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Call Center Management Information System

CC MIS Installation and Maintenance

Release 6.0.1

Standard 1.0

May 2007

NORTEL

Call Center Management Information System

CC MIS Installation and Maintenance

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This product is intended for deployment in a light industrial, non-domestic environment and complies with the relevant EMC standards, EN55022 (class A) and EN50082-1. Since this is class A equipment, in a domestic environment this equipment may cause radio interference in which case the user may be required to take adequate measures.

Revision history

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Chapter 1

How to get help

This section explains how to get help for Nortel products and services.

Getting help from the Nortel Web site

The best way to get technical support for Nortel products is from the Nortel Technical Support Web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software and related tools
- download technical documents, release notes, and product bulletins
- sign up for automatic notification of new software and documentation
- search the Technical Support Web site and Nortel Knowledge Base for answers to technical issues
- open and manage technical support cases

Getting help over the phone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support Web site, and you have a Nortel support contract, you can also get help over the phone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following Web site to obtain the phone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

You can use an Express Routing Code (ERC) to quickly route your call to the appropriate support specialist. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

Chapter 2

About this document

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Subject

This Nortel Technical Publication (NTP) is an operations guideline for the systems maintenance engineer of a Call Center Management Information System (CC MIS) linked to an MSL-100 (Meridian 1 Options 111-211), Digital Multiplex Switch (DMS)-500, or a DMS-100 supporting the Batch Change Supplement (BCS) 35 and BCS 43 protocol versions.

The ACD-MIS Interface Specification version that corresponds to each BCS version is as follows:

- BCS 35 = Version 9
- BCS 43 = Version 11

Nortel recommends that you use BCS 43 (if available) on your switch.

Applicable systems

CC MIS is a tool for managing the agents who handle Automatic Call Distribution (ACD) calls. The CC MIS is linked to an MSL-100 (Meridian 1 Options 111-211), DMS-500, or a DMS-100 switch.

Intended audience

This document contains procedures to assist system engineers in maintaining the CC MIS system. This document can also be used as a resource for anyone involved in the planning, installation, configuration, or maintenance of the CC MIS application.

Conventions

The switch supporting CC MIS, the MSL-100, the DMS-500, or the DMS-100 is called a DMS-ACD throughout this NTP.

Table 1 lists the typographic conventions that are used throughout this guide.

Table 1: Typographical conventions

Key Sequence	Function
<Return>	Words in angled brackets represent a specific key on your keyboard that you should press.
[Commands]	Words in square brackets represent one of the keys available to you from the function key menu.

Note: The function keys associated with a command are listed on the lower portion of the appropriate screen. Procedures in this NTP provide the name of the function key. The screens show examples of function keys with their associated commands. The function key number depends on the type of terminal and emulation mode being used. See each program screen for the actual function key to press to select the desired command.

Table 2 lists typographic conventions that are used in the procedural tables in this guide.

Table 2: Conventions used in procedures

Key Sequence	Function
Type xyz	Bold letters represent the key that you press in the action part of the procedure. <enter> means that you press the ENTER key after you press the function key.
Notice	Words in this font represent a system response to the actions in the procedure.

Related information

This section explains where you can find additional information about CC MIS.

NTPs

The following NTPs contain additional information to supplement this document:

- *CC MIS System Description (297-2671-150)*
- *CC MIS Getting Started Guide (297-2671-175)*
- *CC MIS Release Notes (297-2671-211)*
- *ACD MIS Interface Specifications, Version 11 (NT MIS-Q209-2)*
- *DMS-100 Common Customer Data Schema (297-1001-451)*
- *MDC Customer Data Schema (297-2001-451)*
- *Meridian SL-100 ACD General Description (555-4101-100)*
- *Meridian SL-100 ACD Load Management (555-4101-102)*
- *Meridian SL-100 ACD Management Information Interface (555-4101-103)*
- *Meridian SL-100 ACD Feature Operation and Testing (555-4101-300)*
- *Meridian SL-100 ACD MMI and Feature Implementation (555-4101-310)*
- *Meridian SL-100 Network ACD General Description (555-8101-100)*

For more information about ACD, see the following NTPs:

- *ACD Product Guide (297-2041-010)*
- *ACD Server Product Guide (297-2041-011)*
- *ACD Planning and Engineering Guide (297-2041-101)*
- *ACD Planning and Engineering Guide - Canada (297-2041-104)*
- *ACD Administration Guide (297-2041-301)*

- *ACD Translations* (297-2041-350)
- *ACD Maintenance Guide* (297-2041-500)
- *ACD Trouble Locating and Clearing Procedures* (297-2041-503)
- *M5212 ACD Set General Description* (297-2041-900)
- *ACD End-User Load Management* (297-2041-901)
- *Network ACD General Description* (up to BCS 34) (555-8101-100)

Online

To access Nortel documentation online, click the Technical Documentation link under Support on the Nortel home page:

www.nortel.com/documentation

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer representative.

Chapter 3

CC MIS requirements

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Overview

Call Center Management Information System (CC MIS) is a tool for managing the agents who handle Automatic Call Distribution (ACD) calls.

Prior to installing the CC MIS application, a set of requirements and guidelines must be met. The requirements and guidelines include the following:

- hardware requirements
- operating system requirements
- software requirements
- third-party software guidelines
- preinstallation requirements

You cannot upgrade a system from Release 5.2 to Release 6.0; however, you can import data from a Release 5.2 system to a Release 6.0 system using an import tool that is available in CC MIS Release 6.0. For more information, see “Data migration” on page 55.

CC MIS Software CD-ROM

The CC MIS Software CD-ROM includes the following:

- CC MIS server application software
- CC MIS client application software
- CC MIS NTPs
- preinstallation script (for server-side installation)
- Adobe Acrobat Reader 5.0.5 (for viewing NTPs)
- technical bulletins

Hardware requirements for the CC MIS server

CC MIS Release 6.0.1 operates on hardware that is supplied by the customer or platform vendor independent (PVI) hardware. Use the information in Table 3 to select a suitable platform. CC MIS hardware must meet or exceed a set of minimum and recommended (where possible) requirements, as outlined in Table 3.

Table 3: Hardware requirements for CC MIS server (Part 1 of 4)

Hardware	Supported Minimum	Notes
Central Processing Unit (CPU)	Intel Pentium 4 processor or Intel XEON processor	For optimal performance, the average CPU utilization must not exceed 50 percent over at least a 15-minute time interval.
Random Access Memory (RAM)	1 Gbyte minimum	2 Gbyte is required for more than 1000 supervisors.
Hard disk space	36 Gbyte minimum	Additional hard disk space is dependent on installation size.
Hard disk partitioning	1 physical drive	
Hard disk type	Small Computer System Interface (SCSI) or Integrated Drive Electronics (IDE)	Nortel recommends SCSI.

Table 3: Hardware requirements for CC MIS server (Part 2 of 4)

Hardware	Supported Minimum	Notes
Hard disk speed	Speed of 7200 revolutions per minute (rpm) from manufacturer's specification	Nortel recommends 10 000 rpm SCSI drives for installations of 1000 agents or more.
Redundant Array of Independent Disks (RAID)	RAID-1 (type 1) controller recommended	The RAID-1 controller provides: <ul style="list-style-type: none"> ■ disk data redundancy ■ error detection and correction Note: Software RAID is not supported
Floppy disk drive	Not required	
Optical drive	1 DVD-ROM	Nortel recommends that the CC MIS server has a DVD-ROM drive for installing operating system and application software.
Serial ports	1 serial port (for modem access)	Optional: A second serial port can be required for an uninterruptible power supply (UPS).
Parallel port	Not required	

Table 3: Hardware requirements for CC MIS server (Part 3 of 4)

Hardware	Supported Minimum	Notes
X.25	Not directly supported on the CC MIS server.	X.25 switch connectivity (when required) is achieved through the use of a TCP/X.25 bridge device, configured to bridge between an IP connection from the CC MIS to an X.25 connection to the switch. For more information, see Appendix B, "TCP/X.25 bridge devices."
Universal Serial Bus (USB)	Optional	Can be required for UPS support.
Network interface	1 network interface card (NIC)	NIC must be 100 Mb/s Ethernet Optional: Nortel recommends 2 NICs (if you want supervisor traffic on a separate LAN from switch traffic)
Video card/monitor	1 video card and 1 monitor	The monitor must have a minimum resolution of 800 x 600 pixels.
Keyboard	1 keyboard	
Mouse	1 mouse	

Table 3: Hardware requirements for CC MIS server (Part 4 of 4)

Hardware	Supported Minimum	Notes
Modem	1 external modem (requires a serial port)	A modem is not required if an alternative method for remote support is provided. (For example, Telnet from another system in the network.)
Backup/Restore	Optional: A separate system on the network that supports the Network File System (NFS) or Samba shared file systems can be used to store CC MIS backup data.	Another option is to use a separate physical disk as the location for backups.

UPS purpose and requirements

You can use a UPS with the CC MIS Linux server. A UPS provides the following benefits:

- Reduction in data loss—A UPS shuts down the server gracefully if an interruption in AC power occurs. A graceful shutdown prevents data corruption and reduces the risk of data loss.
- Reduction in power dips and spikes—The UPS regulates AC power supplied to the server.

Note: Any data backups that are running at the time of a shutdown are unusable.

If a UPS is attached to the CC MIS server, the UPS must meet the following requirements:

- provide at least 10 minutes of power to stop all services and shut down the server
- physically fit within the workplace
- have minimal environmental impact
- apply power to the CC MIS server when line voltage reaches a stable state
- recharge before powering up the server (if the server has been down for a long time)
- compatible with the operating system running on the CC MIS server
- meet all local regulatory requirements

Note: For the European market, the UPS must generate a pure sine wave AC waveform.

- have hot-swappable batteries

Note: Replacement or capacity upgrades of the batteries must not interrupt service.

- connect to the CC MIS server through a serial port on the server platform or through a network card or USB port, depending on the implementation
- cannot affect the CC MIS application software. The UPS software must not replace software or drivers installed on the CC MIS server with different versions.

Note: Install only the basic software functions necessary for the operation of the UPS. Do not install advanced features, as they can impact the CC MIS server software. The UPS software must be compatible with the version of operating system used by the CC MIS server.

If UPS software is installed on the CC MIS server, it must conform to the guidelines listed in this document for third-party utilities (see “Third-party software guidelines” on page 29). The installation, testing, and support of the UPS software is the responsibility of the customer.

Operating system requirements

CC MIS server

The CC MIS server must be running Red Hat Enterprise Linux Version 3 or Version 4. At this time, only the English version is supported.

Nortel ensures that the CC MIS application is compatible with the latest Red Hat Enterprise Linux operating system updates.

CC MIS clients

Each CC MIS client must run one of the following operating systems:

- Windows XP Professional
- Windows 2000 Professional

Note: Windows Vista is not currently supported.

Third-party software guidelines

Due to the mission-critical, real-time processing performed by CC MIS, do not install other application-class software on the server. You can install utility-class software on the server, provided it conforms to the set of guidelines starting on page 30.

Application-class software applications

ATTENTION

Do not install application-class software on the CC MIS server.

In general, application-class software requires a certain amount of system resources, and therefore must not be installed on any server running CC MIS.

The installation of third-party applications can cause the CC MIS server application to operate outside known engineering limits, and can therefore create potential unknown system problems (for example, CPU contentions, increased network traffic loading, or disk access degradations).

Utility-class software applications

Third-party utility-class software applications (such as hardware diagnostics or backup tools) are permitted on the CC MIS server. Generally, third-party utility-class software applications require less system resources during the normal operation of a CC MIS server application. However, there are exceptions, such as screen savers, which can cause system problems and degrade performance.

Antivirus software is classified as a utility-class software application and is subject to a set of guidelines. For more information about antivirus software guidelines, see “Generic guidelines for utility-class software applications” on page 30 and “Antivirus software guidelines” on page 31.

Generic guidelines for utility-class software applications

Utility-class software applications must meet the following guidelines:

- During run-time, the utility software must not consume a significant amount of CPU resources, as this can impact the operation of the CC MIS application. Nortel recommends that the utility consume less than one percent of the CPU resources during normal operation.
- The utility must not lower the minimum amount of free hard-disk space required by CC MIS and the Linux operating system.
- The utility must not cause any improper software shutdowns or out-of-sequence shutdowns.
- The utility must not administer the CC MIS server application.
- Disk compression utilities must not be used.
- The installation or uninstallation of third-party software must not impact or conflict with the CC MIS. If such conflicts are discovered, a rebuild of the server can be necessary.

The implementation personnel must perform tests to ensure these conditions and recommendations are met prior to placing the CC MIS into production. Nortel support personnel can ask for the results of the testing during fault diagnosis. As part of the fault diagnosis process, Nortel can ask the distributor or end user to remove third-party software.

Antivirus software guidelines

Nortel acknowledges that customers' security policies can require the installation of antivirus software on the CC MIS server.

As a result, Nortel has selected a representative sample of antivirus software packages and has a policy of performing (where possible) a validation of these products to ensure co-residency with CC MIS. Nortel has tested the following products:

- McAfee LinuxShield (recommended)
- eTrust Antivirus

Generic guidelines for the use of antivirus software are as follows:

- You must install the CC MIS application before you install the antivirus software. When the antivirus software is installed, it is the responsibility of the implementation personnel to perform testing with the antivirus software, in accordance with the "Generic guidelines for utility-class software applications" as outlined on page 30.
- You must schedule virus scans to run during off-peak hours. The scan must not start on the hour.
- The infected file quarantine policy on both the server and client must not impact the CC MIS application. Do not configure the antivirus software to automatically deal with suspected infected files.

ATTENTION

In the event that infected files are located, do not attempt to replace or remove them.

Contact your local Nortel support representative for assistance in determining if the files are part of the CC MIS application or a critical system file.

- Do not connect the CC MIS application platform directly to the Internet to download virus definitions or file updates. Instead, download virus definitions and file updates to another location on your customer network, and then manually load them from this interim location onto the CC MIS application platform.

- Nortel recommends that you scan all files, CD-ROMs, and floppy disks prior to installing or uploading to the CC MIS server to minimize any exposure to infected files from outside sources.
- Running antivirus scan software can place an additional load on the CC MIS server application platform. Run performance monitoring tools on the server to gauge CPU utilization. If the antivirus software scan causes the platform average CPU utilization to exceed the recommended percentage for longer than 20 minutes, do not load the antivirus software onto the CC MIS application server platform.

Notes:

1. Nortel does not provide configuration support of antivirus software, but Nortel does endeavor to offer guidance where possible. Direct any questions about or problems with the antivirus software to the appropriate vendor.
2. If performance or functionality issues are raised to Nortel support personnel, as part of the fault diagnosis process, Nortel can ask the customer or distributor to remove third-party utility software or antivirus software.

Remote support

If you require support for the CC MIS application, Nortel support personnel must be able to access the system remotely.

Remote support can be carried out using one of the following:

- through the use of a Virtual Private Network (VPN) where Nortel recommends the Nortel VPN Router 1100
- through customer-supplied equipment that can establish a Telnet connection with the CC MIS server
- through a direct dial-up connection to the CC MIS server

The CC MIS Maintenance and Administration application interface is completely text-based; therefore, remote desktop software is not required for remote technical support.

For more information, see “Setting up remote access to the server” on page 43.

Technical support

All hardware diagnostics are the responsibility of the hardware vendor. Check with the hardware manufacturer's instructions and recommendations before performing any hardware-related procedure.

It is the responsibility of the distributor or end user to verify that the selected server is ready to receive the CC MIS application prior to installing and configuring the CC MIS application. This verification includes the following:

- Ensure the server conforms to specifications as listed in this NTP.
- Ensure the operating system is functional (that is, the server boots up correctly, can connect to the network, and so on).

The distributor or end user must make an effort to rule out hardware faults before reporting problems to Nortel.

During the course of problem diagnosis, Nortel Global Networks Technical Support (GNTS) can ask to see the results of tests carried out on the hardware if issues are escalated to Nortel.

Nortel GNTS can request the removal of certain software utilities if it is deemed necessary as part of the fault investigation process.

Preinstallation requirements

This section provides platform setup guidance prior to the installation of the CC MIS application.

Prior to installing the CC MIS application software, perform the following steps to ensure that the platform meets the requirements of the CC MIS application. These requirements include the following:

- Ensure that all necessary Linux packages are installed.
- Set up remote access to the server.
- Create file systems for the CC MIS application and data.
- Prepare a backup storage location for the CC MIS application.

This section provides recommendations and guidance for performing these preinstallation steps; however, it is the customer's responsibility to determine the exact configuration to be used and operations to be carried out.

Nortel recommends that you see the Red Hat Enterprise Linux documentation for detailed information regarding any configuration task related to the operating system. The documentation is available on the Red Hat Documentation CD-ROM or on the Red Hat Web site.

Checking for required packages

The CC MIS application depends on the Linux packages listed in Table 4 for proper operation.

Table 4: Linux packages (Part 1 of 2)

Package	Description/Requirement
pdksh	<p>Public domain korn shell</p> <p>Most of the shell scripts included in the CC MIS application are written for the korn shell.</p> <p>This package is mandatory. You must install this package before you install the CC MIS application.</p>
mgetty	<p>Dial-up modem interface</p> <p>This package provides dial-up access to the Linux system in the event that you require Nortel support for the CC MIS application.</p> <p>If Nortel access to the system is provided through some other means (for example, Telnet from another server), then this package is not required. Otherwise, you can use the Red Hat Package Manager (rpm) tool to install the mgetty package from the Red Hat installation CD-ROMs prior to installing the CC MIS application. You can obtain detailed configuration information for the mgetty program from the program manual pages (also known as “man pages”) after you install the mgetty package.</p> <p>This package is optional.</p> <p>Note: Man pages is the UNIX term for manual pages. Manual pages or man pages are available on the system using the man command. For example, to look up information about the mgetty command, enter the command <code>man mgetty</code> at the UNIX command prompt.</p>

Table 4: Linux packages (Part 2 of 2)

Package	Description/Requirement
net-snmp	<p>Simple Network Management Protocol (SNMP) agent</p> <p>If you purchased the CC MIS SNMP option, a Linux SNMP package should be installed to provide support for the standard MIB-2 management information. The CC MIS application does not provide the standard MIB-2 information directly, but redirects incoming SNMP requests for variables within MIB-2 to the SNMP daemon provided by the Linux operating system.</p> <p>Note: MIB stands for Management Information Base.</p> <p>This package is optional. This package is not required if SNMP is not used to monitor the CC MIS application platform. Otherwise, you can use the Red Hat Package Manager (rpm) tool to install the “net-snmp” package from the Red Hat installation CD-ROMs prior to installing CC MIS.</p>

You can use the `rpm` command to test for the existence of these packages.

The format of the command is: `rpm -q <package_name>`

For example, the command used to check for the existence of the `pdksh` package is as follows: `rpm -q pdksh`

Network configuration

The CC MIS server requires a minimum of one network interface. The network interface is used for the following purposes:

- provides supervisors with access to the system using the CC MIS client
- connects to the ACD switch using a TCP/X.25 bridge device as an IP-to-X.25 bridge
- networks CC MIS systems together to form a networked call center system

Multiple network interfaces

The CC MIS application can use multiple network interfaces if more than one interface is available on the server. However, if multiple CC MIS systems are networked together, only the network interface identified by the system hostname is used for inter-node networking functions.

Note: The remainder of this section uses the term “primary” to indicate this interface.

Static IP address

You must configure all network interfaces on the CC MIS server with static IP addresses. Do not configure the network interfaces on the CC MIS server using Dynamic Host Configuration Protocol (DHCP).

