0	0	387992	6000	0	100	0	0	0	0	0	1	0	0	0	256	972	148	2	1	97
0	0	0	387922	5992	0	0	0	0	0	0	0	7	0	0	0	256	112	103	0	1	99
0	0	0	387992	5984	0	28	0	0	0	0	0	5	0	0	0	237	476	131	0	1	99
0	0	0	387922	5984	0	0	0	0	0	0	0	0	0	0	0	207	96	97	0	0	100

The last column, `cpu (id)`, is CPU idle percentage. This shows that idle time is 97 to 100%.

6. Problems may arise with communication to one of the SCSI devices. These are the tape drive and the 16-port and 32-port Serial Expansion Units (SEUs). If any of these have been powered down or recabled, problems accessing the SCSI bus may occur. These can be cleared by:
 - a. Insuring that the last device on the SCSI bus chain is terminated with a SCSI terminator (typically the tape drive is the last device).
 - b. Forcing the workstation to re-evaluate the SCSI devices on the workstation. Perform this by:
 - i. Shutting down the workstation to the `ok>` prompt (SYSTEM ADMINISTRATION form -> SHUTDOWN form -> IMMEDIATE option -> SHUTDOWN)
 - ii. Power cycle the devices (i.e. turn then on/off)
 - iii. Reboot the machine with a special option

```
ok> reboot -r
```

(Continued on next page)

Troubleshooting (Continued)

**Resource Problem
Resolution,
Continued**

7. Memory problems may occur for a number of reasons. "Swap" space is virtual memory contained on disk. If a large number of applications are running (and the Netscape browser does require a large amount of swap space), then swap space may run out. Another type of memory resource is internal "malloc" memory, a fixed pool of which is assigned to each process. Under heavy load conditions (i.e. very long duration of heavy DACS message activity), malloc memory may run out.

To clear these errors, attempt the following steps (proceed with each possibility until the problem disappears:

- a. Try to reduce the number of applications running on the DND server temporarily. Logoff of the Forms Interface, close applications and close as many windows as possible.
 - b. REMOVE/RESTORE the DACS connection to the babbling DACS. Restoring the DACS restarts the processes to that DACS and frees up memory.
 - c. Restart the DND. This restarts all of the processes and frees up memory (SYSTEM ADMINISTRATION form -> SHUTDOWN form -> IMMEDIATE option -> RESTART)
 - d. Reboot the DND (SYSTEM ADMINISTRATION form -> SHUTDOWN form -> IMMEDIATE option -> REBOOT).
 - e. If Steps c and d cannot be performed, then the following commands will reboot the DND:
 - i. Login as root
 - ii. Type the following at the prompt:
unix> # reboot
-

Troubleshooting (Continued)

Software Failure Resolution

All of the errors that do not appear to be resource problems, based on the prior section, may indicate a software failure. Typically these occur during some command activity or some autonomous activity as a result of a message from the DACS. When these occur and cause a command or action to not successfully complete, take the following actions:

1. Write down the STATUS message that appears on the STATUS line.
2. Identify and note the command or action that cause the abnormal STATUS message.
3. Write down the state of the system at the time of the error, including the following information:
 - Which form was being filled out
 - What fields were filled in
4. If the error is associated with some DACS messages (for example, circuit provisioning action, NPC provisioning, or ERP) use the DND Forms Interface REPORTS form to display the HISTORY LOG for that DACS and print the last 3 or 4 pages in the log.
5. Perform a backup of the COMMON database to tape.
6. If it is clear that the error was associated with a particular DACS, also backup that particular DACS to another tape.
7. Send all of the above information to your next level of support, identifying this as a possible software problem.

SNMP Error Resolution

If the error appears to be caused by an SNMP device, take the following actions:

- Retrieve the error log file. Additional descriptive information is often contained in the error log. Retrieve the error log by performing the following steps:
 1. Unload the internal error log by typing the following at the UNIX prompt:

```
unix> echo "select * from lgser where erdata=today"
| isql ems
```
 2. Read the error log file to determine what is wrong.

(Continued on next page)

Troubleshooting (Continued)

SNMP Error Resolution, Continued

- If the previous action does not help you, perform the following steps:
 1. Insure that the BRASS agent software is installed. This is installed in the /usr/snmp directory. If the BRASS agent is not installed, install it using the instructions from the *DACS II Network Director (DND) Installation Manual*.
 2. Insure that the BRASS agent process is running by typing the following command at the UNIX prompt:


```
unix> ps -ef | grep brassagt
```


If the BRASS agent process is not running, then reboot the system to restart it.
 3. Make sure that the correct elements are identified in NE PROVISIONING, and that the device is correctly identified.
 4. Make sure communications exist between all of the elements and the DND server. Attempt to “ping” or “telnet” to the device.
 5. If the problem still persists, contact your next level of support, identifying this as a possible software error.
-

DND Application Messages

Table B-2 contains the most common DND application messages displayed in the Connection and Display Status field.

Table B-2. DND Application Messages

Error Message	Description	Corrective Action
"Error occurred when sending a message."	This message appears on the DND Login form. The DND was unable to login to the system because no reply was received from the application software. The system may be unusually busy and unable to honor the login request.	Retry your operation. If the condition persists, look for other signs of excessive CPU usage. If there are none, then the application software that handles the login may not be running and it may be necessary to restart the DND software.
"Exception: Netscape's network connection was refused by the server. The server may not be accepting connections or may be busy. Try connecting later."	This message appears on the Connection and Display Status field. The web server is not running at the DND host or the host machine is not running.	Use the browser to connect to the Netscape server, as per the <i>DND Installation Manual</i> and attempt to restart the server.
"Server error: java.io.IOException:"	This message appears on the Connection and Display Status field. It is likely that the DND is not installed correctly. The server was unable to find the application software in order to establish a request. For remote clients, it could mean that the LAN connection to the DND is also not operating.	Pull up a UNIX terminal window on the DND server and search for the files <i>/usr/ems/bin/dnd.cgi</i> and <i>/usr/ns-home/docs/dnd/dnd.cgi</i> . If the files are not present, then the correct version of the DND has not been installed correctly. Install DND from the CD.
"The DND server received an error response contacting the User Agent."	This message appears on the Connection and Display Status field. If this is seen from the browser when you are logged in and operating normally, it means that a browser request for some information timed out waiting for a response from the DND application software. This may occur when the browser to the host connection is very slow or the DND is extraordinarily busy and unable to reply promptly.	A single occurrence of this message can be ignored. Continued or persistent occurrence may imply an overloaded system, or may imply that the application software unexpectedly died without properly logging the user off. Restart the DND. If that fails, contact your DND Technical Support personnel.

Abbreviations and Acronyms

Numerics

4GL
Fourth-generation language

A

A
Alarm indication signal

AAC
Acculink™ Access Controller

ac
Alternating current

AC
Alternating current

adm
Administrat-or, -ive

admn
Administrat-or, -ive

AIS
Alarm Insertion Signal

Alm
Alarm

ALM
Alarm

ALMS
Alarms

alt
Altroute

ATZ
Alternate Time Zone

ANSI
American National Standards Institute

arp
Automatic Reconfiguration Plan

ARP
Automatic Reconfiguration Plan

ASCII
American Standard Code for Information Interchange

ASI
Alarm Summary Indicator

AT&T
American Telephone and Telegraph

AX (DACS II AX)
Access Cross-connect

B

b
Bits

B
Bytes

B
Both red and yellow alarms

BBL
Backbone leg

BCD
Business Communications Device

Bd
Baud

BER
Bit-error rate

bf
Boldface

BF
Boldface

BMTR
Backup Memory Transfer Alarm

bps
bits per second

BPSS
Basic Packet-Switching Service

BRD
Broadcast

C

CAS
Channel Associated Signaling

CCB
Cross-connect Buffer

CCI
Clock and control interface

CCITT
Comite Consultatif International Telegraphique et Telephonique

CCM
Cross-connect Module

CCN
Cross-connect Network

CCNI
CCN interface

CCU
Cross-connect Unit

cd
Change Directory

CEF
Capacity Expanded Frame

CEPT
Conference European Postale et Telephonique

CGA
Carrier-group alarm (carrier group = digroup)

Ch
Channel

CH
Channel

Chan
Channel

CHAN
Channel

CHG
Change

CI
Communications interface

Ckt
Circuit

CKT
Circuit

ckts
Circuits

CLR
Clear

cmd
Command

CNC
Customer Network Controller

CO
Central Office

COFA
Change of Frame Alignment Error

COMCODE
Component Code

cond
Condition

CP
Circuit Pack

CPU
Central Processing Unit

CR
Critical

CRC
Cyclic Redundancy Check

CRIT
Critical

CRO
Clock Reference Oscillator

CRT
Cathode Ray Tube

CRTE
Create

CSS
Controlled slip seconds

Ctrl
Control

CTS
Clear to Send

CUS
Customer

CV
Coding violation

cw
Constant Width

CW
Constant Width

D

DACS
Digital Access and Cross-connect System

dacsadm
DACS administrator

DB
Database

dc
Direct current

DCC
Disconnect-channel code

DCD
Data Carrier Detect

DCE
Data Circuit-terminating Equipment

DCON
Disconnect

dd
Day (2 chars.)

DD
Day (2 chars.)

DDC
Default Disconnect Code

DDC
Dual-digroup card

DDS
Digital Data System

DE
Digroup-enhanced

DEV
Device

DEX
Digital Electronic Cross-connect System

DGRTH
De-growth

DISC
Disconnect

DM
Degraded Minutes

DM
Dual multiplexer

DMA
Deferred Maintenance Alarm

DMB
Digital Multipoint Bridge

DND
DACS II Network Director

DPC
Dual primary circuit

DSPU
Digital Signal Processing Unit

DSR
Data Set Ready

DSX
Digital Signal Cross-Connect

DS0
Digital signal level 0

DS1
Digital signal level 1

DS3
Digital signal level 3

DS3U
DS3 Unit

DSPI
Digital Signal Processing Interface

DTE
Data Terminal Equipment

DTR
Data Terminal Ready

E

E
Extended

E&M
Earth and Magnetic

ECCN
Extended or Expanded cross-connect network

ECEF
Extended Capacity Expanded Frame

EDDC
Enhanced Dual Digroup Circuit

EDPC
Enhanced Dual Primary Circuit

EER
Excessive error rate

EFT
External Facility Termination

EIA
Electronic Industries Association

EISA
Extended Industry Standard Architecture

eq
Equipment

EQD
Equipped

EQL
Embedded Query Language

EQPT
Equipment

ERM
Echoed Response Message(s)

ERM
Errored Minutes

ERP
Echoed Response Processing

ERS
Errored Seconds

ES
 Errored seconds

Esc
 Escape

ESD
 Electrostatic discharge

ESDI
 Enhanced Small Device Interface

ESQL
 Embedded Structured Query Language

EST
 Eastern Standard Time

ETSI
 Extended time slot interchange

Ext
 Extended

Extd
 Extended

F

F
 Female

FACE
 Framed Access Command Environment

FAX
 Facsimile

FC
 Format converter

FDD
 Floppy Disk Drive

FDX
 Full duplex

FE
 Far end

FEBE

Far end block error

FFER

Frame Format Error rate

FLI

Facility Line Interface

FMLI

Form and Menu Language Interpreter

FMT

Format

Fr

From

FR

From

FRER

Framing errors

FTM

Facility Terminating Module

FTMI

Facility Terminating Module Interface

FTU

Facility Terminating Unit

FUAS

Far end unavailable seconds

FW

Framing Word

FX

Foreign Exchange

FXO

Foreign Exchange Office

FXS

Foreign Exchange Subscriber or Station

G

GMT
Greenwich Mean Time

GPSC
General Purpose Synchronous Controller

GRP
Group

GRTH
Growth

H

H
Hierarchical

HDU
Hard Disk Unit

HDX
Half duplex

HSU
High Speed Unit

I

IC
Integrated Circuit

ID
Identifier or identification

IDLID
Idled

IF
Interface

IMACS
Integrated Multiple Access Communications Server

IMX
Informix

INCL
Inclusive

INFO
Informational

ipc
Interprocess communications

IP
Internet Protocol

IPC
Intelligent Ports Card

IRQ
Interrupt request

IS
In service

ISA
Industry Standard Architecture

ISO
International Organization For Standardization

ISX
Integral Shelf Cross-connect

ITU-T
International Telecommunications Union - Telephony

IW
Insertion Word

K

k
Kilo or x 1000

kb
Kilobits

kB
kilobytes

KB
kilobytes

kbd
Keyboard

KBD
Keyboard

Kbps
Kilo-bits per second

L

L
Local multiframe alarm

LAN
Local Area Network

LED
Light Emitting Diode

LFER
Line Format Error rate

lgn
Login

LMA
Local Multiframe Alarm

LMA
Loss of Multiframe Alignment

Loc
Location

LOFA
Loss of Frame Alignment

LOS
Loss of Signal

LP
Logging Printer

M

M

Male

M

Remote multiframe alarm

M

Mega or x 1,000,000

Maj

Major

MAJ

Major

MAX

Maximum

Mb

Megabits

MB

Megabytes

MB

Multipoint Bridge

Mbps

Megabits per second

MC

Main Controller

MCOND

Maintenance Condition

MEM

Memory

MER

Multiframe errors

MI

Minor

MI

Maintenance information

MIB
Management Information Base

MIN
Minor

Mj
Major alarm

MJ
Major alarm

MJ
Multipoint Junction Unit

MJU
Multipoint Junction Unit

MMFG
Multiplexer-Multiplexer Interface Unit Functional Group

mml
HuMan Machine Language

MML
HuMan Machine Language

mmm
Month (3 chars.)

MMM
Month (3 chars.)

MN
Minor Alarm

MP
Multipoint

msg
Message

mux
Multiplex, -ed, -ing, -or

MUX
Multiplex, -ed, -ing, -or

M1X
DS1 to DSX Multiplexer

N

NAM

No a-to-mu-law conversion

NAS

North American Standard

NAU

Network-access unit

NE

Near end

net

Network

NFS

Non-framing Word Setting

NFW

Non-framing Word

NI

Network Interface

NMS

Network Management System

NPC

Network Processing Circuit

NPCTP

NPC Test Port

NTR

No Transmit

Num

Number

O

OCN

One-way cross-connect

OCU-DP
Office Channel Unit-Data Port

OFS
Out-of-frame seconds

OOF
Out of Frame

OOS
Out of service

O&M
Operation and Maintenance

openwin
OpenWindows

P

PAM
Pulse Amplitude Modulation

PARAM
Parameter

passwd
password

PB
Primary block

PBA
Primary Block Alarm

PBF
Primary block failure

PBX
Private Branch Exchange

PC
Personal computer

PCM
Pulse Code Modulation

PDN
Packet Data Network

PDS
Product Documentation Standard

PEC
Price Element Code

PII
Peripheral Interrupt Interface.