Network firewalls

The CC MIS application is designed to work with the built-in Linux personal firewall that is based on iptables (iptables is the interface to the IP packet filter rules in the Linux kernel). Use the Security Level Configuration tool (redhat-config-securitylevel) to set up the firewall (as it offers the easiest method of setting up this firewall).

Note: For more information about iptables, see the iptables manual page. The manual pages are also known as “man pages”.

If the personal firewall is used on the system, Nortel recommends that you set up and configure the firewall prior to running the CC MIS application. Nortel also recommends that the Telnet service be allowed to pass through the firewall if Telnet will be used to provide remote access to the system.

When the CC MIS application is running, the application modifies the firewall rules as required to allow connections to be received on the various IP ports used by the application. If the CC MIS application is running when the Security Level Configuration Tool is used to configure the firewall, any firewall rules that have been created by CC MIS can be lost, requiring CC MIS to be restarted to recreate them.

Table 5 provides a list of all IP ports used by the CC MIS application to listen for inbound connections (or packets for any of the user datagram protocol [UDP] ports). Use the information in Table 5 to set up any firewalls that exist between CC MIS network components.

**Table 5: IP ports used by the CC MIS application for inbound connections
(Part 1 of 4)**

Protocol/Port	IP interface	Name	Description
UDP/161	Any	SNMP	CC MIS takes over the SNMP port to listen for SNMP requests from external network management systems. This port is not open unless you purchased the CC MIS SNMP option.
UDP/20005	Primary only	Network (N/W) Messaging	This port is used for messaging between networked CC MIS systems. This port is not open unless you purchased the CC MIS networking option.

**Table 5: IP ports used by the CC MIS application for inbound connections
(Part 2 of 4)**

Protocol/Port	IP interface	Name	Description
TCP/20001	Any	Static Clients	<p>CC MIS listens on this port for inbound connections from CC MIS supervisor clients that use the LAN-to-Host connection method. This is an older client interface that requires the following:</p> <ul style="list-style-type: none"> ■ The client IP address must be fixed. ■ The client IP address must be configured in the CC MIS configuration utility. The configuration indicates that the client at this IP address must be associated with a specific CC MIS partition.
TCP/20002	Any	Dynamic Clients	<p>CC MIS listens on this port for inbound connections from CC MIS supervisor clients that use the LAN-to-Partition connection method.</p> <p>With this client interface, the client can specify which CC MIS partition to connect to, provided the client can provide the access password for the partition. The IP address of the client does not need to be datafilled on the CC MIS server. Therefore, clients that get their IP address from a DHCP server can connect to the CC MIS server regardless of their IP address.</p>

**Table 5: IP ports used by the CC MIS application for inbound connections
(Part 3 of 4)**

Protocol/Port	IP interface	Name	Description
TCP/20006	Primary only	N/W Services	This port is used to establish connections between CC MIS network nodes for purposes such as obtaining data for network reports. This port is not open unless you purchased the CC MIS networking option.
TCP/20007	Primary only	N/W Statistics	This port is used to transmit real-time ACD statistical information between networked CC MIS nodes. This port is not open unless you purchased the CC MIS networking option.
TCP/20009	Any	DB Export	The CC MIS server uses this port to connect and retrieve one or more partition databases (DB) to move a partition from one CC MIS server to another.
TCP/201XX	Any	N/W Database	This port is used by a CC MIS Network Access Partition (NAP) to gain access to the definitions database of a partition being monitored by the NAP. The 'XX' value in the port number represents the partition number of the partition that is listening on the port.

**Table 5: IP ports used by the CC MIS application for inbound connections
(Part 4 of 4)**

Protocol/Port	IP interface	Name	Description
TCP/202XX	Any	N/W Load Management	This port is used by a CC MIS NAP to perform load management operations on a partition being monitored by the NAP. The 'XX' value in the port number represents the partition number of the partition that is listening on the port.

Setting up the standard SNMP agent

As mentioned in the section “Checking for required packages” on page 36, the optional SNMP feature within CC MIS relies on the Linux SNMP package (net-snmp) to provide support for MIB-2. By default, installation of the net-snmp package does not start the standard SNMP agent. If MIB-2 support is desired, you must configure the standard SNMP agent to run when the server is booted.

You can configure the standard SNMP agent by editing the /etc/init.d/snmpd service initialization file to have the standard agent started when the server is booted. Edit this file and ensure that the line near the top of this file that begins with “# chkconfig:” appears as follows:

```
# chkconfig: 2345 50 50
```

The entry “2345” indicates that the SNMP agent is to be started whenever the system enters run-levels 2 through 5.

After you edit the /etc/init.d/snmpd configuration file, use the `chkconfig` command to configure the startup of the SNMP agent as follows:

```
chkconfig snmpd reset
```

For more information about the `chkconfig` command, see the `chkconfig` manual page.

Setting up remote access to the server

Nortel recommends remote access to the CC MIS server to facilitate support of the CC MIS product. Remote access to the server can be provided through either of the following methods:

- through direct dial-up connection to the CC MIS server
- through a common dial-up facility that provides Telnet access to the CC MIS server

Either of these connections can require some setup or configuration, or both after the operating system installation.

Direct dial-up access

If you use a direct dial-up connection for remote access, you must verify the following:

- Ensure that the `mgetty` package is installed on the system (see “Checking for required packages” on page 36).
- After the `mgetty` package is installed, consult the manual page for detailed configuration information about the `mgetty` command.

For most installations, the `mgetty` configuration involves the creation of a new entry in the `/etc/inittab` file. The entry is similar to the following:

```
em:2345:respawn:/sbin/mgetty -D modem F38400
```

Telnet access

If you use the Telnet option for remote access to the server, you must install and configure a Telnet server on the CC MIS server.

By default, a Telnet server that provides Kerberos authentication is installed if the default installation options are accepted when the Red Hat Enterprise Linux operating system is installed. This Telnet server is part of the `krb5-workstation` package. The standard Telnet server (non-Kerberos) is available in the `telnet-server` package.

After you install a Telnet package, you must configure it before you can use it to access the system. The Telnet server is typically accessed through the Internet services daemon (xinetd). To configure the Internet services daemon to enable the selected Telnet server, you must provide a service configuration file in the `/etc/xinetd.d` directory. You can obtain detailed information about the operation and configuration of the Internet services daemon through the Red Hat documentation or using the `xinetd` and `xinetd.conf` manual pages. The `xinetd.conf` manual page provides sample service configuration files for many of the common Internet services.

Table 6 on page 44 shows usable examples of service configuration files for the Kerberos and standard Telnet servers.

Note: These service configuration files are examples only. You can use them as is or modify them to suit the needs of the environment in which the CC MIS server is installed.

Table 6: Examples of service configuration files (Part 1 of 2)

Example of service configuration file for the Kerberos Telnet server:

```
service telnet
{
    socket_type = stream
    wait        = no
    user        = root
    server      = /usr/kerberos/sbin/telnetd
    log_on_failure += USERID
    disable     = no
    server_args = -a off
}
```

Table 6: Examples of service configuration files (Part 2 of 2)**Example of service configuration file for the standard Telnet server:**

```
service telnet
{
    socket_type = stream
    wait        = no
    nice        = 10
    user        = root
    server      = /usr/sbin/in.telnetd
    disable     = no
}
```

Whenever a change is made to a service configuration file, the xinetd daemon process must be notified of the change so that it can reload its configuration. The xinetd server control script can be used to perform this notification (see Figure 1).

Figure 1: Sending a reload notification to the xinetd process

```
# /etc/init.d/xinetd reload
Reloading configuration: [ OK ]
```

Setting up CC MIS application and data file systems

In Linux, file systems are used to partition the physical disk space into usable segments. These segments can then be used for a particular purpose. File systems are also used to add disk space to the system when the need for additional space arises.

The CC MIS application uses file systems for both of these purposes. Nortel recommends that you use separate file systems for the application software and the application data.

Nortel also recommends that you install the CC MIS application into a file system that is dedicated to the CC MIS application. This file system must reside on a local disk (it cannot reside on a network share or NFS file system) and must be at least 300 MB in size. CC MIS uses the file system for the following purposes:

- All application executable files reside in this file system.
- The configuration database resides in this file system.
- All inter-process communication files are located in this file system.
- Temporary file space in this file system.

Installing the CC MIS application in its own file system safeguards both the operating system and the application by ensuring that the CC MIS application cannot consume more disk space than it should, and by ensuring that other applications cannot impact the operation of the CC MIS application (that is, in terms of disk space consumption).

In addition to the CC MIS application file system, Nortel recommends that you assign another file system for the storage of CC MIS data. The size of this file system must be 2 GByte or greater, depending on the size of the call center, the number of CC MIS partitions whose data will be stored on the file system, and the data retention periods selected. CC MIS does not require that the data for all partitions be located in the same file system; however, the data for a single partition cannot be split across file systems. Therefore, as you add additional partitions to the system, you can add additional disk storage as a new file system to provide the data storage for the new partitions. In addition, you can move the data for a particular partition among file systems using the CC MIS Configuration utility.

To ensure that the data is always available to the application and to decrease access time, all data storage file systems used by CC MIS must reside on a local disk.

Table 7 is a suggested hierarchy for the file systems associated with the CC MIS application.

Table 7: Suggested directory hierarchy for CC MIS file systems

Directory	Description
/mis	directory in the “root” file system
/mis/system	mount-point for the CC MIS application file system
/mis/data	subdirectory in /mis for data file system mount-points
/mis/data/fs1	mount-point for the first CC MIS data file system
/mis/backup	mount-point for the CC MIS backup file system

To create the necessary file systems and directory structure, you must be familiar with disk partitioning concepts and the commands and configuration files listed in Table 8.

Table 8: Disk partitioning commands and configuration files

Command/ Configuration File	Description
parted	Partition editor Used to create disk partitions.
mkfs	Used to build a file system on a disk partition.
e2label	Used to add a unique label to a Linux file system.
mkdir	Used to create the directories used as file system mount-points.
/etc/fstab	File system configuration file.
mount	Used to manually mount a file system.

Note: The *Red Hat Linux System Administration Guide* provides detailed information about file systems and disk partitioning. The guide is a good reference for completing the task of setting up the file systems required by CC MIS.

Setting up a CC MIS backup location

CC MIS provides the ability to back up all databases associated with the application, either on a nightly basis or on demand. These backups are taken while the system is running with little or no impact on the operation of the system. The backups are stored in another file system that is separate and distinct from the file system containing the application and any of the data file systems. Unlike the data file systems, you can use a nonlocal file system as the location for the CC MIS backups (for example, an NFS or Samba file system).

As a general guideline, the size of the backup file system must be approximately twice the size of the combined data storage requirements for all partitions on the CC MIS system. This requirement stems from the fact that the automatic nightly backup performed by the system does not delete the backup from the previous night until the current backup is complete. As a result, at the completion of the nightly backup, two complete backups exist in the backup file system for a short period of time. When the current backup is complete, the previous backup is removed from the system.

The following databases are, or can be, included in the nightly backup:

- Configuration database—This small database (approximately 20 KB) contains global CC MIS configuration information (such as switch link definitions and partition definitions). This database is always included in the nightly backup.
- Partition databases—Each partition, except NAP partitions, contains two databases: a definitions database and an historical data database.
 - Definitions database—This database contains items such as report and display definitions, agent definitions, schedules, and ACD group definitions. Supervisors use the CC MIS system to define these items.

- Historical data database—This database contains the statistical information gathered from the switch and is stored over some period of time. The historical data database is the larger of the two partition databases.

Note: Because NAP partitions do not store any historical data themselves, they do not contain an historical data database.

Each partition contains a configuration option that indicates which of the partition databases to include in each nightly backup. Under normal circumstances, both of the partition databases must be included in the nightly backup; however, there are situations where you can omit one or both of these databases from the backup. These situations include the following:

- In the case of a training partition, it may make sense to disable backups completely because the definitions and data associated with the partition are not critical to the operation of the call center.
- When the data storage location is located on a RAID volume, it may make sense to back up only the definitions database. Because the RAID is providing protection against physical disk failures and the CC MIS application is in complete control of the historical data, the only protection provided by a backup in this case is in the case of accidental deletion of definitions by a supervisor. Even then, because it is not possible to restore only a selected definition or type of definition, the restoration of the definitions database from a backup should be considered only as a last resort.

These special situations must be considered when deciding on a backup strategy for the system.

If an NFS or Samba file system is used as the backup location, you must ensure that the ccmis user account on the CC MIS system can write to this file system, as this is the user ID under which the backup and restore process runs.

In either case, you need to create a new entry in the `/etc/fstab` file to describe the network file system and to have the file system mounted automatically each time the system is booted. Table 9 provides examples of `fstab` entries for NFS and Samba file systems. These are examples only; the exact parameters can differ depending on the network in which the CC MIS system is located.

Table 9: Examples of `fstab` entry for the backup file system

Example of `fstab` entry for an NFS-based backup file system:

```
<somehost>: /<somedir> /mis/backup nfs rw,bg 0 0
```

Where:

- `<somehost>` is the hostname or IP address of the server containing the file system to be mounted.
- `<somedir>` is the mountpoint of the file system exported using NFS.
- `/mis/backup` is the local mountpoint of the NFS file system.

Note: For more information about the use of NFS file systems, see the `nfs` manual page.

Example of `fstab` entry for a Samba-based backup file system:

```
//<somehost>/<somedir> /mis/backup smbfs credentials=/etc/creds,dmask=0770,rw 0 0
```

Where:

- `<somehost>` is the hostname or IP address of the server containing the file system to be mounted.
- `<somedir>` is the directory being shared by `<somehost>`.
- `/mis/backup` is the local mountpoint of the Samba file system.
- `/etc/creds` is the name of a file containing the username and password of a user defined on `<somehost>`. For security purposes, the file must be owned by user “root” and have read-write permissions for the “root” user only (that is, 0600 or `-rw-----` permissions).

Note: For more information about the use of Samba file systems, see the `smbmount` manual page.

Note: Some configuration is required on the server that is exporting the file system; however, the details of such configuration is outside the scope of this document.

Preinstallation script file

A script file is included on the CC MIS Software CD-ROM that tests the suitability of the platform running the CC MIS application. You can run the script file (named preinstall) in stand-alone mode or during the installation of the CC MIS application.

Run the preinstallation script to verify that the system is properly configured for the CC MIS application. The preinstallation script starts on page 52.

```

*****
CC MIS Release 6.0.0.RTM.31 Pre-installation Verification
*****

```

System Information

```

Platform Type..... i386
Processor Type..... i686
Operating System..... GNU/Linux
Kernel Version..... 2.4.21-32.EL
Host Name..... ccmis1 (192.168.1.1)
CC MIS Keycode Serial Number..... XXXXXXXX

```

Note: The CC MIS Keycode Serial Number is derived from the Media Access Control (MAC) address.

Package Prerequisites

```

Korn shell (required)..... [OK] pdksh-5.2.14-21)
SNMP (optional)..... [OK] net-snmp-5.0.9-2.30E.12)
Dialup Support (optional)..... [INACTIVE] (mgetty-1.1.30-3)

```

Application Installation Location

Application installing to: /mis/system

Initial Data Storage file system (Local Only)

Please enter the number of the file system where the CC MIS application data will be stored.

Note: It is recommended that the application data be stored on a different file system than the application.

	FILE SYSTEM -----	TYPE ----	AVAIL MB -----	TOTAL MB -----
1.	/tmp	ext3	918 MB	1012 MB
2.	/usr	ext3	6955 MB	9837 MB
3.	/var	ext3	9215 MB	9837 MB
4.	/home	ext3	2365 MB	2525 MB
5.	/mis/system	ext3	1952 MB	2108 MB
6.	/mis/data/fs1	ext3	9313 MB	9845 MB
7.	/mis/data/fs2	ext3	3706 MB	3938 MB
8.	/mis/backup	ext3	24147 MB	25472 MB

Select data storage file system [8]: 6

The file system selected for data storage has 9845 MB of available space.

Do you want to dedicate the entire file system for data storage? (yes/no): y

Data Backup File System (Local or Remote)

Please enter the number of the file system where the CC MIS application data will be backed up to.

Note: The data backup file system cannot be the same as the file system used to store the application data.

	FILE SYSTEM -----	TYPE ----	AVAIL MB -----	TOTAL MB -----
1.	/tmp	ext3	918 MB	1012 MB
2.	/usr	ext3	6955 MB	9837 MB
3.	/var	ext3	9215 MB	9837 MB
4.	/home	ext3	2365 MB	2525 MB
5.	/mis/system	ext3	1952 MB	2108 MB
6.	/mis/data/fs1	ext3	9313 MB	9845 MB
7.	/mis/data/fs2	ext3	3706 MB	3938 MB
8.	/mis/backup	ext3	24147 MB	25472 MB
9.	None	N/A	0 MB	0 MB

Select data backup file system [8]:

The /mis/backup file system has been selected as the location to store CC MIS backups. At this point you can choose to direct the backups to the root of this file system or to a subdirectory within this file system. A subdirectory is not required if this file system will be dedicated for receiving CC MIS backups. Otherwise, it is recommended that a subdirectory be specified to keep the CC MIS backups separate from other files stored on this file system.

Enter a directory path relative to /mis/backup in which CC MIS backups are to be stored, or simply press <Enter> to place CC MIS backups at the root of the file system.

Backup subdirectory? <ENTER pressed here>

Pre-installation Summary: Passed (with 2 warnings)

The pre-installation report is available in:
/tmp/CCMIS_PI_Report.txt

Would you like to view it now? (yes/no): n

Data migration

CC MIS Release 6.0 provides the capability of migrating data from a system running CC MIS 5.2 to a system running CC MIS Release 6.0.

An Import function was added to the Backup and Restore Utilities menu (in Release 6.0), which allows data to be imported from a system running Release 5.2. With the Import option, you can import selected CC MIS databases from other CC MIS systems over a TCP/IP connection. CC MIS Release 6.0 systems can import data from CC MIS systems running 5.2 or later.

For details about migrating data from a CC MIS Release 5.2 system to a CC MIS Release 6.0 system, see Procedure 26 on page 193.

Chapter 4

CC MIS overview

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Description of CC MIS

Call Center Management Information System (CC MIS) is a tool for managing the agents who handle Automatic Call Distribution (ACD) calls. CC MIS helps supervisors plan, manage, and monitor their ACD operation by collecting statistics on the performance of equipment and personnel.

Networked CC MIS

The Networked CC MIS feature is available in Release 6.0. This feature must be purchased and enabled in customer options. When enabled, the Configuration menu in the Maintenance interface contains commands for defining a CC MIS network. For information about setting up CC MIS nodes for network access, see “Networked CC MIS” on page 251.

CC MIS interfaces

CC MIS consists of two interfaces: supervisor terminals and a maintenance console.

Supervisor terminals

Supervisors manage their agents through menus accessed at a supervisor terminal. The terminal is a personal computer (PC) running Windows 2000 Professional or Windows XP Professional. The terminal is defined as a supervisor terminal linked to a CC MIS Linux server. CC MIS online Help contains procedures to assist supervisors in using CC MIS.

Supervisors can display information on wallboards. The CC MIS application supports a variety of monochrome or multicolor LED wallboards from Spectrum Corporation, as well as Daktronics and Generic wallboards. Wallboards are mounted on the wall of an ACD group office. Supervisors use the wallboards to notify agents of statistical and administrative information.

For more information about the Supervisor Interface, see the *CC MIS Getting Started Guide* (297-2671-175).

Maintenance console

Engineers maintain CC MIS through the maintenance console.