PMA
Prompt Maintenance Alarm

PU
Power Unit

PVC
Permanent Virtual Circuit

PWR
Power

Q

QIC
Quarter-Inch Cartridge

R

R
Red alarm

RAI
Remote Alarm Indicator/Indication

RAIS
Remote AIS

RAM
Random Access Memory

RBER
Remote bit error rate

RCNCILE
Reconcile

RDLD
Red-lined

rlogin
Remote login

RMA
Remote Multiframe Alarm

Rmks
Remarks

RMV
Remove

RP
Restoration or restoral priority

RP
Reconfiguration Plan

RST
Restore

RTS
Request to Send

Rx
Receive

S

s
Second(s)

SAFE
Shelf Alarm Far End

SANE
Shelf Alarm Near End

SC
Signal(ing) Conversion

SCSI
Small Computer Systems Interface

SE
Standard Engine

Seq
Sequence

SERS
Severe errored seconds

SES
Severe errored seconds

SEV, sev
Severity

SFI
Synchronizer/Synchronization Failure Indicator/Indication

SHMEM
Shared memory

SIMM
Single In-Line Memory Module

SMC
System Management Card

SME
Synchronous Modem Eliminator

SNMP
Single Network Management Protocol

SQL
Structured Query Language

SR
Subrate (multiplexer)

SRD
Software Release Description

SRM
Subrate Multiplexer

SRU
Subrate Unit

SSP
Synchronizer Sync Port

Str
String

stty
Set tty

Sub
Subunit

SV
System V

SVC
Switched Virtual Circuit

SW
Software; switch

SXC
Synchronizer cross-connect

SYNC
Synchronizer, Synchronization

T

TB
Time Base

TC
Trunk conditioning

TCP
Transport Control Protocol

TCS
T-Carrier Cross-Connect System

TDM
Time Division Multiplexing

TE
Timing Extractor

Telco
Telephone Company

terminfo
Terminal information

tid
Terminal ID

TID
Terminal ID

TLA
Terminate and Leave Activated

TLI
Time link interface

TLR
Terminate and Leave Released

TP
Test port

TPG
Test Port Group

TRB
Trouble word

TREF
Timing reference

TRSP
Transparent signaling

TSI
Time Slot Interchanger

TS0
Time slot zero

TS0M
Time Slot 0 Monitor

tty
Teletype

Tx
Transmit

TZ
Time Zone

U

UAS
Unavailable seconds

UATC
Unavailable time count

UC
Unit Controller

UCR
Unit Controller

UEQD
Unequipped

UI
User interface

UMC
Unassigned Multiplexer Channel Code

US
Unavailable Seconds

V

VDC
Video Display Console

VGA
Video Graphics Analog

W

WAN
Wide Area Network

WGS
Work-Group Station

Y

Y
Yellow alarm

yy
Year (2 chars.)

YY
Year (2 chars.)

Glossary

A

Acculink™ Access Controller (AAC)

A multiplexer which allows the management of data from up to 32 Digital Signal level 0 (DS0s) per line from any of 8 DACS lines to distribute data to local WAN and User Cards for grooming. It can accommodate hundreds of subrate and superrate data and voice interfaces. This device is very similar to the IMACS.

Action

An operation specified to the DND by entry of a predefined value into the **Action** field of many DND forms. The **Action** value is the command verb of the DND user interface. It may generate one or more MML command verbs to the DACS, or it may designate an operation that is strictly local to the DND computer.

Activate

Place in service as a transmission-carrying circuit.

Aging

With reference to alarms, delaying action on the alarm after its receipt.

Alarm

A message sent by an NPC indicating that transmission is impaired. Alarms are classified by cause as Circuit Pack Failure, Carrier Failure (see CGA) and Facility Performance. They are also classified by severity for purposes of response or notification.

Alarm Indication Signal (AIS)

See Blue Alarm.

Alarm Monitor Port

An RS232C asynchronous port of the DND computer. On the port are placed all alarm messages sent to the DND from a DACS. This port was formerly called the alarm broadcast port.

Alarm Status Indicator (ASI)

The rectangular colored box located on the New Alarm Summary button, on every DND GUI form, and on the subassembly representations in the equipment view. The color of the ASI represents the new alarm severity that has entered the system or indicates the alarm severity of a DACS II sub-assembly in the equipment view.

A-law

A set of companding rules used for CEPT transmission. See Compander, Gateway.

Alternate Bandwidth

Channels that are allocated alternately to a high-rate circuit; e.g., 3, 5, 7.

Altroute -ed -ing

Alternate routing of transmissions paths. See also Real Altroute and Pseudo-Altroute.

Asynchronous Transmission

A method of transmitting digital signals in which the bits are sent when they are initiated, rather than in synchronization with a timing signal; for example, keystrokes. Communication between the DND computer and its terminals is asynchronous.

Audit

An DND **Action** under DATABASE ADMINISTRATION by which differences between the DND database and a frame database are tracked and logged.

Automatic Reconfiguration Plan (ARP)

A file containing a sequence of references to Reconfiguration Plans to be executed when the ARP is executed. See also Reconfiguration Plan.

B**Backbone Leg**

In a Broadcast Circuit, the transmission source: the one-way circuit from the FROM side to the virtual branch point. In a Polling Data Circuit, it is the branch between the Rx of the transmission EFT and the DMB channel, along with the corresponding Tx side of the same EFT, which branches to the other EFTs without going through the DMB. In the latter case, the Tx branch point is in the CCN only, while the Rx branch point is the DMB channel.

Backup Line

In the DND, the SVC designated as a backup line in the FRAME ADMINISTRATION form. It will be the path to the DACS to which the DND automatically reverts when the primary line is not operable.

Bandwidth

The number of channels used for a high-rate circuit.

Baud Rate

The number of bauds per second. One baud, named after J.M.E. Baudot, is one signaling element. For example, in an 8-state code system, one baud is one code representing one state of the 8. If such a code were represented by bits, one baud would be three bits. In a two-state system, one baud is one bit, and the baud rate is identical to the bit rate; however, the term baud rate is preferred when it refers to the speed at which terminals communicate. Here, "baud rate" is used of the terminal line speed and "bit rate" is used of channel transmission speed.

Bit Error Rate

A DACS concept referring to the rate at which wrong bits are received. The number of wrong bits over an interval is calculated from a checksum.

Bit Rate

The speed at which binary digital signals are transmitted, usually expressed in bits per second (bps).

Blue Alarm

Also known as an Alarm Indication Signal (AIS). An all 1s pattern asserted at an intermediary point in a facility when loss of transmission is detected. A yellow alarm is sent in the direction of the loss and a blue alarm is sent downstream. See also Alarm.

Boot

In general, to load and start the operating system of a computer. In the DND, boot means to load an DND database with data reflecting the provisioning present in a specified DACS, or to provision the DACS so that it matches provisioning data stated in the DND database.

Branch Legs

In a virtual broadcast circuit, the one-way circuits from the virtual branch point to the broadcast points. In a Polling Data Circuit, a DMB channel takes the place of the virtual branch point on the Rx side. On the Tx side, the branch is in the CCN. See also Backbone Leg.

brassagt

A third party UNIX daemon process that implements the SNMP protocol for the DND.

Broadcast Circuit or Cross-connection

A virtual multipoint circuit, connecting a channel on one side with multiple channels on the other. The cross-connection is one-way, and can be high-rate. Connection is through a virtual node, which is a logical, or software, entity performing the signal switching. The circuit on the FROM side is the Backbone Leg and the circuits on the TO side are the Branch Legs.

C**Capacity Expansion Frame (CEF)**

An expanded DACS II frame able to configure up to 2560 NPCs.

Carrier Group Alarm (CGA)

Also called a Carrier Failure Alarm. One of three classes of DACS-II alarms (see Alarm). An alarm asserted by an NAS NPC to indicate loss of an incoming signal or receipt of a remote alarm signal from the other side of the line. The loss of an incoming signal is reported in an output message as a Red Alarm, and an alarm from the other end is reported as a Yellow Alarm. A variety of other types of CGA alarms can be generated. The equivalent type of alarm for CEPT NPCs is a PBA.

Cascade

There are many kinds of cascade in the electronics industry and in the communications business. In general, it signifies a circuit in which one configuration branches to another of its kind indefinitely. With reference to DMB multipoint circuits, a cascade of conferences is achieved when a leg of one conference is simultaneously the leg of another; i.e., two DMB channels are connected. Additional DMB channels can be connected also, leading to a longer cascade of conferences.

CEPT Facility

An NPC terminating DS1 signals that were multiplexed according to the CEPT standard.

Channel

A continuous stream of coded output signals. The channel may be carried by a variety of media, and may be broken into segments for discontinuous transmission. In the DND, a channel is a DS0 signal provided by an NPC.

Channelized

Said primarily of DS1 to distinguish it from Clear DS1.