Engineers log on to the CC MIS server, using the ccmis user ID to configure and maintain the CC MIS application (either at the physical console associated with the server [consisting of a monitor, a keyboard, and a mouse], or through dial-up or Telnet access to the server). The Maintenance interface is completely text-based for easy remote access.

When you log on to the CC MIS server at the physical console, Nortel recommends that one of the text-based virtual consoles be used. Each Linux system has seven virtual consoles, which are accessed by pressing [Ctrl]-[Alt]-[Fx] at any time, where Fx is one of the functions keys (F1–F7). Virtual consoles 1 through 6 are text-based consoles and virtual console 7 is the graphical console. Most operating system configuration is carried out through the graphical console, using the configuration tools supplied with the operating system.

Engineers can use the Maintenance interface to perform the following functions:

- perform diagnostics
- adjust CC MIS configuration and logon parameters to the switch
- add and delete partitions
- view and print logs
- perform routine backup, restore, and software upgrade functions for the CC MIS system
- establish and modify CC MIS network parameters

Features added or modified in Release 6.0

CC MIS Release 6.0 consists of the CC MIS Release 5.x feature set, including maintenance Release 5.2 and its associated patch releases.

Release 6.0 ports the CC MIS software to the Linux operating system. CC MIS Release 6.0 is a software-only solution. The purchase and maintenance of the system hardware is left to the customer.

Note: Release 6.0 does not support the Motorola 88K/SVR4 and PowerPC/AIX platforms.

In Release 6.0, the Maintenance interface provides the following enhancements and changes:

- Direct X.25 connection to the switch is not supported. Links to the switch must be made using a TCP/X.25 bridge device, configured to provide an IP-to-X.25 bridge. You cannot configure an X.25 switch link on a Linux system. Instead, you can define live TCP/IP switch links and simulator links. For more information, see “TCP/IP switch links using ARN” on page 355.
- Backup to a tape drive is not supported. Instead, you use a user-specified directory to back up CC MIS. You can configure the directory to point to any device that can be mounted as a Linux file system, including an additional hard disk, a Network File System (NFS)-mounted file system, or any other network storage device that can be configured as a file system.
- CC MIS does not use printers configured on the CC MIS server to print reports generated within a customer partition. The Microsoft Windows printer interface provides a standard interface for printing CC MIS reports. Printing from the CC MIS Maintenance and Administration Interface is directed to the system default printer. The current set of configuration reports available within the CC MIS configuration utility can print to any client-attached printer, sent to an e-mail address (if Sendmail is configured), or saved as a text file on disk.

- With some exceptions, you can enter hostnames anywhere you can enter an IP address. The use of hostnames requires that you configure a name resolution protocol on the server (DNS or NIS).

Interface modifications

Table 10 outlines the modifications to the CC MIS Maintenance and Administration interface for Release 6.0.

Table 10: CC MIS Maintenance and Administration interface modifications

Interface	Modification
Main menu	<p>The Operating System Configuration menu option is removed.</p> <p>Note: In previous releases, this menu option was displayed only on PowerPC platforms.</p>
Run State Utilities	A Reboot menu option is added.
Backup and Restore Utilities	<p>An Import menu option is added.</p> <p>With this option, you can import selected CC MIS databases from other CC MIS systems over a TCP/IP connection. CC MIS Release 6.0 systems can import data from systems running Release 5.2 or later.</p>
	Backup to a tape drive is no longer supported. CC MIS data is backed up to a user-specified directory.
System Upgrade Utilities	No modifications.
Diagnostics	For a list of modifications, see Table 11 on page 64.
Modify Password	No modifications.
Configuration	For a list of modifications, see Table 12 on page 65.

Table 11 outlines the changes to the Diagnostics utility and its menu options.

Table 11: Diagnostics menu interface modifications

Interface	Modification
Display Free Disk Space	This option is removed.
Logs	<p>The Print Logs option is removed from the Logs screen.</p> <p>The Print command now prints to the system default printer.</p>
Reset Modem Port	The Release 5.2 option is removed.
Link Trace	<p>The Link Trace option is renamed Trace Switch Link.</p> <p>The Print Link Trace option is removed from the menu.</p> <p>The Print command now prints to the system default printer.</p>
X.25 Diagnostics	This option is removed.
TCP/IP Switch Link	This option is removed.
Test Individual I/O Ports	This option is removed.
View System Monitor	The IP Port Status screen now displays a complete list of all IP ports the CC MIS application currently has open.

Table 12 outlines the changes to the Configuration utility and its menu options.

Table 12: Configuration menu interface modifications (Part 1 of 2)

Interface	Modification
Configuration main menu	The Configuration utility starts in Display Only mode. If an update must be made, the user must change to the Updates Allowed mode using the Get Update Access Rights menu option.
	<p>An inactivity timeout was added to the Updates Allowed mode of the Configuration utility. If the inactivity timer expires (after two minutes), the user is removed from the Configuration Utility and returned to the Maintenance and Administration main menu.</p> <p>The inactivity timeout period is set to two minutes with an “Exiting in <i>nn</i> seconds” indicator appearing in the status line (top line of the display) during the last 30 seconds of this timeout period.</p>
System Configuration	<p>The System Name, CC MIS Network Name, and Backup Directory fields are listed on this screen.</p> <p>The LAN Parameters section is removed, as this type of configuration is performed using the operating system utilities.</p> <p>The Maintenance Printer Definition section is removed.</p> <p>A user-specified Backup Directory can be configured. This new feature replaces the backup to tape.</p>

Table 12: Configuration menu interface modifications (Part 2 of 2)

Interface	Modification
Physical Network Configuration	No modifications.
Switch Link Configuration	No modifications.
Terminal Server Configuration	No modifications.
Partition Configuration	A Host Email Support option is added to the the Configuration Options > Partition Options screen. With the Host Email Support option, you can send reports using e-mail directly from the CC MIS server.
	Printers is removed from the Configuration Options screen.
Disk Allocation	Is renamed Disk Storage.
	An Add key is added to the bottom of the Disk Storage screen. This key allows the user to add a new file system to the CC MIS for storing data.
SNMP Configuration	No modifications.
Reports	You can send configuration reports to any printer on CC MIS, including partition printers that are configured on supervisor PCs.
	E-mail and disk file options are supported.

Chapter 5

Installing CC MIS

In this chapter

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Installing the CC MIS server software

There are two types of CC MIS systems:

- Networked
- Stand-alone

If you are installing CC MIS Release 6.0 server software for the first time, the order for installation is as follows:

- Review the “Preinstallation requirements” on page 35.
- Perform the installation of the CC MIS server software. See “Installing the CC MIS server software on a new system” on page 76.
- Configure the system. See “Configuring the CC MIS application” on page 129.
- Create the partitions. See “Local Partitions” on page 197.

Note: Networked CC MIS systems must configure physical nodes and virtual nodes for network access partitions (NAP) as described in “Networked CC MIS” on page 251.

Preparing for installation

This procedure gathers the information needed to configure the historical database for each partition (excluding training partitions and network access partitions).

Note: These parameters are used solely for computing disk storage and do not affect the operation within CC MIS. The exception is the storage duration (time and date intervals) parameters, which also affect when data is deleted from the disk.

Table 13 defines the Data Storage Worksheet parameters and provides their limits.

Table 13: Data storage parameters (Part 1 of 8)

Parameter	Defines
Number of ACD groups	<p>The average number of ACD groups that can be datafilled to the pool assigned to the CC MIS system.</p> <p>Limits: 1–n, inclusive; where n is the number of ACD groups configured in the partition options screen.</p> <p>The license keycode defines the maximum number of groups and positions supported at a particular installation based on purchased options. CC MIS does not allow these maximums to be exceeded.</p>
Avg source ACD-DNs/group	<p>Enter the average number of source supplementary directory numbers (DN) that can provide calls for each ACD group.</p> <p>Limits: 1–9999, inclusive.</p> <p>Note: This field specifies the average number of supplementary DNs that provide calls for each ACD group in this partition. Supplementary DNs that can overflow to other ACD groups must be counted once for the ACD group in which they are configured, plus once more for each possible ACD group to which they can overflow.</p>

Table 13: Data storage parameters (Part 2 of 8)

Parameter	Defines
Avg active positions	<p>The average number of positions that can be active at any time.</p> <p>Limits: 1–n, inclusive; where n is the number of positions configured in the partition options screen.</p> <p>Note: The license keycode defines the maximum number of groups and positions supported at a particular installation based on purchased options. CC MIS does not allow these maximums to be exceeded.</p>
Avg agents per day	<p>The average number of agents that log on to CC MIS each day.</p> <p>Limits: 1–9999, inclusive.</p>
Avg agent events/ agent/day	<p>The expected number of agent events that can occur per agent per day. An agent event is defined as a log on, log off, walkaway, or return from walkaway.</p> <p>Limits: 2–9999, inclusive.</p>
Average LOB code/ group	<p>The expected number of line-of-business (LOB) codes used by an ACD group.</p> <p>Limits: 0–100, inclusive.</p>
Average walk codes/ group	<p>The expected number of walkaway codes used by an ACD group.</p> <p>Limits: 0–100, inclusive.</p>

Table 13: Data storage parameters (Part 3 of 8)

Parameter	Defines
Avg source groups/dest group	<p>The expected number of combinations of source ACD groups and destination ACD groups for which calls either overflow or are transferred.</p> <p>Limits: 1–9999, inclusive.</p> <p>If there is no overflow or transfer, set this value to 1. When there are no transfers and no overflow abilities except for enhanced overflow, each group can overflow to four groups and itself, for a total of 5. In this case, set this value to 5. If it is known that each group does not overflow to all groups on the average, you can decrease this value. If there are transfer calls and other overflow mechanisms in addition to enhanced overflow, increase this number. Use a conservative number to avoid filling up the database.</p> <p>Note: This parameter is a guide for the system to set the database storage to allow for the number of records determined by the factor. The system does not check that this guideline has been exceeded. If the system has not been engineered to match the actual requirements, the database storage can be exceeded.</p>

Table 13: Data storage parameters (Part 4 of 8)

Parameter	Defines
	<p>Note: This parameter is used strictly to determine the number of records in the INTERVAL overflow table. The system has a hard-coded factor of 60 percent to compute the number of records in the daily, weekly, and monthly tables. For example, if the inter-flow is set to five (and there are 21 groups), then 105 records are allocated for each interval overflow table. For the daily, weekly, and monthly tables, 105 multiplied by 1.6 (or 168) records are allocated. This is due to the fact that some source/destination combinations may not occur during an interval but may occur some time during a day. If the 60 percent value is low based on expected call patterns, the inter-flow parameter should be increased to cover this.</p>
Position moves per day	<p>The expected number of agent position reassignments that can occur in a day. This value is expressed as a percentage of the number of active positions.</p> <p>Limits: 0–100, inclusive.</p>
ACD-DN reassigns per day	<p>The expected number of supplementary DN reassignments that can occur in a day. This value is expressed as a percentage of the number of active Supplementary Directory Numbers (SDN).</p> <p>Limits: 0–100, inclusive.</p> <p>Verify that $SDN = \text{Number of primary and supplementary DNs to store}$.</p>

Table 13: Data storage parameters (Part 5 of 8)

Parameter	Defines
Disk Space for Agent Trace	<p>The amount of disk space that is reserved for storing Agent Trace data.</p> <p>Values: Specified in Megabytes (MB).</p>
Walkaway Statistics	<p>This parameter indicates whether or not Walkaway statistics data is stored.</p> <p>If None is chosen for this parameter, no data is stored in the Walkaway Statistics group and there is no data for any of the standard Walkaway by Group reports.</p> <p>If By Agent is selected, the statistics are gathered for the agent.</p> <p>If By Group is selected, the data for the group is stored.</p> <p>Values: None, By Agent, or By Group.</p>
ACD-DN Statistics	<p>This parameter indicates whether data is stored by ACD-DN.</p> <p>If None is chosen for this parameter, no data is stored in the ACD-DN Statistics group and there is no data for any of the Standard ACD-DN reports.</p> <p>If By Agent is selected, the statistics are gather for the agent.</p> <p>If By Agent is selected, the data for the group is stored.</p> <p>Values: None, By Agent, or By Group.</p>

Table 13: Data storage parameters (Part 6 of 8)

Parameter	Defines
LOB Statistics	<p>This parameter indicates whether line-of-business (LOB) statistics data is stored.</p> <p>If None is chosen for this parameter, no agent data stored in the LOB Statistics group and there is no agent data for any of the standard LOB by Agent Reports.</p> <p>The By Agent setting collects the data collects LOB statistics at the agent level.</p> <p>The By Group setting collects LOB statistics at the group level.</p> <p>Values: None, By Agent, or By Group.</p> <p>Note: If this parameter is set to By Group, the LOB statistics are not collected at the agent level of detail.</p>
Interval data stored for	<p>The number of days for which interval data should be kept.</p> <p>Note: Shift reports are generated from interval data. If a supervisor requests a shift report requiring data that extends beyond the time interval data is stored, no data is found for the report.</p> <p>Limits: 0–9999, inclusive.</p>

Table 13: Data storage parameters (Part 7 of 8)

Parameter	Defines
Daily data stored for	<p>The number of days for which daily data should be kept. Daily storage is historical data with a granularity of 24 hours (midnight to midnight).</p> <p>Note: Period reports use daily data to complete the period statistics. If a supervisor requests a period report requiring data that extends beyond the time daily data is stored, no data is found for the report.</p> <p>Limits: 0–9999, inclusive.</p>
Weekly data stored for	<p>The number of weeks for which weekly data must be kept. Weekly storage is historical data with a granularity of 7 days.</p> <p>Limits: 0–9999, inclusive.</p>
Monthly data stored for	<p>The number of months for which monthly data should be kept. Monthly storage is historical data with a granularity of one calendar month.</p> <p>Limits: 0–9999, inclusive.</p>
Agent event data stored for	<p>The number of days for which agent log events should be kept. Agent log events are events such as agent login or logouts and are reported on the agent log reports.</p> <p>Limits: 0–9999, inclusive.</p>
Agent trace data stored for	<p>The number of days for which agent trace log events must be kept. Agent trace log events are events are reported on the agent trace event log reports.</p> <p>Limits: 0–9999, inclusive.</p>

Table 13: Data storage parameters (Part 8 of 8)

Parameter	Defines
Number of shifts	The number of agent shifts that occur in a 24-hour period. Limits: 1–5, inclusive.
Operational days per week	The number of days (out of 7) in which there is some group active in the partition pool, which is being monitored by CC MIS. Limits: 1–7, inclusive.
Operational hours per day Note: Not used if Flexible Intervals are enabled.	The number of hours (out of 24) in which there is some group active in the partition pool, which is being monitored by CC MIS. Limits: 1–24, inclusive.

Installing the CC MIS server software on a new system

Perform the steps in Procedure 1 on page 77 to install the CC MIS server software on a new system.

ATTENTION

Nortel highly recommends that personnel familiar with the Linux operating system perform the initial installation of CC MIS Release 6.0.

Note: The instructions provided in Procedure 1 are based on the recommended directory structure as described in “Setting up CC MIS application and data file systems” on page 45 and “Setting up a CC MIS backup location” on page 48. If you choose a different directory structure or directory names or both for the installation of the CC MIS application, you must modify Procedure 1 accordingly.

Procedure 1: Installing the CC MIS server software on a new system**1** Ensure the following:

- the system is ready and the Linux operating system is installed
- the required file system directory structure was created as described in “Preinstallation requirements” on page 35

Note: The following CC MIS installation is a sample installation. This sample installation uses the recommended directory structure as described in the Preinstallation requirements. That is, there is a /mis directory with three subdirectories: system, data, and backup.

2 Insert the CC MIS Software CD-ROM in to the CD-ROM drive.**3** At login prompt, log on as **root** and enter the root password.**4** Check the permissions on the CC MIS mount-point directories. The permissions must allow proper access (rwxrwxrwx) for all three of the CC MIS directories (application, data, and backup).

Type the following commands to change to the /mis directory, and then list the directories found in the /mis directory:

```
cd /mis
```

```
ls -l
```

The system responds with the following information:

```
total 12
drwxrwxrwx 3 root root 4096 Feb 28 13:29 backup
drwxrwxrwx 4 root root 4096 Feb 28 13:25 data
drwxrwxrwx 3 root root 4096 Feb 28 13:28 system
```

5 Ensure that the backup and system mount-point directories display the proper permissions (drwxrwxrwx) in the first column of the display (shown in Step 4).

If the proper permissions are not displayed, issue the following command to correct the permissions:

```
chmod 0777 backup data system
```

Continue by checking the data file system mount-point by issuing the following command:

```
ls -l data
```

The system responds with the following information:

```
total 4
drwxrwxrwx   3 root   root 4096 Mar 30 18:42 fs1
```

- 6 Ensure that the data mount-point directory displays the proper permissions (drwxrwxrwx) in the first column of the display (shown in Step 4).

If the proper permissions are not displayed, issue the following command to correct the permissions:

```
chmod 0777 data/fs1
```

- 7 Type the following command to change directory to the root of the file system which will contain the CC MIS application:

```
cd system
```

- 8 Type the following commands to mount the CD-ROM file system (/mnt/cdrom) and list the contents of the "lnx" directory on the CD-ROM:

```
# mount /mnt/cdrom
# ls -l /mnt/cdrom/lnx
```

Note: If the CD-ROM is already mounted, an error can be displayed in response to the mount command. The error indicates that the mount command failed because the device is already mounted.

The system responds with information similar to the following:

```
total 15988
-r-xr-xr-x 1 root root 16343040 Feb 28 09:18 ccmis-
6.0.0-31.i386.tar
-r-xr-xr-x 1 root root 28520 Feb 28 09:18 preinstall
```

Note: The name of the ccmis .tar file depends on the actual release and build number of the CC MIS application.

- 9** Issue the `pwd` command to verify that you are in the correct installation directory.

```
# pwd
```

Verify that the correct directory (`/mis/system`) is displayed.

```
/mis/system
```

- 10** Type the following command to extract the contents of the `.tar` file, which is located in the `lnx` directory. Note that the name of the `.tar` file changes depending on the release of the CC MIS application being installed. The name of the `.tar` file is `ccmis-6.0.0-31.i386.tar` in this sample installation.

```
# tar xf /mnt/cdrom/lnx/ccmis-6.0.0-31.i386.tar
```

The system extracts the files from the `.tar` file.

- 11** Type the following list command to verify that the `.tar` was successfully extracted. The list command lists the contents of the current directory.

```
# ls -l
```

The system responds with the following information:

```
total 84
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 bin
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 cfgdb
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 ddb
drwxrwxr-x 3 8531 273 4096 Feb 28 09:18 etc
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 install
drwxrwxr-x 3 8531 273 4096 Feb 28 09:18 ipc
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 logs
drwx----- 2 root root 16384 Feb 28 13:28 lost+found
drwxrwxr-x 3 8531 273 4096 Feb 28 09:18 maint
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 mibs
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 operations
drwxrwxr-x 4 8531 273 4096 Feb 28 09:18 pcsi
drwxrwxr-x 3 8531 273 4096 Feb 28 09:18 spool
drwxrwxr-x 7 8531 273 4096 Feb 28 09:18 templates
drwxrwxr-x 4 8531 273 4096 Feb 28 09:18 text
drwxrwxr-x 2 8531 273 4096 Feb 28 09:18 tmp
```

12 Type the following command to change directory to the install directory.

```
cd install
```

The install directory was extracted from the .tar file. The install directory contains the installation scripts used to install the CC MIS application. Once in the install directory, the actual installation of the application is initiated with the ./install command.