Circuit

A cross-connection between channels. A two-point circuit connects two channels; a multipoint circuit connects more than two. A circuit may be a one-way circuit, where one transmission direction is used for each channel or a circuit may be a two-way circuit, where both transmission directions are used for each channel. Thus, the same channel can be in two active one-way circuits.

Circuit Pack

A hardware module that can be easily installed or removed from a DACS. Units such as power supplies, CCNs and DDCs are implemented as CPs.

Clear DS1 Signal

A nonchannelized, 193-bit DS1 signal on an NAS NPC. The 24 8-bit DS0 channels and one framing bit are cross-connected as one DS1 signal, 193 bits wide.

Clear E1 Signal

A nonchannelized, 256-bit DS1 signal on a CEPT NPC. The 32 8-bit DS0 channels are cross-connected as one DS1 signal, 256 bits wide.

Channel

A DS0-level signal that can be cross-connected in a circuit. Channels are provided by NPCs. An NPC makes available two directions per channel.

Channel Associated Signaling (CAS)

A signaling format in which the signal bits for all channels in an NPC are placed in a signaling channel, separate from the message channels. In CEPT facilities the signaling channel is Channel 31.
Command.

In the DND, a command is, strictly speaking, an MML command generated by an DND **Action**; however, a command may also be, by analogy, any I-2000 **Action**, whether it generates one or more, or no, commands to the DACS.

Compander

Compressor-expander, a device used to protect low-level voice volumes from noise by increasing them for transmission; i.e., compressing the range of volumes and expanding the range again at the other end of the transmission. See also A-law and Mu-law.

Conference

A multipoint circuit. The Symmetric Voice Circuit most closely fits the English meaning of *conference*, although the term is used of any multipoint circuit. In DMB multipoint circuits, *conference* also means the DMB channel number.

Conference Number

The channel number of the DMB side of a leg in a circuit of **Class** DMB. Since one conference includes only one DMB channel, which is used as one side of every leg, this channel number uniquely identifies the conference. For an exception, see under Cascade.

Conference European Postale et Telephonique (CEPT)

The standard of DS1 level telephone transmission used predominantly outside the United States. CEPT NPCs consist of 32 channels containing 64 Kilobits per second each. Numbering is from 0 to 31, but not all 32 are ordinarily available to the user: 0 and 31 are not available. Channel 0 is available as a special case in DACS II release 6, as an option under CIRCUIT PROVISIONING.

Constant Width (CW)

A typewriter-style typeface used for emphasis; in the DND manuals, primarily to mark field values that you type or that appear on the screen. Displayed messages also are quoted in CW.

Contiguous Bandwidth

Channels that are allocated contiguously to a high-rate circuit.

Contiguous Cross-connections

Multiple cross-connections such that the channels on the FROM side and the TO side are each consecutively numbered channels in a single NPC.

Controller

A device that takes the initiative in sequencing operations, and which uses feedback to make decisions. In the DND's case, switching of multiplexed telephone communications is controlled.

Create

An DND **Action** used in a number of forms to register an object in the DND database. Some objects that can be created are a DACS and an NPC.

Cross-connect -ion -ing

A circuit between two or more channels. The DACS interchanges channels from a time slot in one NPC to another time slot in the same or in a different NPC, as designated by the DND. The hardware module that accomplishes cross-connection is the Cross-connect Network (CCN).

Cross-connect Frame

Same as Distribution Frame.

Cross-connect Module (CCM)

A DACS I hardware unit contained within a CCU and containing up to eight NPCs.

Cross-connect Network (CCN)

A hardware module that is used to implement cross-connection. It contains Time Slot Interchangers (TSIs).

Cross-connect Unit (CCU)

A DACS I hardware unit containing a maximum of four CCMs.

Custom Report

A report for which the format can be changed by use of the Edit Custom Report Format form. A fixed-format report may not be changed in format. Some custom report formats are predesigned and are furnished with the DND. These can be selected like fixed-format reports; nevertheless, they can be changed and are custom formats.

D**DACS**

Used without further qualification, DACS means any supported, configured cross-connect frame.

DACS Database

The DND database that is named with a frame Site Name and stores DND information concerning that frame. This database is distinct from the frame's own database, here termed the *remote* or *facility* database, which is installed on the frame itself.

DACS I, DACS II

A Lucent Technologies product that terminates DS3- or DS1-level multiplexed signals and has the capability of separating them into DS0 signals for purposes of cross-connecting them. The DND provides a user-friendly interface to generate the commands that instruct the DACS to perform the appropriate cross-connections.

DACS II AX

A compact Lucent Technologies product that terminates DS3-, DS1-, or DS0 level multiplexed digital signals, using DS1, E1, DS3, and analog voice ports, and supporting test access on those cards. DACS II AX is available in two configurations: DACS II AX 4 (4 application card slots) and DACS II AX 11 (11 application card slots).

Database

A collection of logically united data. Here, the term does not imply any specific structure of code or organization of data on disk or in memory. The data might be tracked in various ways and be stored at disparate locations. A screen, for example, is not necessarily a record in a file, as it would be in COBOL or PL-1.

Data Circuit-terminating Equipment (DCE)

A type of equipment recognized by standards organizations such as the EIA, the CCITT and the ISO. A data circuit is a network equipment configuration that provides data services. The DACS is DCE.

Dataset

In DACS II, a stored set of Facility Performance Parameters.

Data Terminal Equipment (DTE)

A type of equipment recognized by standards organizations such as the EIA, the CCITT and the ISO. A data terminal is a remote device used with a computer for data input and output: teletypewriters, CRTs and host computers. Each DND terminal is DTE

Default Disconnect Code (DDC)

The DDC is a disconnect channel code asserted by an equipped NPC on all of its unmapped channels, unless it is replaced by a value entered into the **IW** field on the NPC PROVISIONING form.

Delete

An DND **Action** used in a number of forms to delete an object from the DND database. Some objects that can be deleted are a DACS and an NPC.

De-grow

A DACS II term meaning to delete from the frame database perhaps with a DGRTH (de-growth) command in MML. In the I-2000, the DELETE Action takes its place. The DELETE functionality is a superset of DGRTH functionality.

Digital Multipoint Bridge (DMB)

A physical module containing the electronic circuits that can establish two types of two-way multipoint circuits, beginning with Release 2.0: the Symmetric Voice Circuit and the Polling Data Circuit. The DMB makes available DMB NPCs and channels, from which the user may select one as the branch point. This DMB channel number is used as the conference number.

Digital Signal level 0-Data Port (DS0-DP) Card

One of the data cards for the AAC and IMACS systems.

Digital Signal Processing Unit (DSPU)

A type of DACS unit containing the ICs used to create specialized circuits, such as DMB or subrate. These units contain more specialized TSIs than a CCN.

Digroup

For NAS transmission, a digroup is 24 (two groups of 12) DS0-level signals. It is a specific kind of NPC, provided by a DDC.

Digroup Roll

The former name of the NPC Roll feature.

Direct Configuration.

See Point-to-point.

Disconnect Channel Code

A signal, a digital word, that is sent on the unmapped (unassigned) channels of an equipped NPC. If it is not supplied by the operator as an **IW** field value on the NPC PROVISIONING form, the Default Disconnect Code is used.

Display

In the DND, to display always means to show on the screen.

Distributing Frame

A mechanical chassis on which multiple transmission lines are terminated to allow cross-connections of transmission signals. In early equipment, the cross-connections were made by jumpers. Today's frames provide an electronic cross-connection capability.

See DACS II.

DND

The DACS II Network Director is a network management system that allows you to provision and monitor networks with up to 316 network elements, including up to 60 DACS II and DACS II ISX elements (maximum 30,720 NPCs) and 256 SNMP nodes.

Domestic

A term in use in earlier DACS documentation and I-2000 manuals to mean North American Standard; however, strictly speaking, it only applies to within the U.S.

DS0

A level in the TDM hierarchy, at which one channel is sampled and the digital transmission rate is 64 kilobits per second.

DS1

A level in the TDM hierarchy. For NAS transmission, 24 channels are sampled and the transmission rate is 1.544 Mbps. For CEPT transmission, 32 channels are sampled and the transmission rate is 2.048 Mbps.

DS3

A level in the TDM hierarchy. For NAS transmission, 672 channels are sampled and the transmission rate is 44.736 Mbps.

DS3 Unit

A DACS II hardware module containing a maximum of six DS3 terminations.

Dual Digroup Card (DDC)

A DACS II card containing two NPCs for NAS transmission.

Dual Primary Circuit (DPC)

A DACS II card containing two NPCs for CEPT transmission.

Dumb

Used of terminals; incapable of doing any preprocessing.

E**E1**

Also known as a DS1 line; the European standard (and most of the rest of the world) comprised of 32 DS0s for a total signaling rate of 2.048 Mbps.

Earth and Magnetic (E&M) Card

One of the voice cards for the AAC and IMACS systems; the signaling leads on inter-switch voice connections.

Echoed Response Processing (ERP)

An Echoed Response Message is a message from a DACS to the DND that is not in response to an I-2000 process waiting for it. Echoed Response Messages often indicate that provisioning has been performed in the DACS but is not matched by provisioning in the DND. Echoed Response Processing is DND-only NPC or circuit provisioning automatically performed for the purpose of making the DND provisioning match the frame provisioning indicated by the message.

Encoding

Representing by 8-bit binary numbers the numbers resulting from quantizing a PAM Signal. See Pulse Code Modulation.

Enhanced Small Device Interface (ESDI)

A standard interface, which achieves faster throughput than standard fixed-disk controllers by shifting functionality to the Hard Disk Unit (HDU). It also defines a disk format.

Environmental Variable

A shell variable, which can be set by a variety of methods. The DND uses an environmental variable file, .dnrcr, which stores the default values.

Equipment Provisioning

Prior to DND Release 3.2, the term used for NPC provisioning in DND forms.

Equipped

In the DACS II, "to equip" is to grow with a CRTE command in MML. In the DND, the **CREATE Action** performs this function, sending commands to the DACS when necessary. An NPC that has been created can, therefore, be said to have been equipped. "Equipped" is thus a status that is NOT unequipped (UEQD); i.e., a **Service Status** value referencing an object that is described in the DND database. However, no explicit "equipped" **Service Status** is used; instead, IS or OOS is used to mean "equipped" by implication.

Errored Seconds

The number of seconds a transmission facility was not working properly over an interval. Execute

In general, to set a software procedure in motion. In the DND, "to execute" implies to use the Execute button to set an DND or DACS procedure in motion; however, sometimes it is used in the general sense.

Extended Numbering or Addressing

A system of numbers used to address NPCs in I-2000 forms and DACS commands. Extended numbering maps a whole number from 1 through 2564 to an NPC.

External Facility Termination (EFT)

A channel that is coming from outside the DACS and terminates in a DACS II DDC or DPC, or in a DACS I NPC. A node in a multipoint circuit is NOT an EFT.

F**Facility**

In the telephone vocabulary, a device for transmitting telephone signals. With reference to a DACS, "facility" is typically used to mean NPC.

Facility Performance Alarm Parameters

One of the categories of DACS alarms (see Alarms). A line status error alarm resulting when errors on a monitored line exceed a stored threshold value for a defined parameter. Microprocessor circuits in the line interface circuits detect and count various types of line error conditions for each NPC. The parameters monitored are the Bit Error Rate, Frame Alignment Errors, Errored Seconds, Severely Errored Seconds, Slips, Degraded Minutes and Unavailable Seconds.

Facility Terminating Module (FTM)

A DACS II hardware module contained in an FTU. The FTM contains up to 20 NPC Cards, supporting 40 digroups, or NPCs.

Facility Terminating Unit (FTU)

A DACS II hardware module mounted on a DACS II. It contains up to 4 FTMs.

Far End

With regard to a cross-connection, the far end is the NPC at the other end of a line terminating in one of the sides of the circuit. Thus, a two-point, single-channel cross-connection has two far ends.

Field

A named and delineated space on the screen, where data entry is expected; also, the logical entity associated with the name. Fields are not necessarily mapped into any scheme of DND data records, C language structures or shell variables; however, all of these devices are utilized to store fields.

Form, Screen

A terminal display showing field names into which you enter data.

Form Control Keystroke

A keystroke that positions the cursor among the fields within a form.

Frame

See Time Frame, Distributing Frame. In this manual, frame is used most often to mean any distributing frame that becomes an object in the DND system through provisioning.

Frame Alignment Error

A concept referring to errors detected in framing bits received. The errors must be severe enough to require the receiver to be resynchronized with the transmitter.

Framing, Framing Bits, Framing Word

The process of marking the beginning of a time frame or two time frames in a PCM stream. The NAS standard uses one bit, the framing bit, making a total of 193 bits per frame. The CEPT standard uses an 8-bit pattern, the framing word, in alternate time slots. The other alternate contains the non-framing word.

FROM Side

One side in a cross-connection. For one-way circuits (two-point or multipoint), the FROM side is the channel that sends the transmission (Tx) and the TO side is the channel that receives the transmission (Rx). The name derives from the fact that the DACS II command that establishes the cross-connection identifies the channel number of this point with a FROM qualifier.

For two-way circuits, the second direction of the FROM and TO channels is used. It also has Tx and Rx sides. Thus, the FROM side and the TO side each have a Tx and Rx direction.

Front End

Hardware or software that preprocesses data before it is massaged by the main hardware or software under consideration. The DND is a front end to the frame, because it generates frame switching commands.

Full Duplex Circuit

A two-way cross-connection.

Function Key

One of the keys across the top row of the keyboard. Many of them are assigned special functions in the I-2000. These functions are labeled pictorially in a display line at the bottom of the screen, for functions that are valid with that screen.

Foreign Exchange (FX)

Not the nearest Central Office (CO). An FX line goes from a CO or PBX to beyond the PBX or CO's normal service area.

Foreign Exchange Office (FXO)

Encodes analog to digital and digital to analog transmission.

Foreign Exchange Office (FXO) Card

One of the voice cards for the AAC and IMACS systems.

Foreign Exchange Subscriber / Station (FXS)

An interface at the end of an FX line connected to a telephone or PBX, decodes digital to analog and analog to digital transmission.

Foreign Exchange Subscriber / Station (FXS) Card

One of the voice cards for the AAC and IMACS systems.

G**Gateway**

A cross-connection between a channel in an NAS NPC and a channel in a CEPT NPC. For transmission of digitized voice signals, the difference in companding rules must be taken into consideration; i.e., an A-to-Mu Law Conversion may be necessary. This conversion is not necessary for transmission of data signals.

Generate a Report

To instruct the DND to create a report in an electronic file. Printing or displaying the file is a separate step.

Generic

Formerly the release number of the software and, therefore, the "type" of software. One generic is not necessarily compatible with another. Currently the use of generic has been dropped and "release" is being used instead.

Grow

A DACS II term meaning to record an NPC in the frame database with a CRTE command in MML. In the DND, the *CREATE* Action takes its place, and is a superset of it.

H**Half Duplex Circuit**

A one-way cross-connection.

Hierarchical Numbering or Addressing

A system of numbers used to address NPCs in I-2000 forms and DACS commands. Hierarchical numbering maps, to each NPC, a number consisting of the shelf or unit number followed by the module number followed by the NPC within the module.

High-rate Circuit

A single circuit defined to be multiple one-way or two-way two-point cross-connections. The number of cross-connections, which is the same as the number of channels on a side, is the bandwidth. Bandwidth is allocated on channels numbered contiguously or alternately.

History File

A file storing DND/DACS communications just as they were generated or received, in circumstances for which a history file has been defined.

High Speed Unit (HSU) Card

One of the data cards for the AAC and IMACS systems.

Hub Test Configuration, Hub DACS

A test circuit configuration in which any number of signals to be tested are brought from remote DACSs to a hub DACS and there are routed to test equipment.

HuMan-Machine Language

A software command language that is used in the human interface to the DACS.