13 Type the following command to start the installation.

```
./install
```

At this point, the preinstallation script runs to verify that the system is properly configured for the CC MIS application. For more information, see “Preinstallation script file” on page 51.

After the preinstallation script file executes, the CC MIS Release 6.0 installation script begins.

```
*****  
CC MIS Release 6.0.0.RTM.13 Installation  
*****
```

The CC MIS installation media may now be removed from the drive and stored in a secure place.

There were warnings generated during the pre-installation stage. You can choose to proceed with the installation now, or quit at this point and address the warnings before trying the installation again.

Are you ready to proceed with the installation?
(yes/quit)

14 Type y to start the installation.

The system continues the installation.

To correctly perform the installation it is important that the date and time on this system is set correctly. Please verify, and correct if necessary, the current date and time of this system.

Is the date and time Mon Feb 28 13:58:37 CST 2005 correct? (yes/no/quit)

15 Verify the date and type.

Type **y** if the date and type are correct. (Proceed to Step 16.)

Type **n** if the date and time are incorrect.

The following prompt appears:

Enter the correct date and time [mmddHHMMyyyy]:

When a new date and time are set, the Is the date and time correct prompt in Step 14 reappears.

16 Enter the password for the ccmis account.

The system displays the following message:

```
You must now supply an initial password for the
"ccmis" account.
```

```
Changing password for user ccmis.
```

The system displays the following prompts. Type the password for the ccmis account, and then retype the password to confirm.

```
New password:
```

```
Retype new password:
```

The system displays the following messages:

```
passwd: all authentication tokens updated
successfully.
```

```
Setting file permissions and ownerships:
File permissions and ownerships have been set
```

```
Starting Call Center MIS error logging: [ OK ]
```

```
CONFIG database installation:
CONFIG database installation completed
```

```
SNMP installation:
SNMP installation completed.
```

```
Standard definitions installation:
Installation of standard definitions completed.
```

17 Install the license keycode.

The system displays the following license keycode messages:

A license keycode must be installed before the CC MIS system can be started. The license keycode enables the options that were purchased for use with this system. You must have a keycode that was generated specifically for this system which has the serial number listed below:

System Serial Number: XXXXXXXX

Note: The System Serial Number is derived from MAC address.

Do you wish to install a keycode at this time?
(yes/no)

18 Type y to install the license keycode.

The system continues to display the license keycode messages:

You must now supply the keycode you received to activate the options/capacities you purchased. This keycode consists of five blocks of four characters.

Note: You must type the keycode EXACTLY as you received it. The case of the letters in the keycode is important.

Once entered, the keycode will be validated and the features enabled by it will be displayed, allowing you to confirm that the keycode was entered correctly.

- 19** Enter the license keycode in the format xxxx xxxx xxxx xxxx. The keycode must be typed exactly as it was received.

XXXX XXXX XXXX XXXX XXXX

Enter the keycode: xxxx xxxx xxxx xxxx xxxx

The system displays the options associated with the license keycode.

Note: The following are sample keycode option settings.

The option settings are:

```
System Serial Number      : XXXXXXXXX
License Keycode           : S2Q5 3432 ADWN PQKR E1FA
Customer Identification    : 1000
Number
Link Redundancy           : ENABLED
TCP/IP Links              : ENABLED
Data Export               : ENABLED
Language Support          : ENABLED
Auto. Position            : ENABLED
    Reassignment
SNMP Support              : ENABLED
Flexible Intervals        : ENABLED
Networking                 : ENABLED
Maximum ACD Groups        : 1024
Maximum Positions         : 9999
Maximum Wallboard Chains  : 64
Maximum Logins            : 2048
Maximum NAPS              : 4
Maximum Local Partitions  : 48
Maximum Switch Links      : 12
```

Are these options correct? (yes/no/quit)

20 Type **y** to accept the options.

The system displays the following messages:

```
The license keycode has been installed
```

```
Press RETURN to continue
```

21 Press **<enter>**.

The CC MIS application is installed.

22 To configure the CC MIS application, you must log on to the CC MIS Maintenance and Administration interface using the ccmis account. For details about the Maintenance and Administration interface, see “Accessing maintenance functions” on page 103.

Installing the CC MIS client software

The CC MIS client software is also known as the Supervisor Interface. The CC MIS supervisor terminal (client PC) runs on Windows 2000 and Windows XP.

Types of CC MIS client software installations

You can install the CC MIS client software on a supervisor terminal (client PC) in one of two ways: per-machine installation or per-user installation.

- When the CC MIS installation is performed by an administrative user, the user can choose either of these installation types by selecting either the Everyone or Just me option buttons that appear in the Select Installation Folder window (see Figure 3 on page 91) of the installation program.
- When the installation is performed by a user without administrative access rights, the user can perform only the per-user installation and no options appear in the Select Installation Folder window (see Figure 4 on page 91) of the installation program.

Per-machine installation

In the per-machine installation, the CC MIS client software is installed by a Windows user that has administrative access rights. This user can install the software into the common Program Files folder on the computer. A single instance of the application exists on the computer and all users of that computer can run the application.

Running the CC MIS client software from a per-machine installation affects the operation of the Client Services component of the application. The Client Services component provides the ability to configure a Windows printer (along with file and e-mail report destinations) into the CC MIS application such that any CC MIS supervisor can send reports to these report destinations as long as the client application is running. Client Services also

provides a similar capability for wallboards that are physically connected to the supervisor terminal to be exposed to the CC MIS application as a whole. When run from a per-machine installation, the following restrictions apply to the setup and use of the Client Services component:

- The initial configuration of CC MIS Client Services must be performed when logged on to Windows as a user with administrative privileges. The selection of client services that this client can provide (available on the Services tab such as saving reports to disk, printing reports, e-mailing reports, or PC-attached wallboards) is restricted to users with administrative privileges.
- Non administrative users can make changes to the computer name field or any of the parameters found on the other tabs of the Client Services dialog box.
- After these administrator-level tasks are complete, any Windows user can run the CC MIS client software, regardless of privilege level.

In a per-machine installation, the Client Services component is a shared resource whose exposed services can only be changed by an administrative Windows user. Any report destinations and wallboards configured into Client Services in this per-machine installation are active whenever any user of the shared PC runs the CC MIS client.

Per-user installation

In the per-user installation, the CC MIS client software is installed such that it can be accessed only by the user that installed it (unless another user also installs it). Any user can perform a per-user installation of the software.

Unlike the per-machine installation, a normal user running a per-user installation of the CC MIS client software can make changes to the Client Services component without requiring administrative privileges. However, each per-user installation of the application on the same PC appears as a separate supervisor terminal to the CC MIS server. For example, if user A and user B each install the CC MIS client software and configure Client Services on a shared PC, then when user A is logged on and using the CC MIS client, only the report destinations (or wallboards) configured in

Client Services by user A are active. Reports sent to any of the report destinations configured by supervisor B are queued for printing until user B logs on and starts the CC MIS client. Likewise, any wallboards configured by user B do not receive any messages or updates from the CC MIS server.

Installing the CC MIS on a new supervisor terminal

Use Procedure 2 on page 88 to install the CC MIS client software on the supervisor terminals. The standard (English) version of Microsoft Windows 2000 Professional or Windows XP Professional software must be installed prior to performing this procedure.

The CC MIS Software CD-ROM is required to perform Procedure 2.

Perform the steps in Procedure 2 to install the CC MIS client software on a supervisor terminal.

Procedure 2: Installing the CC MIS client software on a supervisor terminal

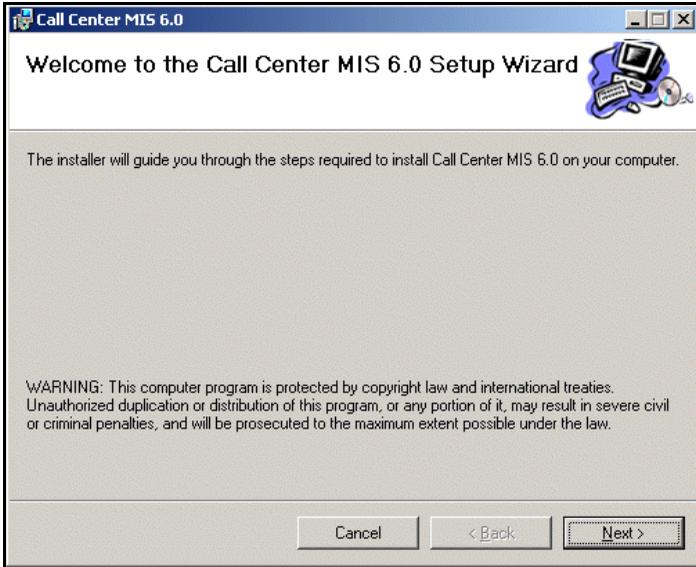
- 1 Ensure that the Microsoft Windows operating system software is installed on the supervisor terminal.
- 2 Place the CC MIS Software CD-ROM in the CD-ROM drive.

If the setup program does not run automatically when the CC MIS Software CD-ROM is inserted in the CD-ROM drive, you can use one of the following methods to start it:

- Use the Windows Explorer program to open the **Win** folder on the CD-ROM, and then double-click on the **setup.exe** program.
- Click the **Start** button, and then select the **Run...** command. The Run dialog box appears. In the **Open** field, type **D:\Win\setup.exe** (substitute the drive letter of your CD-ROM drive if it is not 'D:'), then click the **OK** button.

The Install Initialization window appears during initialization.

After the initialization is complete, the Welcome window appears (see Figure 2).

Figure 2: Call Center MIS 6.0 Setup Wizard — Welcome screen**3 Click Next.**

The **Select Installation Folder** window appears:

- Figure 3 on page 91 appears if the Windows user installing the CC MIS client software has administrative rights (is a Windows administrative user).

The administrative user can install the CC MIS client software in the default folder displayed in this window (the default folder in Figure 3 is the C:\Program Files\Nortel Networks\Call Center MIS 6.0 folder).

The administrative user can also install the software on the PC for their everyone's use or their own use (see the Everyone and Just me options buttons in Figure 3). The Everyone option button corresponds to the per-machine installation and the Just me corresponds to the per-user installation.

- Figure 4 on page 91 appears if the Windows user installing the CC MIS client software does not have administrative rights (a normal Windows user).

The Everyone and Just me options buttons are not included in this window. When the CC MIS client software is installed by a normal user, it is installed as if the Just me option had been selected in the Select Installation Folder window that appears when an administrative user installs the software. In this case, the installed CC MIS program is available only to the user who installed the program.

A normal user may have to change the default folder where the CC MIS client software is installed (if the user does not have the access rights to create files in the Program Files folder). As a normal user, you must have “write” privileges to the new folder you select for the location of the software installation; otherwise the installation fails. Figure 4 shows a sample folder location.

Figure 3: Select Installation Folder window — User with administrative rights (Administrative user)

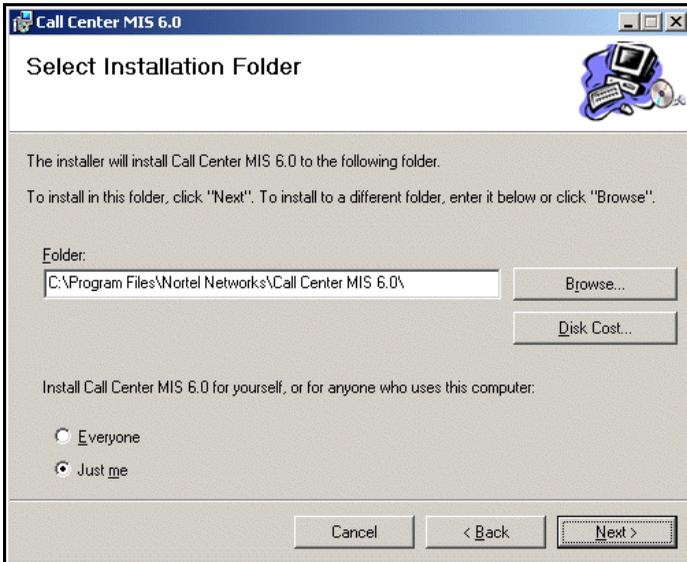
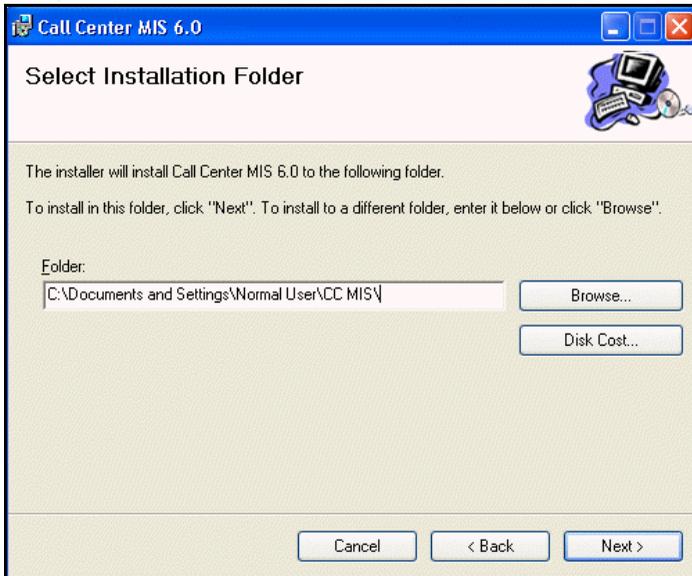


Figure 4: Select Installation Folder window — User without administrative rights (Normal user)

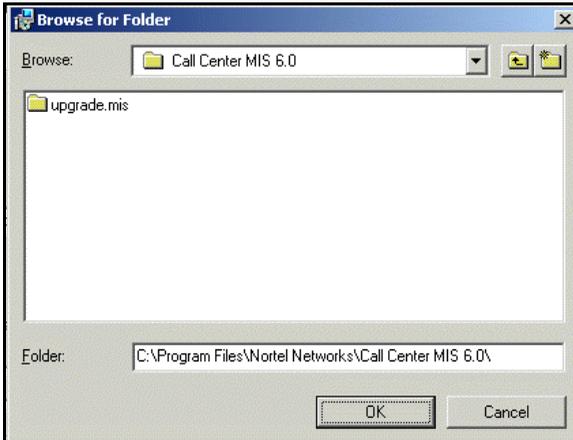


- 4 Verify that the information in the **Folder** text box is correct.
 - If the folder location is correct, skip to Step 7 on page 92.
 - If the folder location is incorrect or must be changed, go to Step 5.

- 5 Click **Browse**.

The Browse for Folder window appears (see Figure 5 on page 92).

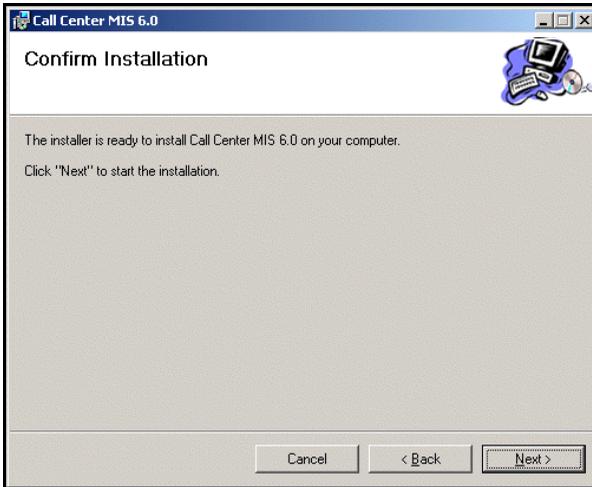
Figure 5: Browse for Folder



- 6 Browse to the correct folder location and click **OK**.
- 7 In the Select Installation Folder window, click **Next**.

The Confirm Installation window appears (see Figure 6).

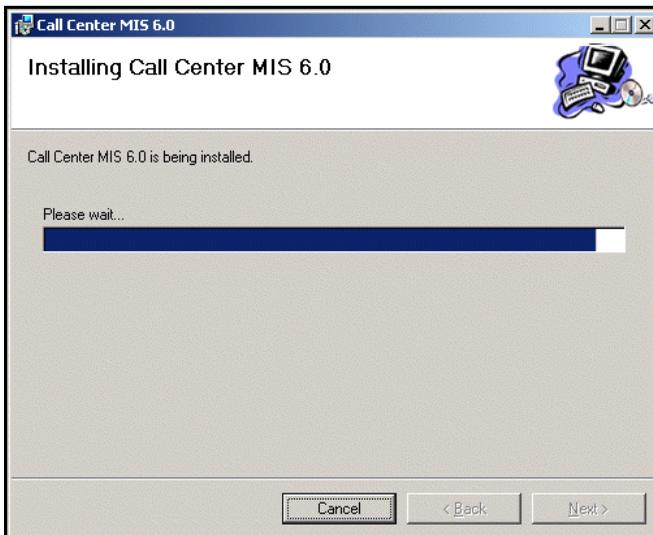
Figure 6: Confirm Installation



8 Click Next.

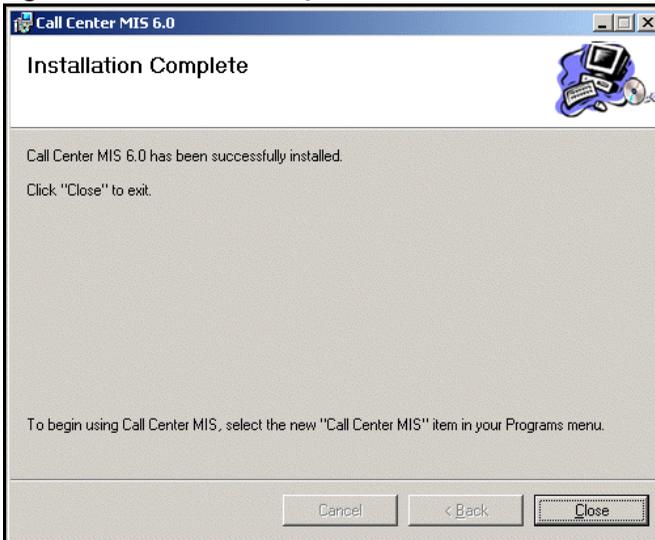
The Installing Call Center MIS 6.0 (Windows Supervisor Interface to CC MIS) appears (see Figure 7 on page 93).

Figure 7: Installing Call Center MIS 6.0



When the installation is complete, the Installation Complete window appears (see Figure 8).

Figure 8: Installation Complete



9 Click **Close** to close the Installation Wizard.

10 Click **Start > Programs > Call Center MIS** to launch the Call Center MIS 6.0 application.

The CC MIS Main window is displayed. If there is a red rectangle around the Connection Status icon (see Figure 9), the CC MIS client is not connected to the CC MIS server. A green rectangle indicates a connection between the CC MIS client and server (see Figure 10).

Figure 9: CC MIS Main window - not connected

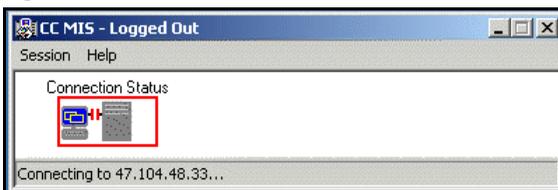
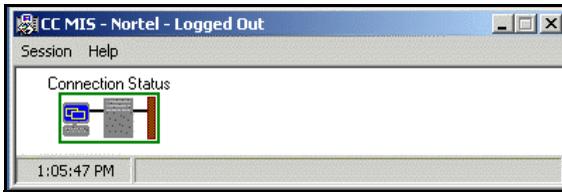


Figure 10: CC MIS Main window - not connected

11 To verify the CC MIS version, select **Session > About CC MIS**.

Verify the version number in the dialog box, and then click **OK** to close the dialog box.