I

I-2000

A controller that offers a user-friendly interface between operators at terminals and multiple DACS frames stationed on a Packet Data Network or in a point-to-point configuration. I-2000 is the product that preceded DND.

Idle

A concept based on the IDLE **Action** of Reconfiguration Plan Provisioning. To idle a plan means to restore all circuits acted upon by actions in the plan to their previous status.

Integrated Multiple Access Communications Server (IMACS)

See AAC.

In Service (IS)

A value that can be had by a status field, indicating that the object referenced by the form is fully operable. For example, if the object is an NPC, an NPC that is *IS* has been created and restored. Only in-service NPCs can provide transmission.

INSERT Mode

A typing mode in which the typed character pushes other characters to the right.

Insertion Word (IW)

In general, an insertion word is a signal, an 8-bit data word, that is inserted into a DS0 channel for some reason. The DND defines two types of insertion words:

NPC Provisioning. The *unassigned* insertion word. Entered into the **IW** field of the NPC PROVISIONING form, this word replaces the DDC as a standard disconnect code to be sent on all unmapped (unassigned) channels on an equipped NPC.

Circuit Provisioning. Entered into the **IW** field of the CIRCUIT PROVISIONING form, this word is sent on mapped channels of an NPC after it has gone out of service (carrier or NPC failure).

Integral Shelf Cross-connect (ISX)

A member of the DACS II family of products that combines the capacity expanded DACS with the single bay DACS. Offering a subset of DACS II capabilities, it is positioned for smaller applications. Both NAS and CEPT DS0 cross-connects are supported.

Interval

In the DND, the number of scale units between successive executions of scheduled tasks.

Italics

A slanted typeface used for emphasis; in the DND manuals, in quotations and for variable names.

K

Keystroke

The signal resulting from pressing a key once. Be sure to do so sharply, since more than one keystroke may result from holding the key down.

L

Leg

In a multipoint circuit, the connection from an EFT to the branch point. The branch point can be a virtual node if the circuit is one-way (Broadcast Circuit) or a DMB channel if the circuit is two-way (Symmetric Voice Circuit or Polling Data Circuit).

Line

A connection between a computer and a peripheral, such as a terminal. In general, however, a line can be any stream of transmission or facility for carrying it.

Link

A connection to a network.

Link Protection

The presence of an additional link for every link from the DND to the PDN or from the PDN to the DACS. If the primary link is disconnected, the backup link becomes functional. You can acquire link protection by backing up the port or by merely backing up the link within the port.

Local Database

The DND database, named after a DACS Site Name, that stores information concerning the DACS.

Local-only Mode

A mode of the Execute function, selected from the WHICH DATABASE? menu. Local-only specifies that the Action implemented by the Execute is to apply to the DND database only.

Log

A file containing records of predefined events resulting from various defined circumstances. Some logs are automatically generated by the DND; others can be electronically kept by the user in the DND.

Log-in Port

An asynchronous connection to the DND computer, to which a user terminal is attached.

Loop Circuit

A cross-connect in which the Tx direction is connected to the Rx direction of the same channel.

M

Management Information Base (MIB)

A conceptually organized database containing the management information accessed through SNMP. DND supports MIB II as defined in RFC1213.

Master

In database audit/synchronization, the database designated as the standard to which other databases are made to conform.

Menu

A list of selections from a pull-down or combo box. Make your selection by highlighting and clicking on your choice.

Menu Control Keystroke

A keystroke that positions the cursor relative to the selections within a menu.

Modem

Modulator-demodulator, a device that converts signals from data processing into signals suitable for transmission over telephone lines (modulation) and vice versa (demodulation). A modem is required to transmit the synchronous signals to and from the PDN.

Monitor Test Circuit

A test circuit configuration in which the Tx and Rx signals in a cross-connection also are received at test ports. The circuit being tested is not interrupted.

Multiplexing

Multiplexing is the combining of a number of signals into one transmission stream. Demultiplexing is the separation of a multiplexed stream into consistent signals. See Time Division Multiplexing.

Multipoint Circuit

A cross-connection in which a signal can be sent from a single source to a number of destinations. A virtual multipoint is one-way and features a virtual node as a branch point. The virtual node is a software entity. A true DACS multipoint is two-way and features a DMB channel as a branch point. See also Broadcast Circuit.

Mu-law

A set of companding rules used for NAS transmission. See Compander, Gateway.

N

NAS Facility

An NPC terminating DS1 signals that were multiplexed according to the Time-Division Multiplexing (TDM) hierarchy in use in the North American Standard (NAS).

Near End

With regard to a cross-connection, the near end is the cross-connected NPC in the DACS on which you are working in the DND system.

Network

A set of communication pathways. Networks consist of nodes connected by links.

Network Address

In the FRAME PROVISIONING form, the address of the synchronous link between the PDN and the DACS. This link must already be operable. The "address" is in the form of the link's telephone number.

Network Card

A CPU card, Server card, or WAN card.

Network Processing Circuit (NPC)

As used in this manual, an NPC is any IC that provides terminations for cross-connection. FTU NPCs in the DACS II and CCU NPCs in the DACS I provide EFTs, but other types of NPC, such as DMB and Subrate, provide other types of terminations. In the DACS I, an NPC is implemented as one CP, but in the DACS II, the NPC is one digroup on a DDC or DPC, which is implemented as a CP.

Non-framing Word (NFW)

The 8 bits of time slot 0 in alternate DACSs of a CEPT transmission. The other alternates contain the framing word.

Normalize

Return an *ALTROUTED* circuit to its original path or a *PREEMPTED* circuit to *ACTIVE*.

North American Standard (NAS)

A standard of transmission in use in the United States and elsewhere. Within the US it is termed domestic.

Northbound

Refers to the Element Management System (EMS) system in which DND is connected to and sends database and alarm information.

NPC Provisioning

The process of growing NPCs through use of the NPC PROVISIONING form. Prior to release 3.2, this was called the EQUIPMENT PROVISIONING form.

NPC Roll

The transfer of all the circuits connected to an NPC to another NPC. Only certain kinds of NPC can be rolled.

NULL Status

A value returned to a **Status** field, when no record of the object described by the form exists in the DND database. An example of an object that can have a *NULL* status is a login port.

O**Office Channel Unit-Data Port (OCU-DP) Card**

One of the data cards for the AAC and IMACS systems.

One-way Cross-connect or Circuit

A cross-connect that utilizes only one transmission direction.

Operator

As used in the DND, a person who has logged on with a login and password assigned by the system administrator. An operator does not have access to the selections listed on the SYSTEM ADMINISTRATION menu.

Outage Log

A DATABASE ADMINISTRATION feature by which the system administrator is allowed to keep electronic logs of NPC or circuit outages, and can print a log at any time.

Out of Service (OOS)

A value that can be had by a status field indicating that the object referenced by the form exists in the database but is not yet operable. For example, an NPC that is OOS is equipped but is not placed in active service. An out-of-service NPC cannot be expected to transmit data.

OVERLAY Mode

A typing mode in which the typed character replaces the character on which it is typed.

P**Packet Data Network (PDN)**

A network on which data is transmitted by breaking it up into packets. Commonly, the X.25 protocol is used in a PDN. Connection to a customer X.25 PDN by the DND is through the X.25 Interface Board. See also Switched Virtual Circuit, X.25.

Passthrough

A special mode of the DND, which allows an operator at an DND terminal to communicate directly to a DACS as though the terminal were a DACS terminal.

Passthrough Control Keystroke

A keystroke that positions the cursor in passthrough mode.

Pattern Matching Buffer

The logical entity that stores keystrokes as you type them.

Pending

Said of circuits that exist in the DND only and are marked with a *PENDING Ckt Status*. They are waiting to be activated.

Performance Alarm

See Facility Performance Alarm.

Permanent Virtual Circuit (PVC)

A virtual circuit set up for longer than the duration of a call on an X.25 Packet Data Network; i.e., across calls.

ping

A command/program used to test IP-level connectivity from one IP address to another.