ATTENTION

The following steps require that the CC MIS server software is installed and configured on the CC MIS server. You cannot log on to the supervisor terminal and work in the Supervisor Interface unless the CC MIS server is installed and configured.

12 To log on to the Supervisor Interface, select **Session > Login**.

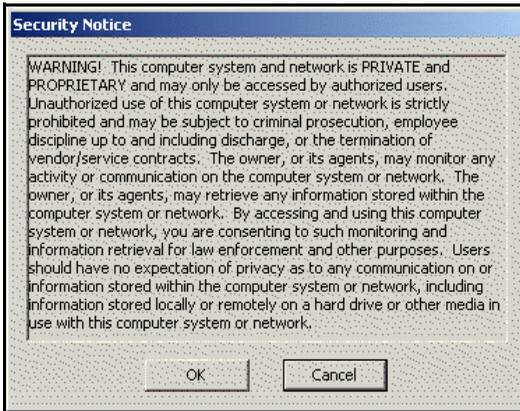
The CC MIS Login window appears (see Figure 11).

Figure 11: CC MIS Login

13 Enter the **Login ID** and **Password**, and then click **OK**.

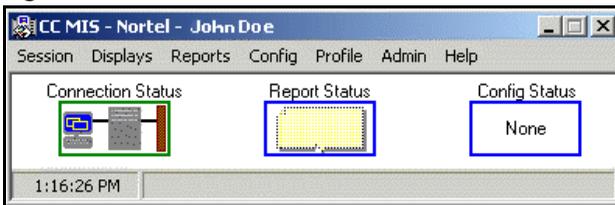
- 14 The Security Notice dialog appears (see Figure 12). After reading the notice, click **OK**.

Figure 12: Security Notice



The CC MIS 6.0 Supervisor interface appears (see Figure 13)

Figure 13: CC MIS interface



For detailed information and procedures for using the CC MIS Supervisor interface, see the *CC MIS Getting Started Guide* (297-2671-175).

Upgrading CC MIS on an existing supervisor terminal

The installation media is not required for PCs already running Release 3.2 or later of the Windows-based CC MIS client software. After CC MIS Release 6.0 is installed and configured on the CC MIS server, these PCs can start their current version of the CC MIS client and are prompted to download and automatically install the upgrade when a connection to the CC MIS 6.0 server is established. Following the download of the installation program from the server, the installation proceeds as described in the section “Installing the CC MIS on a new supervisor terminal” on page 88.

Configuring a supervisor terminal to receive data export files

Perform the steps in Procedure 3 to set up the supervisor terminal to receive data export files.

Procedure 3: Setting up a PC to receive data export files

- 1 Define the supervisor terminal in the CC MIS system.
- 2 On the supervisor PC, select the **Session > Setup > Client Services** option from the Supervisor interface CC MIS main menu.
- 3 Select the **Services** tab:
 - a. Select the **CC MIS can save text reports as files on this computer** option.
 - b. In the field at the bottom of the window, provide a name for the client computer (the client computer is known by this name).
- 4 Select the **Filing** tab to specify where the reports are to be saved on the computer.

Note: For field descriptions on the Client Services screen, see the online Help. The options under the **Filing** tab are used to specify how files are saved on the computer.

- 5 After the report services are defined, access the **Report Parameters** window.
 - a. In the **Contents Style** field, select **Data Export Report**.
 - b. In the **Output To** field, select the item identified as <computer name> (File), where <computer name> is the name of the computer defined in Step 3. Then specify the desired file name.
- 6 Select the desired settings for other the fields in the Report Parameter screen.
- 7 After all values are specified, select the **Report > Generate** option to create the report file.

The file is placed in the directory specified in the Client Services screen.

Upgrading the CC MIS server operating system

CC MIS 6.0.1 introduces support for Red Hat Enterprise Linux Version 4. This section describes how to upgrade your CC MIS server from Red Hat Enterprise Linux Version 3 to Version 4.

Before you begin

ATTENTION

This upgrade procedure removes all operating system-related files. Make note of all customizations that were made to your system prior to performing the upgrade.

1. Upgrade the CC MIS application to a version that supports Red Hat Enterprise Linux Version 4 (for example, upgrade from CC MIS Release 6.0 to Release 6.0.1). This upgrade contains required software to support the new operating system.
2. Capture all relevant network settings, including the following:
 - hostname
 - IP addresses (for each network interface card [NIC])
 - Network mask
 - default gateway
 - DNS servers
3. Run the `df -h` command to list all of the currently configured file systems. Note which devices map to each of the mounted file systems. The following is an example of a typical system file system mapping:
 - Operating system file systems

<code>/dev/sda2</code>	<code>/home</code>
<code>/dev/sda3</code>	<code>/boot</code>
<code>/dev/sda5</code>	<code>/usr</code>

- `/dev/sda6` `/var`
- `/dev/sda8` `/tmp`
- `/dev/sda9` `/`
- **CC MIS application file systems**
- `/dev/sda10` `/mis/system`
- `/dev/sda11` `/mis/data/disk1`
- `/dev/sda12` `/mis/backup`

4. Make a copy of important system configuration files that were changed manually. For example, you can create a new subdirectory in the `/mis/system` file system, and then copy the files to the new subdirectory. The upgrade procedure leaves the `/mis/system` file system untouched.

The following is a sample listing of configuration files that you may have made customizations to. There may be others, depending on your installation.

```

/ect/fstab
/ect/hosts
/ect/securetty
/ect/inittab
/ect/exports
/ect/init.d/<any files that you added or changed>

```

Because the format of these files may have changed, Nortel recommends that you do not simply copy these files over the newly installed files after the upgrade is complete.

5. Perform a full backup of your CC MIS data. Although this upgrade procedure leaves everything intact, things can go wrong. For details about backing up the CC MIS data, see “Backing up customer data” on page 181.

Upgrading the operating system

This procedure does not outline all of the screens and steps involved in the installation of Red Hat Enterprise Linux Version 4. Follow the instructions provided by Red Hat to install your system, using these instructions for guidance at various points along the way.

- 1 Insert Disk 1 of the Red Hat Enterprise Linux Version 4 media set into the optical drive.
- 2 From the **CC MIS Run State** menu, use the **Power Down** command to power down the system.
- 3 Boot the system from the disk in the optical drive.

Result: You are prompted to perform a media check. Nortel recommends that you perform this check to ensure that the system can read all disks in the installation media set.

- 4 When a screen appears that asks whether you are performing a fresh install or an upgrade, choose the fresh install option.
- 5 When the **Disk Partitioning Setup** screen appears, choose **Manually partition with Disk Druid**.

Result: The Disk Druid displays the current partitioning of the drive.

- 6 Using the file system information you saved earlier (or the information found by the disk partitioning software), select one of the following options for each of the partitions that appears:

Operating system file systems—Select **Format Partition** and assign the previous file system name to that partition.

CC MIS application file systems—Select **Leave Unchanged** and assign the previous file system name to the partition to have it mounted again following the installation.

- 7 When you reach the **Package Selection** screen, choose **Custom** to select only the packages required by CC MIS or by your organization. Nortel recommends that you choose the following package sets for a CC MIS server installation:
 - X Window System
 - GNOME Desktop
 - Editors (vim only)
 - Windows File Server (if you require Samba for backup)
 - Legacy Network Server (if you require Telnet to log on remotely). Use the Details page to select only the legacy components that you require.

- Administration Tools
 - Printing Support
- 8 Follow the on-screen instructions to finish the installation and setup of the new operating system on the server.

After the installation is complete and the server reboots, Nortel recommends that you connect to the Red Hat network to install any updates that were made available after the Red Hat installation media was created.

Post installation

After you finish installing Red Hat Enterprise Linux Version 4, perform the following steps to reinstall CC MIS on the system.

- 1 Log on as **root**.
- 2 Change the current directory to the CC MIS install directory (/mis/system/install).
- 3 Run the CC MIS preinstallation script (./preinstall) to ensure that the operating system is configured correctly for use with CC MIS.
- 4 If the preinstallation script reports any errors, correct these errors before you proceed.

Note: Ensure that the preinstallation script correctly identifies the IP address of the system. If you correct all errors prior to installing CC MIS, the chance of encountering problems with the installation is reduced.

- 5 After you correct any preinstallation problems, run the CC MIS installation script from the installation directory (./install) to install CC MIS in the new operating system environment.

The upgrade procedure is now complete and the CC MIS application should be running.

Chapter 6

Accessing maintenance functions

In this chapter

Introduction to the Maintenance and Administrative interface	104
Setting up a new CC MIS system (overview)	110
Logging on	112
Changing your password	115
Logging off	117
Maintenance and Administration menus and screens	118

Introduction to the Maintenance and Administrative interface

You can access the maintenance functions of the CC MIS application through the maintenance console. Access to the maintenance interface and its functions can be performed either at the physical console associated with the server or through dial-up or Telnet access to the server.

Configuration and maintenance of the CC MIS application is performed by logging on to the CC MIS server using the ccmis user ID. The maintenance interface is completely text-based for easy remote access.

This chapter contains the following information and procedures:

- CC MIS Maintenance and Administration menus
- logging on to and off of CC MIS Maintenance and Administration
- accessing the online Help
- changing the maintenance password

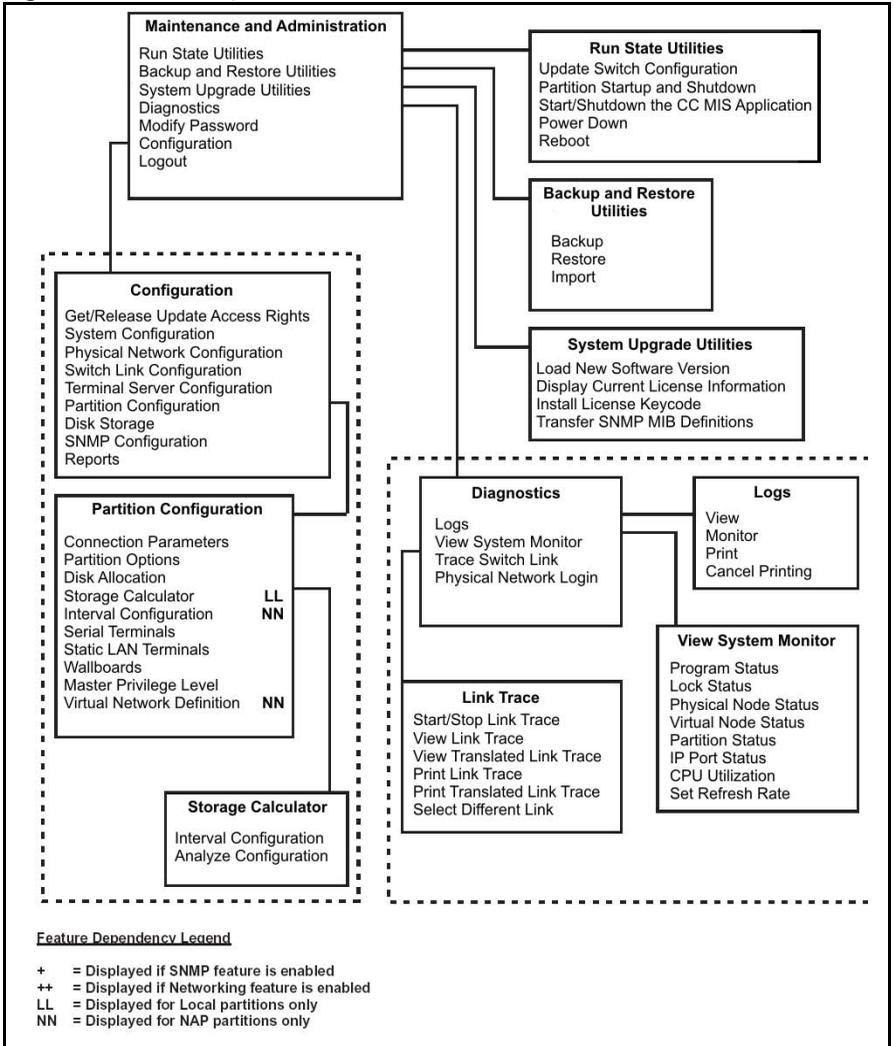
Maintenance and Administration menus

The functions of the Maintenance and Administration application are available through a series of menus and user interface screens.

Menu map

Figure 14 on page 105 shows the overall structure of the menus and screens found in the Maintenance and Administration interface. The actual menu commands displayed on your system are dependent on which features are enabled.

Figure 14: Hierarchy of the Maintenance and Administration menus



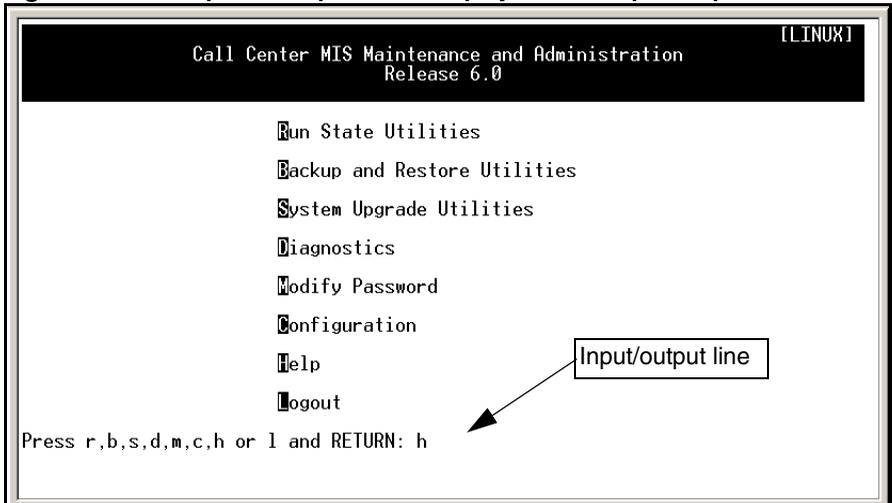
Interface screens

The Maintenance and Administration application uses two kinds of interface screens: simple menu display and full-screen mode.

- Simple menu display—On this type of screen, make menu selections by typing the letter or number associated with a menu option and then pressing <enter> on your keyboard to access the menu (see Figure 15). For example, to access the Configuration menu, type the letter c, and then press <enter>. To access the Help, type the letter h.

Note: The input/output line, located at the bottom of the screen, displays any text that is typed and also displays error messages (see Figure 15). Typing mistakes can be corrected by using the <backspace> key and any other keys just as you would while typing. Your input is not accepted by the system until you press the <enter> key.

Figure 15: Example of simple menu display and the input/output line



- Full-screen mode—On this type of screen, make menu selections using the function keys, arrow keys, and page up/down keys (see Figure 16). For example, to access the Help screen (in Figure 16), press the F4 function key.

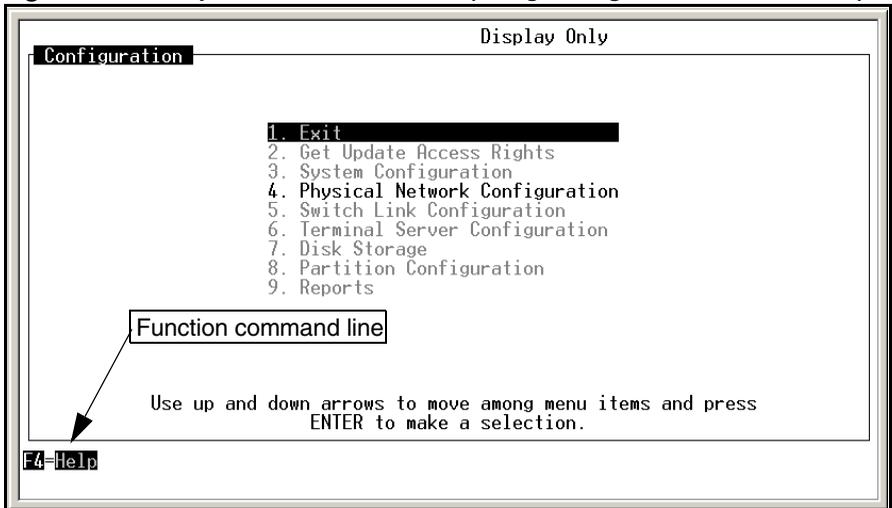
There are two ways to select a menu item in a full-screen mode interface:

- highlight the option using the up/down arrow keys
- type the number of the option and press the <enter> key

There are several control commands that can be used when in a full screen mode. These commands include the following:

- Ctrl-R—redraws a screen
- Ctrl-T—allows you to select a new terminal type

Figure 16: Example of full-screen mode (using Configuration menu screen)



Accessing pop-up menus

Various screens have pop-up menus associated with them and these pop-up menus list the available options. Access a pop-up menu by pressing its associated function key listed at the bottom of the menu screen.

Function keys, sometimes called soft keys, operate as toggles. The key that selects the function is the same key that deselects or clears that function.

Paging through a screen or menu

In some instances, a menu can have many options from which to select. Use the following commands to move to the top or bottom of the menu or screen:

- 0-PgUp (or Up arrow)—to page to the top of the menu or screen
- 0-PgDn (or Down arrow)—to page to the bottom of the menu or screen
- For some terminal types, Ctrl-F and Ctrl-B are used to page forward and back, respectively.

Function keys and commands

The Function keys associated with a command are listed on the lower portion of the appropriate screen. The procedures in this NTP provide the name of the function key and the screens show examples of function keys with associated commands.

Notes:

1. The actual function key is dependent on the type of terminal and emulation mode being used. See your program screen for the actual function key to press to select the desired command.
2. In some cases, there are too many functions keys to fit on the function key line. When this occurs, a special function key labeled “>>” appears on the right side of the function key line. Press this function key to view the additional function keys.

Effect of the CC MIS operating state on the menu system

The availability of certain functions is dependent on the state of CC MIS. The majority of the functions are available at all times; however, some functions can be performed only when CC MIS is shut down, while other functions can be performed only when CC MIS is operating.

Partitions can be running or stopped. Stopping one partition does not affect the running status of other partitions.

The CC MIS application can be running or shut down. For the most part, shutdown of CC MIS is automatic. When you request such a function, the software requires that you confirm the CC MIS shutdown. The confirmation gives you control over the state of CC MIS. Table 14 identifies the functions that require CC MIS to be shut down and whether the shutdown is automatic.

Table 14: Functions requiring CC MIS to be shut down

Function	Manual shutdown	Automatic shutdown
Load new software version	—	X
Install license keycode Note: CC MIS must be manually restarted any time following the installation of a new license keycode.	X	—
Change CC MIS Network Name in the Configuration > System Configuration screen	X	—

The Maintenance and Administration system takes into account the state of CC MIS, and alters its menus accordingly. For example, the menu options on the Run State Utilities screen change with the state of the CC MIS application. An example of this changing menu option is as follows:

- Startup the CC MIS Application (when CC MIS is shut down)
- Shutdown the CC MIS Application (when CC MIS is running)

Setting up a new CC MIS system (overview)

To set up a new system, proceed through the menus to access the Configuration menu. After the system is installed and a successful logon is achieved, select the Configuration option from the Maintenance and Administration Main menu. This causes the Configuration menu to be displayed. After the Configuration menu is displayed, proceed as follows:

Non-network

1. Configure the system.
(See “Configuring the CC MIS application” on page 129.)
2. Configure the switch links.
(See “Configuring the CC MIS application” on page 129.)
3. Configure disk storage.
(See “Disk Storage” on page 150.)
4. Configure partitions (local).
(See “Local Partitions” on page 197.)

Network

1. Configure the system.
(See “Configuring the CC MIS application” on page 129 and “Networked CC MIS” on page 251.)
2. Configure the switch links.
(See “Networked CC MIS” on page 251.)
3. Configure disk storage.
(See “Disk Storage” on page 150.)

4. Configure physical network.
(See “Networked CC MIS” on page 251.)
5. Configure partitions.
(See “Local Partitions” on page 197 and NAPs in “Networked CC MIS” on page 251.)

Logging on

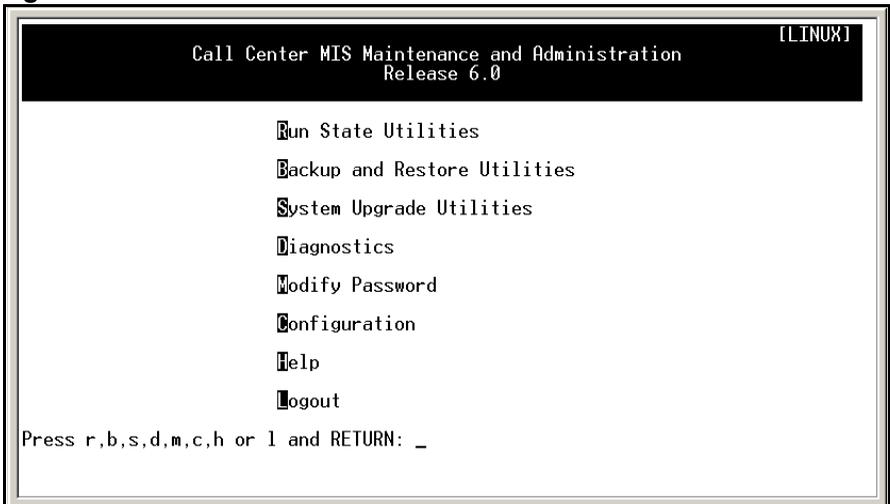
Log on to CC MIS Maintenance and Administration to perform the following tasks:

- configuring the application
- monitoring the operation of the application
- installing software upgrades

The user ID is ccmis and the password is defined when the CC MIS application was installed.

After a successful logon, the system displays the Call Center MIS Maintenance and Administration main menu (see Figure 17).

Figure 17: Call Center MIS Maintenance and Administration main menu



Constraints

You are logging on to Linux when logging on to the Maintenance and Administration interface.

Note: This is not the same as a supervisor logging on to CC MIS from a supervisor terminal.

ATTENTION!

Unauthorized Use of Console

Ensure that you log off of your session when not using the Maintenance and Administration interface.

Anyone can change your password through the Modify Password function of the Main Menu. This terminal provides direct access to CC MIS configuration. Improper use of this tool can cause system outage. Be cautious about leaving your maintenance console logged on.

Guidelines

Perform the steps in Procedure 4 to log on to the CC MIS Maintenance and Administration interface.

Procedure 4: Logging on to the Maintenance and Administration interface

- 1 Verify that the system and maintenance console are on.

The system displays the following prompt:

```
Console Login:
```

- 2 Type **ccmis** at the prompt.

The system displays the following prompt:

```
Password:
```

- 3 Type the password.

Note: For security purposes, no characters appear as the password is typed.

If the logon is successful, the system displays the Maintenance and Administration main menu (see Figure 17 on page 112).

If the logon is unsuccessful, the system displays the following message:

```
Login incorrect  
login:
```

Repeat Step 1 to Step 3 or contact your system administrator for the password.

Changing your password

Your password protects access to maintenance functions. You can change the password to maintain secured access to system functions, and ultimately, to the system configuration.

ATTENTION!

Both the user ID (ccmis) and the password are case-sensitive.

For example, the password SUPR1 is not the same as supr1.

Guidelines

Perform the steps in Procedure 5 to change your password.

Procedure 5: Changing the ccmis password

- 1 Access the Maintenance and Administration main menu.
- 2 Type **m** to access the Modify Password screen, which is used for changing the password.

The system displays the following prompt:

Do you want to change the CC MIS maintenance password?
(yes/no)

- 3 Enter **y** (for yes) to change the password or enter **n** (for no) to keep the existing password.

If **n** is entered, the Maintenance and Administration main menu is redisplayed.

If **y** is entered, the system displays the following prompt:

Enter a new password.

New password:

- 4 Enter a new password.

Note: A minimum of one character must be entered.

The system displays the following prompt:

Re-enter new password:

- 5 Re-enter the password to confirm your change.

The system returns to the Maintenance and Administration main menu.

Note: If you fail to confirm the new password (after three attempts), the system cancels the password change and you are directed back to the Maintenance and Administration main menu.



UNAUTHORIZED USE OF CONSOLE — DO NOT LEAVE YOUR CONSOLE LOGGED ON AND UNATTENDED.

The password can be changed by anyone with access to the console using the Modify Password function on the Maintenance and Administration Main Menu. The console provides direct access to the CC MIS configuration. Improper use of this tool can cause a system outage.

If you log off of the maintenance console (without knowing that your password has been changed), you cannot log back on to Maintenance and Administration without obtaining the new password from the individual who changed the password.

Logging off

Log off of the Maintenance and Administration interface after you have completed your work. Never leave the console unattended and logged on. Logging off protects the system configuration.

Guidelines

Perform the steps in Procedure 6 to log off of the CC MIS Maintenance and Administration interface.

Procedure 6: Logging off of the ccmis account and CC MIS Maintenance and Administration interface

- 1 Access the Maintenance and Administration main menu.
- 2 Press **I** to log off of the Maintenance and Administration main menu.

The system returns to the following prompt:

```
Console Login:
```

Maintenance and Administration menus and screens

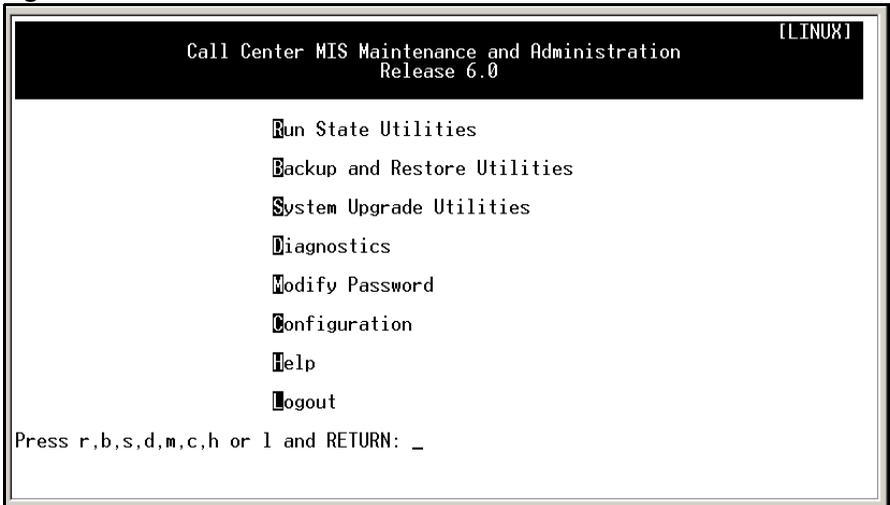
The following section outlines the menus and screens available in the CC MIS Maintenance and Administration interface.

Call Center MIS Maintenance and Administration main menu

The main menu for the Call Center MIS Maintenance and Administration interface (see Figure 18) appears upon successful logon to CC MIS.

To access a menu option on the main menu, type the letter (r, b, s, d, m, c, h, or l) associated with the option, and then press <enter>.

Figure 18: Maintenance and Administration main menu

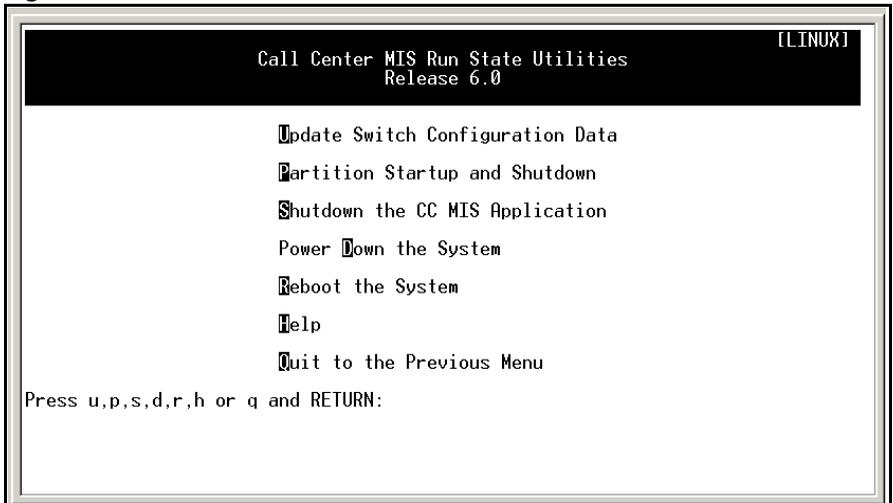


Run State Utilities menu

Type the letter r on the main menu to access the Run State Utilities menu (see Figure 19).

The Run State Utilities menu provides access to commands used for startup and shutdown of the CC MIS application and individual partitions. You can reboot or power down the CC MIS server. The menu also contains the Update Switch Configuration Data command.

Figure 19: Run State Utilities menu



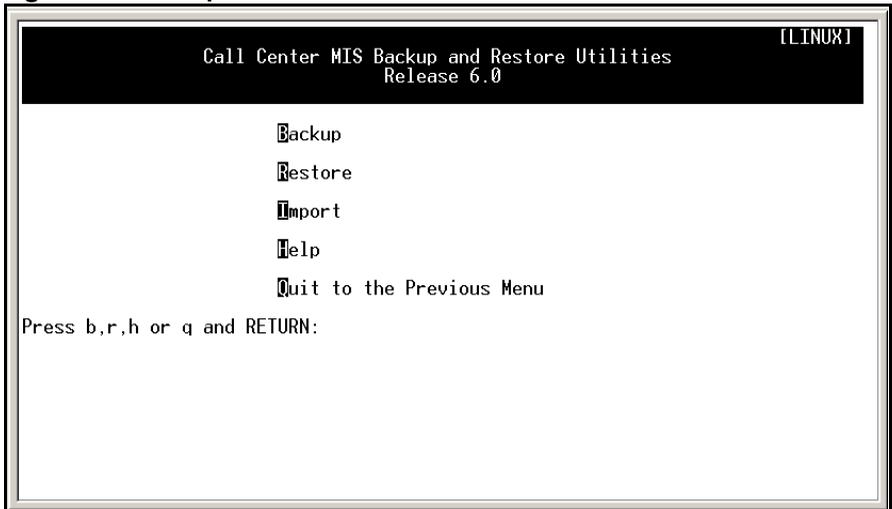
Backup and Restore Utilities menu

Type the letter **b** on the main menu to access the Backup and Restore Utilities menu (see Figure 20).

The backup and restore menu provides access to commands used to do the following:

- Backup—Used to back up customer data.
- Restore—Used for the restoration of data in the event of data corruption.
- Import—Allows selected CC MIS databases to be imported from other CC MIS systems over a TCP/IP connection. CC MIS Release 6.0 systems can import data from CC MIS systems running 5.2 or later.

Figure 20: Backup and Restore Utilities menu

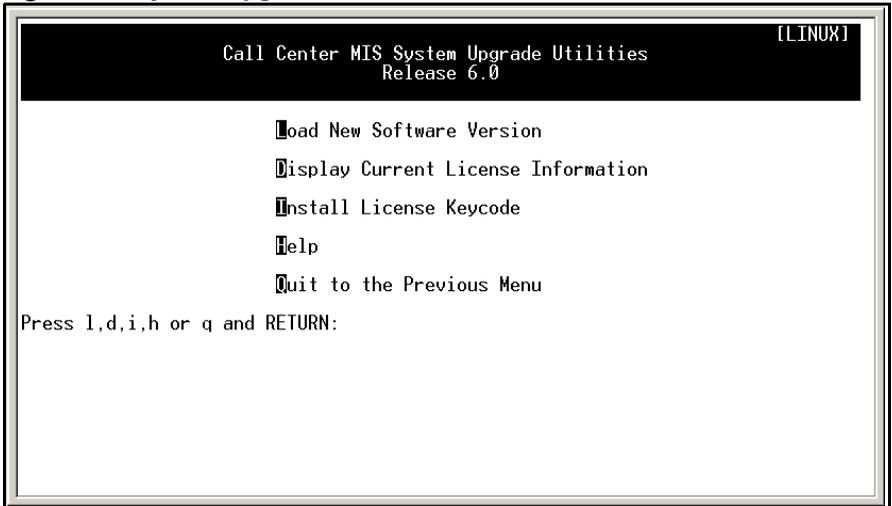


System Upgrade Utilities menu

Type the letter `s` on the main menu to access the System Upgrade Utilities menu (see Figure 21).

The System Upgrade Utilities menu provides access to commands used for loading new software versions, displaying license information, and installing license keycodes.

Figure 21: System Upgrade Utilities menu

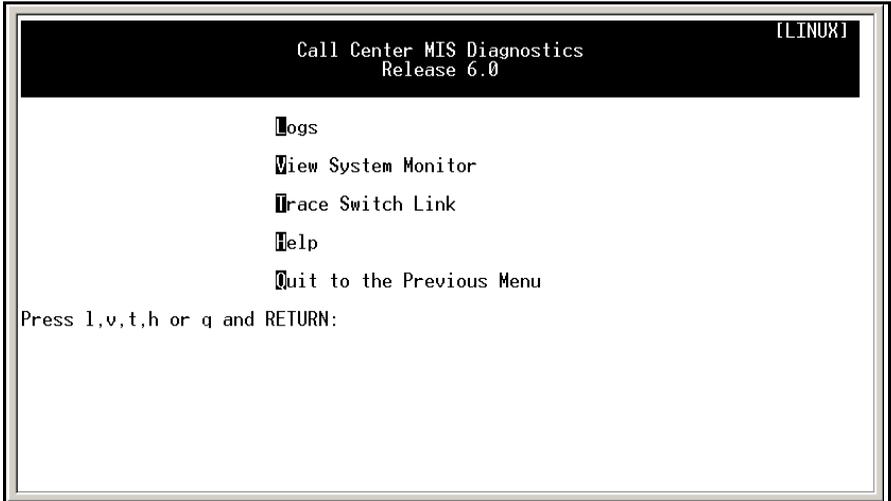


Diagnostics menu

Type the letter d on the main menu to access the Diagnostics menu (see Figure 22).

The Diagnostics menu provides access to diagnostic programs for CC MIS such as logs, the system monitor, and tracing switch links.

Figure 22: Diagnostics menu

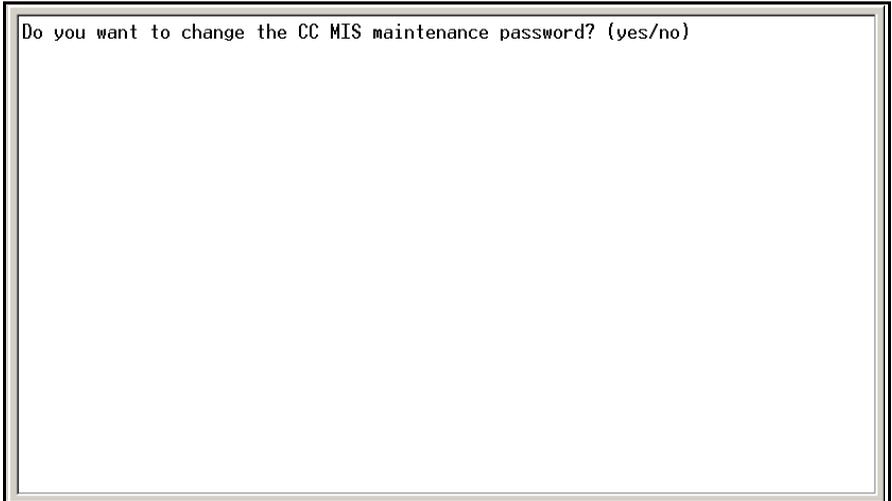


Modify Password screen

Type the letter m on the main menu to access the Modify Password screen (see Figure 23).

You can change the password for the ccmis user ID on this screen. For details about changing the user ID, see Procedure 5 on page 115.

Figure 23: Modify Password screen



Do you want to change the CC MIS maintenance password? (yes/no)

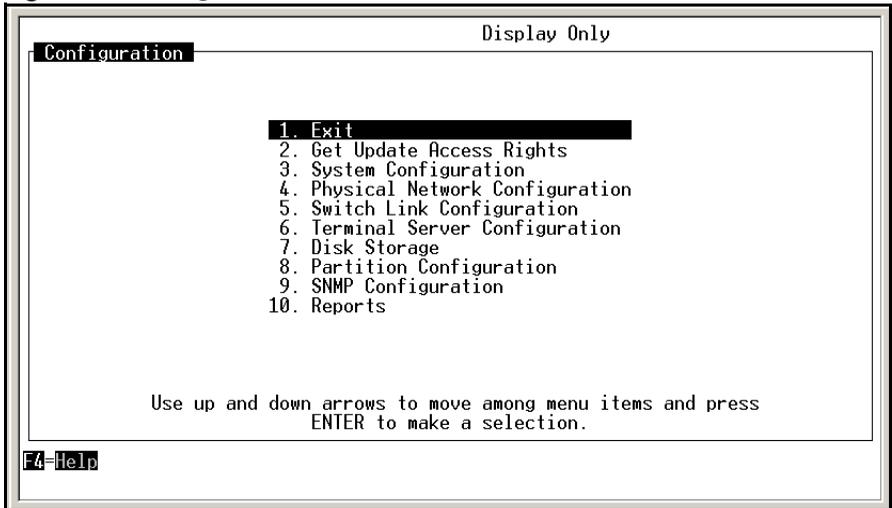
Configuration menu

Type the letter **c** on the main menu to access the Configuration menu (see Figure 24).

There are two modes for the Configuration utility: Display Only and Updates Allowed. The Configuration menu starts in Display Only mode. If you need to make a change, use the Get Update Access Rights option to change to Allow Updates mode.

Use the Configuration menu to configure the CC MIS application, including setting up switch links, adding or deleting partitions, and changing disk storage parameters.

Figure 24: Configuration menu



Help

You can access the online Help (see Figure 25) from the main menu by typing the letter h. The online Help is also available from all of the Maintenance and Administration menus.

Figure 25: Sample online Help screen

```
[ This screen displays information about the current menu. Help is
presented using the UNIX "more" command. To get out of help press
"q". To see the next page press the space bar. To back up one page,
press Control-B. Press "h" for help with more. ]

This is the main menu of the CC MIS Maintenance and Administration
utility. This screen lists the commands that may be run from this
menu. To run a command, press the highlighted letter (or letters) of
the desired command followed by RETURN.

The commands available from this menu are:

Run State -

    This command displays another menu of commands that provides
    the capability to update switch configuration data, start up
    and shut down customer partitions, start up or shut down the
    CC MIS system and prepare the PRODDNAME system for power
    down. More help information is available from the Run State
    menu.

    To go to the Run State menu, exit from this help screen then
    press "r" and RETURN. Exit the Run State menu by pressing "q"
--More-- (24%) [Press space to continue, "q" to quit.]
```

The system displays and describes the help information that is available for the current menu or screen. That is, the information available from the Help menu changes depending on the menu or screen from which it was accessed. When the Help system is displayed on your console, the Maintenance and Administration menus and functions are not available.