Point-to-point

Used of a connection between pieces of hardware (nodes) where a network does not intervene.

Polling Data Circuit

A type of multipoint circuit in which the backbone leg broadcasts information (polling) to the branch, or tributary legs, and they return the replies through a DMB to the backbone leg.

Port

A physical and logical connection to a computing system. The DND features asynchronous, RS232C ports for its operator terminals and also for the Alarm Broadcast Port. These ports are provided by the IPC-900 and IPC-1600 Boards. Synchronous ports, for connection to the PDN, are provided by GPSC-AT/E Boards.

Preempt -ing, -ed, -ion

Deactivate a circuit and place it in *PREEMPTED Ckt Status* so that one or more of its channels can be used by another circuit.

Primary Block Alarm (PBA)

An alarm asserted by a CEPT NPC. A variety of PBA alarms can be generated. The equivalent type of alarm for NAS NPCs is a CGA.

Primary Line

In the DND, the SVC designated as primary in the FRAME ADMINISTRATION form. It will be the path over which the DND will communicate with the DACS, so long as that SVC is operable.

Print

In the DND, to print is always to place on the printer; i.e., you never "print" to screen.

Private Branch Exchange (PBX)

A small phone switch inside a company location.

Protocol

A conventional format and set of rules for initiating, maintaining and terminating data communications. The DND utilizes one of two for communication with each DACS: SNIDER or X.25.

Provisioning

The process of making available various communications resources. In the DND, the resources are mainly NPCs and circuits.

Pseudo-Altroute

An altroute in which each channel end is altrouted to itself. Note that a pseudo-altroute does not merely reroute to the same circuit: an altroute in which the channel ends are reversed is a real altroute, even though the circuit is the same. See also Real Altroute.

Pulse Amplitude Modulation (PAM) Signal

A stream of pulses resulting from Pulse Code Modulation of an analog signal. See Time Division Multiplexing.

Pulse Code Modulation (PCM)

Digital transmission of an analog voice signal by converting it into a digital signal.

Q

Quantizing

Assigning numbers to the amplitudes of the pulses in a PAM Signal. See Pulse Code Modulation.

R

Real Altroute

Alternate routing of circuits to different end points. See also Pseudo-Altroute.

Reconcile

In the DND, making the DND databases and the frame databases contain the same or nearly the same NPC and circuit configuration data. Alarm data also can be reconciled. "To reconcile" can be to use the **Reconcile Mode** options or to perform a database synchronization.

Reconfiguration

In the DND, the alteration of a circuit in any way, whether by changing its **Ckt Status** or its terminations.

Reconfiguration Plan (RP)

A defined collection of circuit provisioning actions.

Red Alarm

A CGA alarm signaled by an NPC when it detects loss of transmission. See also Alarm.

Red-lined

Selected out for some purpose. In the DND, circuits can be red-lined via the RDLD **Option** for purposes of not being allowed to be disconnected without additional authorization.

Released

See Terminate and Leave Activated, Released.

Remote Database

The frame-installed database utilized by the DACS to record provisioning information. The DACS contains this database of its own even if it is not connected to an DND.

Remove

As used in the DND, to take an object out of service. Some objects that can be removed are an asynchronous port, a synchronous link, a DACS and an NPC.

Reset

A restart of a computer's executive software. Turning the power switch off and on accomplishes a reset, but there is typically a reset button. Reset of the I-2000 is not recommended; instead, shut it down, if possible.

Restore

As used in the DND, to place an object in service. Some objects that can be restored are an asynchronous port, a synchronous link, a DACS and an NPC. The term is also applied to retrieving a database from backup.

Robbed-Bit Signaling

A signaling format in which the signal bits associated with a DS0 channel overwrite some of the message bits in that channel.

Root

The highest-level directory of any UNIX system. In the DND system, root is the initial login of the system and also grants full access to it. The root password is the password associated with root.

S**Scale**

In the DND, the unit in which time frequency is measured: **MINUTES, HOURS, DAYS.**

Schedule

In the DND, to place an **Execute** on queue, to be executed at the time and frequency specified in the scheduling insert.

Screen, Form

A terminal display showing named fields into which you enter data.

Search Criteria

In the DND, a field value or range of values, specified on a SEARCH CRITERIA form, that restrict the scope of the report data to be found by keying in on that field.

Severely Errored Seconds

A concept referring to the number of seconds transmission was severely impaired on a facility.

Severity

The importance of an alarm message. Three severities are recognized: Major (MAJ), Minor (MIN) and Informational (Inf).

Side

One of two duplicate NPCs with the same address provided by a DMB circuit pack. They are identified as Side 0 and Side 1.

Signaling

A method of sending network-level signals bits, which can be used in the transmission network to determine the treatment of DS0 channels at the receiving side of the transmission. Channel Associated Signaling and Robbed-Bit Signaling are two commonly used signaling formats.

Slip Error

A transmission concept referring to a difference in the number of bits received on a facility over an interval relative to the number expected.

Small Computer Systems Interface

An interface established to support mass storage for microcomputers and minicomputers. Published in ANSI Standard X3.131, it defines a standard for attaching intelligent peripherals to computers. In the case of HDUs, SCSI defines a disk format also.

SNIDER

The Asynchronous Data Link Protocol, an EIA RS-449 based AT&T handshaking routine used to handle input transactions to a DACS and output messages from it.

SNMP

A standard network protocol that is used primarily to manage TCP/IP networks.

Speed

The baud rate over an asynchronous line. The DND offers baud rates of 1200, 2400, 4800, or 9600.

Split Test Circuit

A test circuit configuration in which the circuit being tested is broken and its traffic is rerouted to test ports.

Stand-alone

Hardware or software that function without the assistance of other hardware or software. A DACS can be used as a stand-alone device, without either the I-2000 or the DACScan-2000 Controller C-Module.

Status or Service Status

In the DND, one of a number of fields not accessible to the user, which display the current predefined mode of activity of an object. Some of the objects that have a status are a login port, a synchronous link, an NPC and a circuit. Sometimes state is used as a synonym. Some of the major status values are *IS* (In Service), *OOS* (Out of Service), *UEQD* (Unequipped), *NULL*.

Subchannel

A facility provided by the DS0-B format.

Subrate

A facility consisting of less than the full bit rate available on a DS0 channel. Subrate facilities are available at 2.4 Kbps, 4.8 Kbps, 9.6 Kbps, and 56 Kbps. Two formats are available, DS0-A and DS0-B.

Subrate Multiplexer

The hardware module that provides two-point subrate circuits.

Subrate Multipoint Junction Unit

The hardware module that provides multipoint circuits between sub-channels.

Subrate Unit (SRU) Card

One of the data cards for the AAC and IMACS systems.

Switched Virtual Circuit (SVC)

A virtual circuit set up for the duration of a call on an X.25 Packet Data Network. An X.25 card provides 20 SVCs. Each installed DACS reserves one for its primary link and possibly another for backup.

Symmetric Voice Circuit

A type of circuit in which all (possibly more than two) the terminations are on-line all the time; i.e., all the legs are two-way circuits. Symmetric voice circuits provide customers with the ability to carry on round table discussions. This is one type of DMB circuit.

Synchronize, Synchronization

To make predefined logical objects contain the same or similar data in parallel. An example of parallel objects are the time and date in both the DND and a DACS. Synchronization is also an DND **Action** under DATABASE ADMINISTRATION by which differences between the DND database and the frame database for a given DACS are reconciled, subject to certain restrictions. This is termed "scheduled" synchronization. Echoed Response Processing also performs some automatic synchronization. Synchronization of alarm information can be turned on or off in DND CIRCUIT PROVISIONING.

Synchronous Modem Eliminator (SME)

A line device for simulating a network connection by providing synchronous timing signals. In DND, SMEs can be used to establish a direct connection with an X.25 interface, which normally connects to a PDN.

Synchronous Transmission

A method of transmitting digital signals in which the bits are moved in synchronization with a cyclical timing signal.

System Administrator

As used in the DND Non-GUI, a person who has logged on as dacsadm with the root password. The system administrator has access to the selections listed on the SYSTEM ADMINISTRATION menu.