The procedure for accessing the online Help depends on the type of screen from which you are navigating:

- To access the online Help from a simple display menu screen, see Procedure 7 on page 126.
- To access the online Help from full-screen mode, see Procedure 8 on page 127.

Accessing Help from simple display menus

Perform the steps Procedure 7 to access the Help facility from simple display menus.

Procedure 7: Accessing online Help in maintenance menus (from simple menu display screens)

- 1 Press **h** (Help) to access the online Help.

Note: The letter **h** appears on the input/output line (see Figure 15 on page 106); however, your input is not accepted by the system until you press the **<enter>** key on your keyboard. You can correct typing mistakes on the input/output line by pressing the **<backspace>** key and any other keys just as you would while typing.

The system displays help information for the menu options on the current page (see Figure 25 on page 125).

Note: To access the online Help from the Maintenance interface when it is in full-screen mode, see Procedure 8 on page 127. When the interface is in full-screen mode, the online Help is accessed using the Help function key.

- 2 Press the **space bar** or **<enter>** key to scroll through the online Help text.
- 3 To go back to the previous page, enter **-1** and press **<enter>**.

Note: The Help screens for menu windows are presented on screen using the UNIX `more` command. (The `more` command is transparent to the user). Type **h** to view a list of possible `more` commands. Press **<enter>** to exit this list and return to the help text.

- 4 Press **q** (Quit) to exit the online Help.

Accessing Help from full-screen mode

Perform the steps in Procedure 8 to access the online Help from full-screen mode.

When the interface is in full-screen mode, the online Help is access using the Help function command. The Help command is located in the lower portion of the screen. The Help function key can appear as <Help>=Help, f9=Help, or another designated function key xx=Help.

For example, the Configuration screen is considered a full-screen display (see Figure 16 on page 107).

Procedure 8: Accessing the online Help from full-screen mode

- 1 Press the <Help> key (or appropriate function key) to access the Help screen.
- 2 Depending on your terminal type, you can use one of the following to scroll through the help text.

Prev Scrn - Returns to the previous screen.

Next Scrn - Moves to the next screen.

- or -

Page Up - Returns to the previous screen.

Page Down - Moves to the next screen

- or -

Up arrow - Scrolls up one line.

Down arrow - Scrolls down one line.

Note: The available key names depend on terminal type.

- 3 Press the Help function key again to exit the online Help.

Logoff

To log off of the CC MIS Maintenance and Administration application, press the letter l on the main menu.

Chapter 7

Configuring the CC MIS application

In this chapter

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Switch Link Configuration	138
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Introduction

Through the Configuration main menu (see Figure 26 on page 132), you can access submenus where you can define or alter parameters related to CC MIS system configuration.

The usual sequence of steps for configuring a CC MIS system are as follows:

1. System Configuration—Specify the system name, CC MIS network name, and the backup directory.
2. Switch Link Configuration—Select link type and specify link information.
3. Terminal Server Configuration—Specify local area network (LAN)-based terminal servers available for CC MIS.
4. Disk Storage—If needed, specify additional storage directories.
5. Partition Configuration—Add a partition, then specify the following:
 - Connection Parameters
 - Partition Options
 - Disk Allocation
 - Storage Calculator
 - Serial Terminals
 - Static LAN Terminals
 - Wallboards
 - Master Privilege Definition

Accessing the Configuration main menu

You access all configuration functions from the Configuration main menu.

Perform the steps in Procedure 9 to access the Configuration main menu.

Procedure 9: Accessing the Configuration main menu and switching between Display Only and Updates Allowed modes

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the **Configuration** main menu.

The system displays the Configuration main menu (see Figure 26 on page 132).

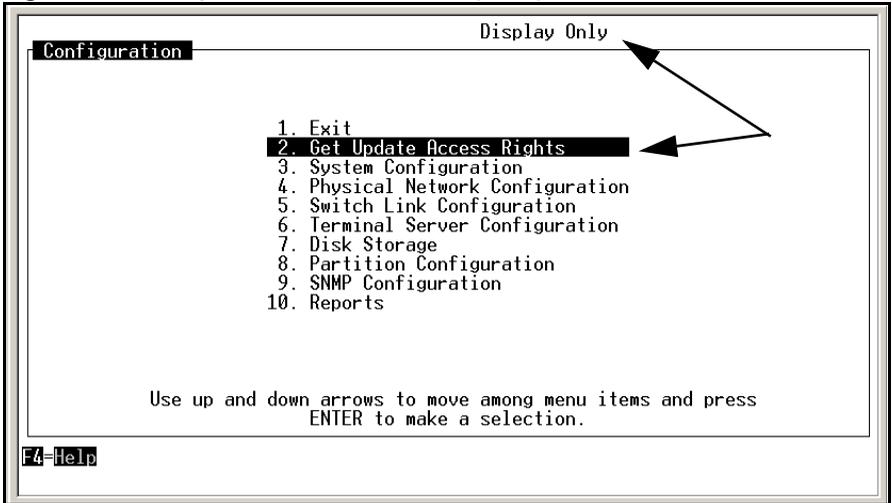
Note: The Physical Network Configuration option is displayed only on a networked node.

- 3 By default, the Configuration menu appears in **Display Only** mode (see Figure 26 on page 132).

To make changes in the Configuration main menu, you must be in **Updates Allowed** mode. Use the **Get Update Access Rights** option to switch from Display Only mode to Updates Allowed mode.

Note: There is a two minute inactivity timer when in Updates Allowed mode. If the timer expires, you are removed from the Configuration screen and returned to the Maintenance and Administration main menu.

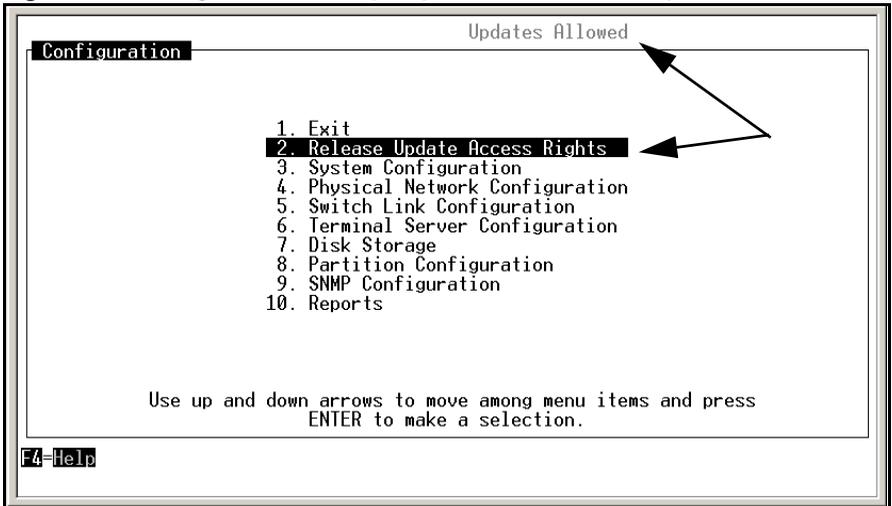
Figure 26: Configuration menu (in Display Only mode)



- 4 Select the **Get Update Access Rights** option (this switches the mode from Display Only to Updates Allowed).

The Configuration screen and menu changes (see Figure 27). The screen is now in **Updates Allowed** mode and option 2 changed to **Release Update Access Rights**.

Figure 27: Configuration menu (in Updates Allowed mode)



System Configuration

The System Configuration screen contains system-wide data. This is the first screen accessed when setting up a new system. Information contained in this screen includes the system name, CC MIS network name (if networking is enabled), and the backup directory.

Note: The system must be shut down to change the CC MIS network name.

Perform the steps in Procedure 10 to access the System Configuration screen.

Procedure 10: Accessing the System Configuration screen

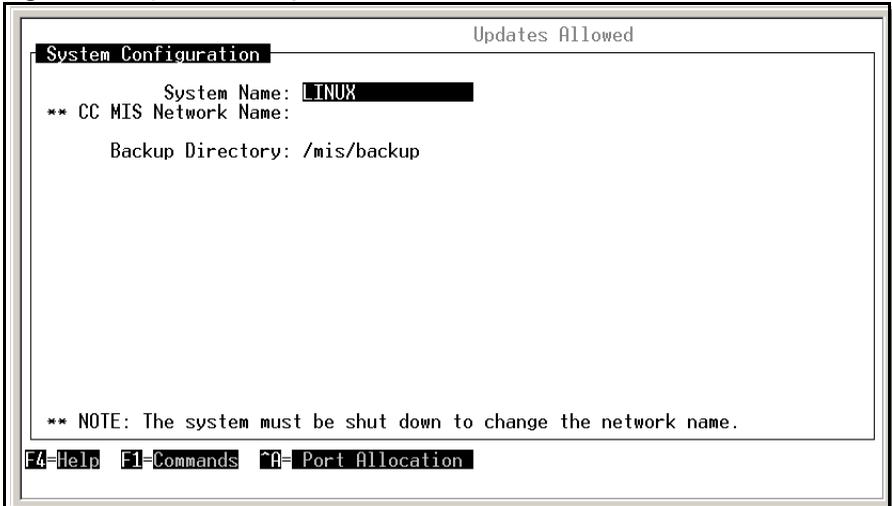
- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu in Display Only mode.

- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **System Configuration**.

The System Configuration screen appears (see Figure 28 on page 134).

Figure 28: System Configuration screen



Field descriptions

The System Configuration screen fields are described in Table 15.

Table 15: System Configuration field descriptions (Part 1 of 2)

Field	Description
System Name	<p>The System Name field specifies the name of the CC MIS system that appears at the top of each Configuration Report.</p> <p>This name can be up to 16 characters in length. Only uppercase and lowercase letters (a-z, A-Z) and numbers (0-9) can be used.</p>

Table 15: System Configuration field descriptions (Part 2 of 2)

Field	Description
CC MIS Network Name	<p>The CC MIS Network Name field appears only if you purchased the Networking option.</p> <p>The Network Name is used for messaging among nodes in the CC MIS Physical Network.</p> <p>All nodes in a network must have the same CC MIS Network Name. The field can only be edited when the system is down. Only uppercase and lowercase letters (a-z, A-Z) and numbers (0-9) can be used.</p>
Backup Directory	<p>The Backup Directory field specifies the directory into which CC MIS backs up its databases. The directory provided must be an existing directory having write permission for the CC MIS application. The length of the directory name is restricted to a maximum of 50 characters.</p> <p>If the Backup Directory field is left empty, nightly/automatic backups do not occur and it is not possible to perform ad hoc/manual backups.</p>

Port Allocation

The Port Allocation screen provides a system-wide view of serial ports allocated on the system (serial ports are provided through terminal servers) and identifies the partition to which they are allocated.

To change the port allocations, you must access the Port Configuration screen, which is accessed using the Port Allocation function key at the bottom of the System Configuration screen (Configuration > System Configuration > Port Allocation).

- Serial ports are allocated on the Serial Terminal screen. Access this screen using the Partition Configuration > Configuration Options > Serial Terminals option. For more information, see “Serial Terminals” on page 231.
- Wallboard ports are allocated on the Wallboards screen. Access this screen using the Partition Configuration > Configuration Options > Wallboards option. For more information, see “Wallboards” on page 233.

Perform the steps in Procedure 11 to view the Port Allocation screen.

Procedure 11: Accessing the Port Allocation screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu in Display Only mode.

- 3 Select **System Configuration** to access the System Configuration screen.

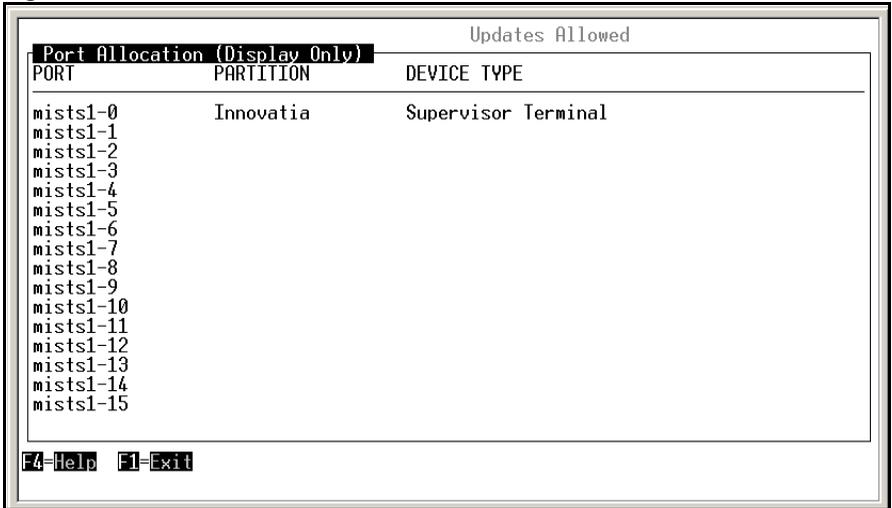
The System Configuration screen appears (see Figure 28 on page 134).

- 4 Press the **Port Allocation** function key at the bottom of the System Configuration screen.

The Port Allocation screen appears (see Figure 29 on page 137).

Note: The Port Allocation screen is a Display Only screen (even when in Updates Allowed mode).

Figure 29: Port Allocation screen



- 5 When you finish viewing the Port Allocation screen, press the **Exit** function key to return to the main menu.

Switch Link Configuration

The CC MIS server connects to the DMS-ACD in one of two ways:

- direct IP connection
- TCP/IP bridge device (bridge between an IP connection from the CC MIS server to an X.25 connection to the switch)

For more information about TCP/IP bridge devices, see Appendix B, “TCP/X.25 bridge devices.”

After you establish a connection between the server and the switch, you can configure the switch links on the CC MIS server.

You can create multiple link definitions using the Switch Link Configuration screen. There are two types of links:

- Live TCP/IP links (see page 141)
- Simulated links (see page 145)

This function provides a means of defining logical links that can be used by a partition. The number of link definitions that can be defined on a system depends on the license keycode.

Perform the steps in Procedure 12 to access the Switch Link Configuration screen.

Procedure 12: Accessing the Switch Link Configuration screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

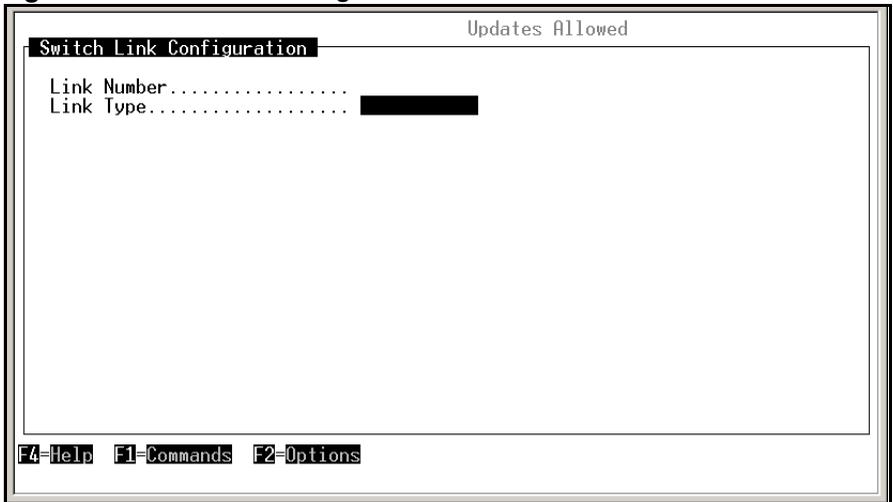
The system displays the Configuration main menu (see Figure 26 on page 132).

- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Switch Link Configuration**.

The Switch Link Configuration screen appears (see Figure 30 on page 139).

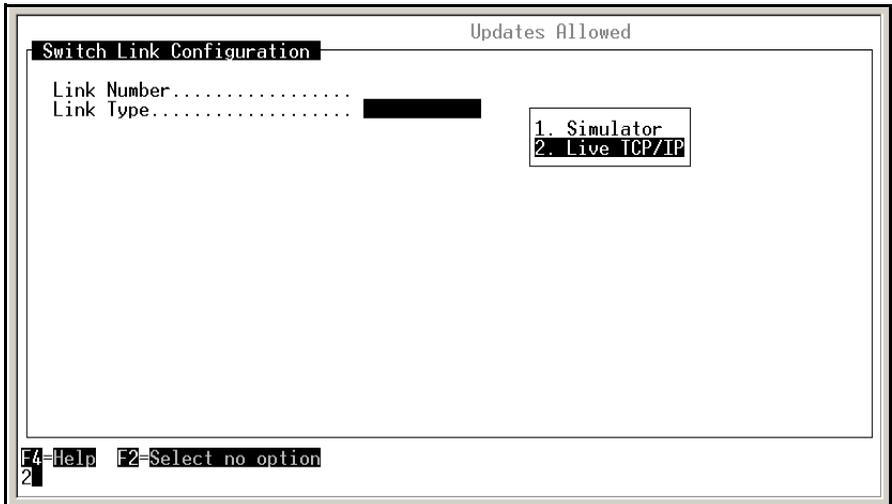
- **Link Number**—Displays the link number assigned to the link which you are defining. This number is assigned when the link is saved.
- **Link Type**—Indicates whether the link is a Live TCP/IP link or a Simulator link. A live link is used in either precut or product mode to connect to an ACD switch. A simulator link is used in either training or precut mode to run the internal switch simulator to simulate call traffic for training purposes.

Figure 30: Switch Link Configuration screen—initial



- 5 Press the **Options** function key.

The Options function key displays a pop-up menu offering the choice between Simulator and Live TCP/IP links (see Figure 31).

Figure 31: Switch Link Configuration — Simulator or Live TCP/IP pop-up menu**6** Select the link type:

If **1. Simulator** is selected as the link type, see “Simulator link” on page 145 for more information.

If **2. Live TCP/IP** is selected as the link type, see “Live TCP/IP link” on page 141 for more information.

Commands menu

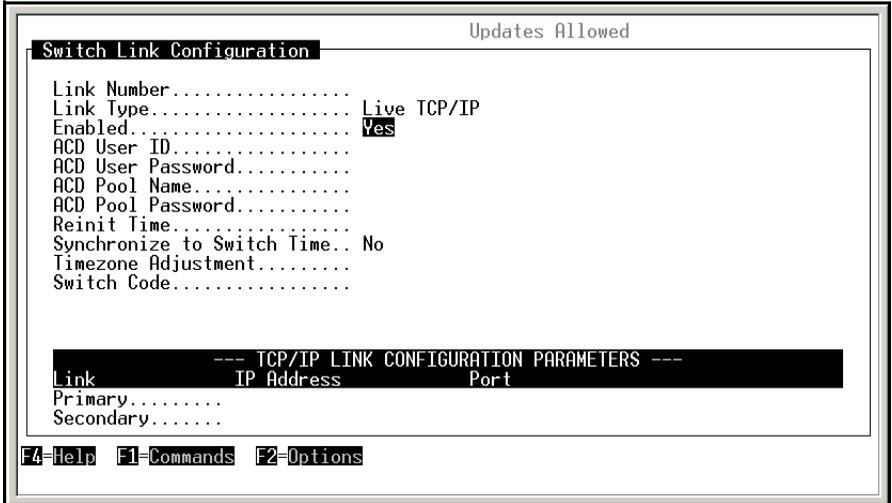
The Switch Link Configuration screen has the following commands available in the Commands menu:

- Exit
- Clear the form
- Read an existing link definition
- Save link definition
- Delete an existing link definition

Live TCP/IP link

If Live TCP/IP is selected as the link type from the Options command function key, the remainder of the fields are displayed on screen. The Switch Link Configuration screen for a Live TCP/IP link appears as shown in Figure 32. For more information about this screen, see “Live TCP/IP link fields” on page 142.