T**T1**

See DS1.

T3

See DS3.

Task

As used in the DND, a set of commands or an DND-only operation that has been initiated on the DND system with the Execute button. It may or may not be identical with one or more UNIX tasks. An DND task may be executed in the background or foreground, or may be placed on queue for scheduled execution.

TCP/IP

Transmission Control Protocol/Internet Protocol

TDM Hierarchy

A set of digital levels determining the number of channels that will be sampled during one time frame in Pulse Code Modulation transmission. Since the time frame is fixed at 1/8000 sec., a number of channels implies a digital transmission rate. For example, at the DS0 level, 1 channel is sampled and the rate is 0.064 Mbps. At the DS1 level for the NAS, 24 channels are sampled and the rate is 1.544 Mbps. The higher rate comes from the greater number of words per frame. For the CEPT standard, 32 channels are sampled and the transmission rate is 2.048 Mbps. See Time Division Multiplexing.\

Telnet

An application protocol offering virtual terminal services in the Internet suite of protocols.

Test Access

Cross-connecting test ports in test circuits.

Terminate And Leave Activated, Released

A term that is somewhat ambiguous in English, but is to be construed as follows. "Terminate" means "end normal traffic on this circuit". "Terminate And Leave" makes the inhibition of normal traffic a condition that can be switched on or off. "Terminate And Leave Activated" (TLA) activates the condition, ending the traffic. "Terminate And Leave Released" (TLR) releases the condition, restoring the traffic.

Test Port

Two contiguous channels that have been designated as a test port through TEST PORT PROVISIONING. They must be located in an NPC that has been designated as a Test Port Group.

Test Port Group

An equipped NPC that has been further designated as a collection of test ports through TEST PORT PROVISIONING.

TG80

A hardware module that makes available Clear DS1 in the DACS II.

Threshold

An error rate below which no alarm is generated for a Facility Performance Parameter. A DACS II stores sets of Facility Performance Parameter Thresholds for each performance parameters.

Time Division Multiplexing (TDM)

The multiplexing of a number of channels for transmission purposes by taking samples of the signal on each channel at time intervals.

Sampling occurs once every time frame, where the time frames are contiguous. Since the sampling rate is 8000 samples per sec., a time frame is 1/8000 sec.

The number of channels sampled depends on the level in the TDM hierarchy at which multiplexing has been designed to operate. See TDM hierarchy. A DACS II assumes multiplexing is at the DS1 or DS3 levels.

One sample of one channel obtains a number representing the amplitude of the signal on that channel. The resulting stream of numbers is termed a Pulse Amplitude Modulation (PAM) Signal.

The PAM outputs from each channel for one frame are switched sequentially into a common encoder, which represents each one by an 8-bit word. The frame can then be sent as a stream of 8-bit words. The conversion of pulses into words is called Pulse Code Modulation (PCM).

In the transmission phase, the frame of words is transmitted via a single line. At the far end of the line, the PCM signal is converted back to analog signal in demultiplexing.

Time Frame

A 1/8000 sec. time interval within which analog signals are sampled for digitization and transmission. See Pulse Code Modulation, Time Division Multiplexing.

Timeout

A time to wait after the onset of some condition before the software takes action concerning it.

Time Slot

A timed position in a formatted stream of 8-bit words resulting from TDM. An NAS NPC provides time frames of 193 bits divided into 24 channels plus one framing bit. The first 8 data bits are time slot 0, channel 1, the second 8 are time slot 1, channel 2, etc.

A CEPT NPC provides time frames of 256 bits divided into 32 channels. The first 8 bits are time slot 0, channel 0, the second 8 are time slot 1, channel 1, etc. Time slot 0 in alternate frames contains a framing word. The other frame contains signalling information in those bits, called the non-framing word.

Time Slot Interchanger (TSI)

One of many circuits within a CCN that accomplish cross-connection by routing output from a time slot in one NPC to a time slot in another (or the same) NPC.

Time Zone (TZ)

A region whose conventional clocks are set at the same displacement from Greenwich Mean Time (GMT). UNIX treats daylight savings time as an alternate time zone (ATZ). It has a different displacement from GMT, even though its displacement applies to the same region as does the TZ. UNIX is programmed to change between the TZ and the ATZ twice a year. Since the day of one change varies from year to year, the UNIX administrator must set the days of change once a year in the TZ command. The DND provides an interface to enter a TZ command.

TO Side

One side in a two-point cross-connection. In one-way circuits, the TO side is the receiving side (Rx). Its name is derived from the fact that the frame command that establishes the cross-connection identifies the channel number of this point with a TO qualifier. In two-way circuits, the second direction also has a Tx side and Rx side. Thus, if two channels are connected in a two-way circuit, the FROM side and the TO side each have a Tx and Rx side.

Transparent

For the object of which it is predicated, not exhibiting any of its distinguishing characteristics. To the DACScan-2000 Controller C-Module operator, the DND is transparent.

Tributary Leg

Same as branch leg.

Trunk Conditioning Code

A code associated with cross-connected channels or a provisioned test port. The code tells the DACS what signals to place on each channel if the facility fails. It indicates signaling bits to be sent in each direction on the circuit for the first 2.5 seconds after transmission is lost and another set to be sent thereafter.

Two-point Circuit or Cross-connection

A cross-connection between two DS0 channels.

Two-way Cross-connection

A two-point cross-connection that connects the channels in both transmission directions.

Type

The kind of NPC, where "type" gets its significance from the **Type** field of the NPC PROVISIONING form. Different types of NPC are provided by different hardware modules.

U**UB**

A DACS II power unit.

Unassigned Multiplexer Channel Code

A value of Hex 18, or 00011000. A code that is sent as the disconnect channel code on unmapped channels of a provisioned NPC when the DS1 lines terminate at the far end on DDS second stage multiplexers.

Unequipped (UEQD)

A value returned to a status field, after you press , when no record of the object described by the form exists in the DND database. The major objects referenced by this status are an NPC or a DACS.

Unprovision

A term used in this manual to mean to remove from the DND database, after having taken out of service.

Upload

An DND **Action** under DATABASE ADMINISTRATION, by which the current provisioning of a DACS is recorded in the DND database, subject to certain restrictions.

Upper NPC

The higher-addressed NPC of the two contiguously numbered DMB NPCs that must be grown at a time.

User Card

A Voice card, Data card, or Alarm Card.

V**Virtual**

Apparent, simulating some function or other entity, but not actually it. "Virtual memory", for example, is not really electronic memory, but is disk storage space.

Virtual Multipoint Circuit

A Broadcast Circuit. It is called virtual because the connection is not provided by a DMB, as it is in a true multipoint circuit. Instead, it is a software emulation.

Virtual Node

The branch point in a Virtual Multipoint Circuit. It is not a channel of a DMB NPC, as it is in DMB multipoint, but is a software emulation. Ordinarily the virtual node is system-selected from the 0 through 500 range.

W**White Space**

Characters, such as blanks, that have no meaning to the system and are treated as blanks.

Wild-card Character

More technically called a metacharacter, it is a character that can stand for a defined range of other characters in a name, just as a joker can stand for any other card when jokers are wild. The major DND metacharacters are *, which can replace any number of characters, and ?, which can replace one character.

Window

A delineated work region on the screen. In the Sun systems, more than one window can be in use. The background is termed the root window. In other systems, you get only the root window. There is no continuity between windows.

X**X.25**

An AT&T implementation of CCITT Recommendation X.25, a packet-switching protocol defining standards of communication between DTE and DCE; i.e., the DTE/DCE interface. The recommendation defines the physical, data link, and network layers of the Reference Model For Open Systems Interconnection, an international convention for data communication.

Y**Yellow Alarm**

A CGA alarm sent by an NPC in the direction of transmission when it detects loss of signal. At the same time, the card signals a red alarm to its own DACS. If the line is down, the yellow alarm will not be received, and both sending and transmitting frames will signal red alarm. See also Alarm.

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