Figure 32: Switch Link Configuration screen - Live TCP/IP link



The Live TCP/IP link definitions are specified to obtain a live connection to the DMS/MSL-100.

ACD data link

For CC MIS to communicate with the DMS-ACD, the CC MIS must establish datalink connections with the DMS-ACD over which agent and call event messages can pass. An ACD datalink is associated with one and only one ACD pool.

To successfully connect to the switch, certain information must be obtained from the DMS-ACD and used to complete the fields in the switch link definition. This information is as follows:

- The user ID and password used to log on to the switch.
- The ACD pool name and password to associate with this link (from table ACDMISPL on the switch).
- The ACD subpool names and passwords for this ACD pool (from table ACDMISSP on the switch).

Note: The subpool information is not required in the switch link definition itself, but is required when defining the “Connection Parameters” for partitions using this switch link (see “Connection Parameters” on page 229).

Live TCP/IP link fields

Table 16 describes some of the fields on the Live TCP/IP Link screen.

Table 16: Fields on the Live TCP/IP Link screen (Part 1 of 3)

Field	Description
Link Number	This field displays the link number assigned to the link which that is being defined. The link number is assigned when the link is saved.
Link Type	This field indicates that the link is a Live TCP/IP link. A live link is used in either precut or product mode to connect to an ACD switch.
Enabled	Used to enable or disable the link. The default is Enabled.
ACD User ID and ACD User Password	The user ID and password used to log on to the switch.
ACD Pool Name and ACD Pool Password	The name and password of the ACD pool to associate with this switch link. This can be found in table ACDMISPL on the switch.

Table 16: Fields on the Live TCP/IP Link screen (Part 2 of 3)

Field	Description
Reinit Time	<p>Specifies a time (in 24-hour format) in which the system requests reinitialization from the switch. This reinitialization is used to automatically pick up any additions or deletions made to the switch datafill (such as new or deleted positions, groups, subgroups). The time chosen for this reinitialization must be during off hours and preferably after the CC MIS midnight processing is complete. A recommended time is 2:00 a.m.</p> <p>This field is left blank when no daily reinitialization is required.</p>
Synchronize to Switch Time and Timezone Adjustment	<p>Used to set the time for the system and to adjust time zone differences.</p> <p>Note: Partitions on a single node can have different time zones than the rest of the system. Use the Partition Options screen to set this feature.</p> <p>Note: Any time zone adjustments for the link must be relative to the base time zone set for the server (and not to any of the partitions).</p>
Switch Code	<p>Allows three additional digits to be prepended to all directory numbers (DNs) received from the switch.</p> <p>This field is normally left blank. However, the field must be specified if the CC MIS networking feature is used in a private network where duplicate DN's appear on more than one switch is used. Using a unique switch code for each switch in the private network, CC MIS can make the duplicated DN's unique, thereby allowing the CC MIS networking feature to operate properly.</p>

Table 16: Fields on the Live TCP/IP Link screen (Part 3 of 3)

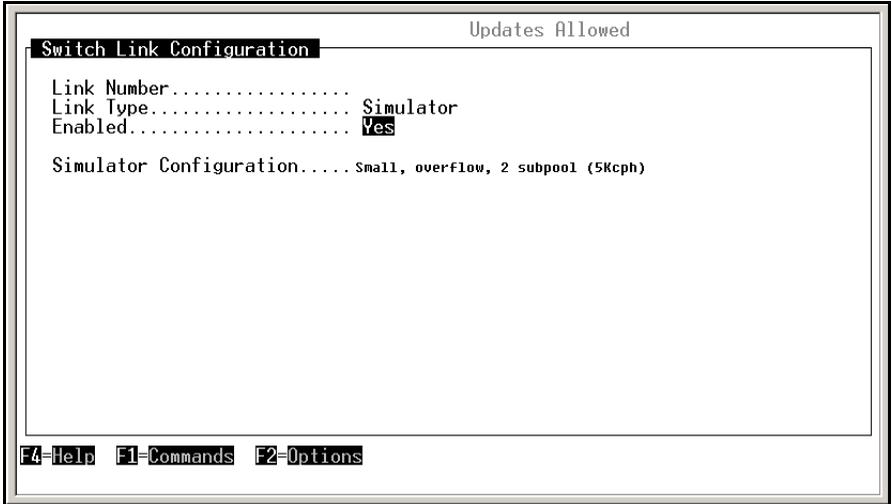
Field	Description
Primary Link	Specifies the IP address and port number to connect to for this link.
Secondary link	Specifies a second IP address and port number to use to attempt connection to the switch in the event that a connection cannot be established using the primary IP address and port number. Available only if the link redundancy option is enabled by the license keycode. The field can be left blank if link redundancy is not desired for this live link definition.

For additional information, see “Switch link datafill requirements” on page 333.

Simulator link

If you choose Simulator as the link type, the Enabled and Simulator Configuration fields appear on the screen. Figure 33 shows the Switch Link Configuration screen for a Simulator link.

Figure 33: Switch Link Configuration screen - Simulator link



Simulator link definitions are specified to set aside a link number to specify that a partition should be connected to the simulator.

Note: The configuration information is explained in the online Help. Press the Help function key to view the Help text for this screen.

Terminal Server Configuration

The Terminal Server Configuration screen (see Figure 34) allows you to specify LAN-based terminal servers that are available for CC MIS.

Figure 34: Terminal Server Configuration screen

SERVER ADDRESS	NAME	BASE TCP PORT	#PORTS
47.104.48.30	mistsl	8000	16

F4=Help F1=Commands F3=Edit field ^C=Add ^D=Delete ^E=Configure

Perform the steps in Procedure 13 to access the Terminal Server Configuration screen.

Procedure 13: Adding and configuring a Terminal Server

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu (see Figure 26 on page 132).

- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Terminal Server Configuration**.

The Terminal Server Configuration screen appears (see Figure 35 on page 147).

Figure 35: Terminal Server screen

Terminal Server Configuration					Updates Allowed
SERVER ADDRESS	NAME	BASE	TCP PORT	#PORTS	
47.104.48.30	mists1		8000	16	

F4=Help F1=Commands F3=Edit field ^C=Add ^D=Delete ^E=Configure

- 5 To add a new terminal server, press the **Add** function key.

A dialog box appears on screen in which the IP address for the terminal server can be entered (see Figure 36).

Figure 36: Adding a Terminal Server

Terminal Server Configuration					Updates Allowed
SERVER ADDRESS	NAME	BASE	TCP PORT	#PORTS	
47.104.48.30	mists1		8000	16	

Enter address for new terminal server:

F4=Help

- 6 Enter the **IP address** of the Terminal Server and press the <enter> key.

- 7 Change the **TCP Port** from 8000 (the default) to 8001.
- 8 To configure a terminal server, press the **Configure** function key.

The screen as shown in Figure 37 appears. Follow the instructions on the screen to enter and configure the terminal server.

Figure 37: Configuring a Terminal Server

```
Entering configuration mode on terminal server "mists1"
*** To exit from terminal server configuration:
***   if a password prompt is displayed, press Ctrl-J
***   if a password prompt is not displayed, enter "hangup"

Trying 47.104.48.30...
Connected to 47.104.48.30.
Escape character is '^I'.
Welcome to the RCS/4000 Remote Communication Server
Password:
```

When the configuration is complete, the Terminal Server Configuration reappears.

- 9 To edit the fields of a terminal server listed on the Terminal Server screen, first navigate to the field, and then press the **Edit Field** function key (see Figure 38 on page 149).

Figure 38: Editing a field on the Terminal Server Configuration screen

Terminal Server Configuration				Updates Allowed
SERVER ADDRESS	NAME	BASE TCP PORT	#PORTS	
47.104.48.30	mists1	8000	16	

F4=Help **F3=End editing** **^O=Insert** **^C=Add** **^D=Delete** **^E=Configure** **^N=>>**

Disk Storage

The Disk Storage screen is a system-wide configuration option that can be required before creating partitions. The installation script creates an initial entry in the Disk Storage screen for the storage of partition data; however, as the system grows it can be necessary to add additional file systems to provide space for new partitions.

On the Disk Storage screen, you can assign disks to partitions, view disk usage statistics, alter size limits of partitions, and move partitions between disks.

Perform the steps in Procedure 14 to access the Disk Storage screen.

Procedure 14: Accessing Disk Storage

1 Access the Maintenance and Administration main menu.

2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu (see Figure 26 on page 132).

3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.

4 Select **Disk Storage**.

The Disk Storage screen appears (see Figure 39 on page 151).

Figure 39: Disk Storage

Updates Allowed					
Disk Allocation					
Partition Name	Size Limit	Space In Use	% In Use	Disk No.	% Disk Alloc
Training 1	700M	70M	10	1	36
Dallas	800M	51M	6	1	41
Training 2	70M	56M	80	1	4
Fort Worth	100M	51M	51	1	5
Metroplex	50M	50M	100	1	3

Disk Usage Statistics					
Disk No.	Mount Directory	Disk Size	Avail Space	%Full	Num Partitions
1	/mis/data/fs1	1968M	248M	87	5

F4=Help F1=Exit F9=Storage Calculator F5=Disk Usage Section

5 Select the **Disk Usage Section** function key.

Focus is sent to the Disk Usage Statistics area in the lower portion of the screen (see Figure 40) and the function keys change.

Figure 40: Disk Usage Statistics

Updates Allowed					
Disk Allocation					
Partition Name	Size Limit	Space In Use	% In Use	Disk No.	% Disk Alloc
Training 1	700M	70M	10	1	36
Dallas	800M	51M	6	1	41
Training 2	70M	56M	80	1	4
Fort Worth	100M	51M	51	1	5
Metroplex	50M	50M	100	1	3

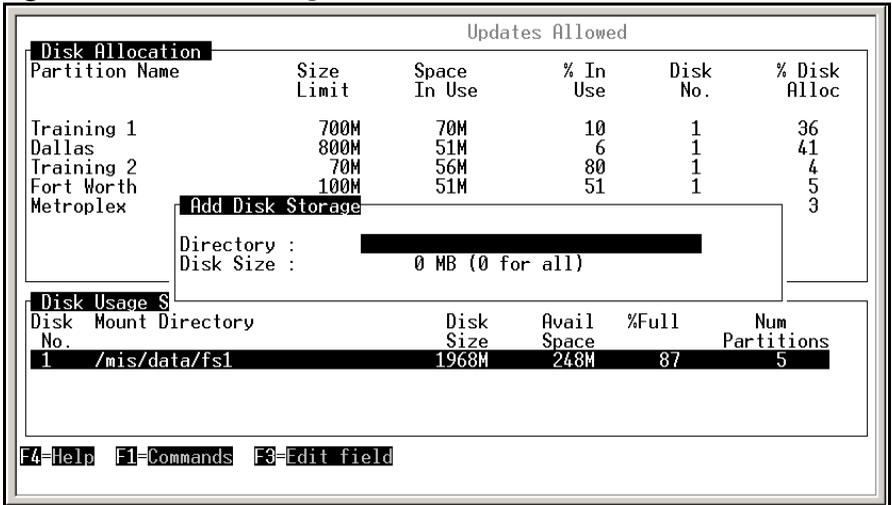
Disk Usage Statistics					
Disk No.	Mount Directory	Disk Size	Avail Space	%Full	Num Partitions
1	/mis/data/fs1	1968M	248M	87	5

F4=Help F1=Exit F9=Add F10=Change F5=Disk Allocation Section

6 To add another file system, select the **Add** function key.

The **Add Disk Storage** pop-up menu appears (see Figure 41).

Figure 41: Add Disk Storage



7 Enter the **Directory** where this physical device is mounted.

Note: Leave the Disk Size field as 0 MB, as this allocates all of the disk space for CC MIS storage. To limit the amount of disk space used by the CC MIS application, specify the space limitation (in megabytes).

8 Select the **Commands** function key.

9 Select the **Submit** function key to save the new directory.

SNMP configuration

The Simple Network Management Protocol (SNMP) feature allows an SNMP-based network management system (NMS) to monitor both the CC MIS system and the ACD call center operation.

Notes:

1. The SNMP feature is an optional feature that can be enabled by the license keycode. If the feature is not enabled, this screen is not available on the system.
2. CC MIS only supports Version 1 of the SNMP protocol.

The SNMP Configuration screen allows you to set up three communities and to specify addresses of SNMP managers. The configuration defined through this screen allows access to the system-wide SNMP information provided by CC MIS, including the standard MIB-2.

The SNMP feature is enabled for a partition through the Partition Configuration menu by accessing the Partition Options screen for a selected partition (see “Local Partitions” on page 197).

The SNMP feature has a reporting option that allows you to print a system report for SNMP configuration (see “SNMP Configuration report” on page 449 of the "System Configuration reports" appendix). This is accessed through the Reports command on the Configuration main menu.

ATTENTION!

Due to the technical nature of the SNMP feature, a background in network management and the SNMP protocol is recommended for administrators and users of this feature.

Procedure 15: Accessing the SNMP Configuration screen

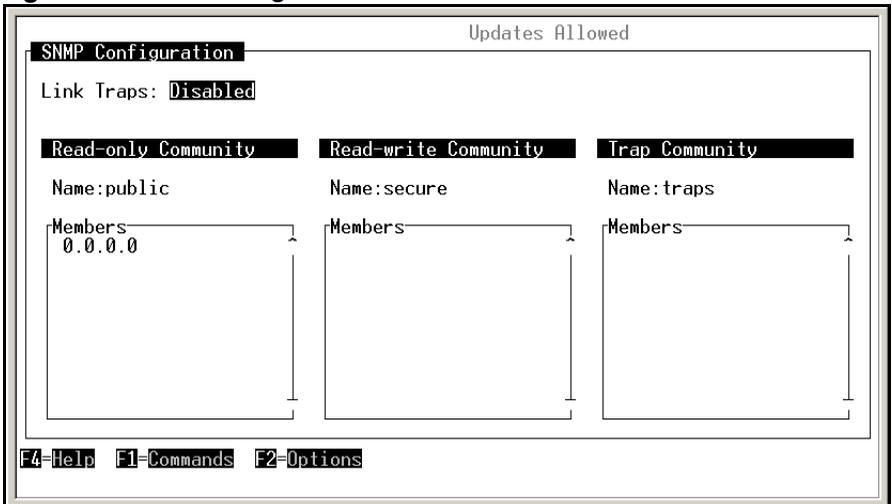
- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu (see Figure 26 on page 132).

- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **SNMP Configuration**.

The SNMP Configuration screen appears (see Figure 42 on page 154).

Figure 42: SNMP Configuration



The Transfer SNMP MIB Definitions command on the System Upgrade Utility menu transfers CC MIS system MIB and CC MIS Partition MIB definition files to selected Network Management Systems (NMS).

The SNMP Configuration screen displays information concerning the three CC MIS SNMP communities: Read-only, Read-write, and Trap. These communities consists of:

- community name
- access mode
- set of IP addresses (of SNMP managers)

The SNMP Configuration screen is used to define Network Management Systems (NMS) that may have access to the system-wide information defined by the Management Information Bases (MIBs). The two types of MIBs are:

- CC MIS System MIB
- MIB-2 (standard MIB)

Field descriptions

The SNMP Configuration screen fields are described in Table 17.

Table 17: SNMP field description (Part 1 of 2)

Field	Description
Community	<p>The communities are as follows:</p> <ul style="list-style-type: none"> ■ Read-only—Lists the IP addresses of SNMP managers who can query MIB variables. ■ Read-write—Lists the IP addresses of SNMP managers who can both query and set MIB variables. ■ Trap—Lists the IP addresses of SNMP managers who are to receive traps generated by the system MIBs.

Table 17: SNMP field description (Part 2 of 2)

Field	Description
Name	This name can be 1 to 15 characters in length. Any character except the vertical bar can be used. The Read-only and Read-write communities can have the same name; however, it is not recommended. When they both have the same name, the Read-write community member list is searched first.
Members	<p>This area lists the IP addresses of SNMP managers that have access to the community. An entry of 0.0.0.0 is used to indicate that all SNMP managers are considered part of that community.</p> <p>Note: The 0.0.0.0 value cannot be used in the Trap community because CC MIS needs an explicit list of IP addresses to which traps are to be sent.</p>

System configuration reports

System configuration reports provide a record of system configuration changes and setup. Select the Reports option from the Configuration menu to access system configuration reports.

Procedure 16: Accessing Reports

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

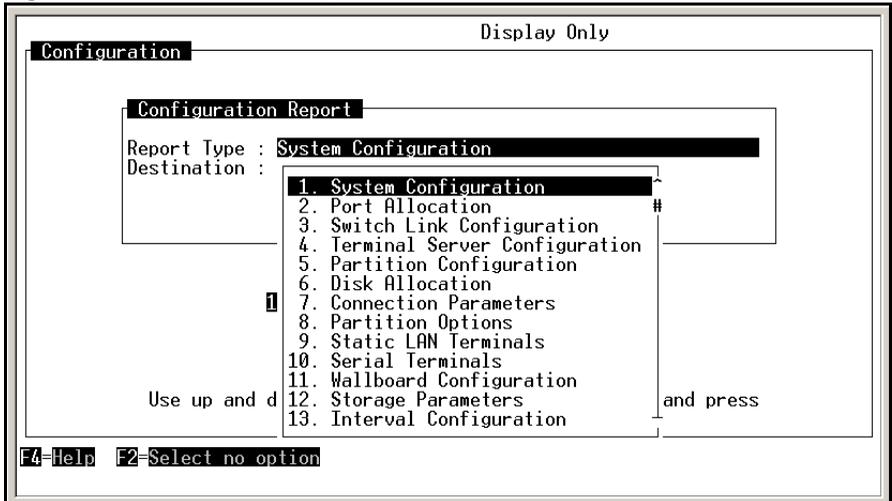
The system displays the Configuration main menu (see Figure 26 on page 132).

- 3 Select **Reports**.

The Report pop-up menu appears (see Figure 43).

- 4 Press the **Options** function key to display a list of available reports.

Figure 43: Configuration Reports



- 5 Type the number associated with the report you want to view.

Note: A system default printer must be defined to print system configuration reports directly from the CC MIS server.

The following system configuration reports are available:

- System Configuration Report
- Port Allocation Report
- Switch Link Configuration Report
- Terminal Server Configuration Report
- Partition Configuration Report
- Disk Allocation Report
- Connection Parameters Report
- Partition Options Report
- Static LAN Terminals Configuration Report
- Serial Terminals Configuration Report
- Wallboard Configuration Report
- Storage Parameters Report
- Interval Configuration Report
(available only if you purchased the Flexible Intervals option)
- Simulator Configuration Report
- SNMP Configuration Report
(available only if you purchased the SNMP Support option)
- Physical Network Configuration Report
(available only if you purchased the Networking option)
- Virtual Network Configuration Report
(Available only if you purchased the Networking option)
- Master Privilege Override
- Master Privilege Definition
- All Reports

Note: For examples of these reports, see “System Configuration reports” on page 431.

- 6 Navigate to the **Destination** field and press the **Options** function key.

- 7 Select the destination of the report. There are two options:
- System Default Printer—This option sends the report directly from the CC MIS server to the system default printer. Go to Step 9.
 - Partition—If Partition is selected in the Destination field, you can select a partition defined on the system and then select any one of the report destinations defined within that partition. If you choose to send the report to a partition device, then two additional fields appear on the screen (Partition and Send To) which allow you to select the partition and the device within that partition. Go to Step 8.

Figure 44: Destination options

The screenshot displays a terminal window titled "Configuration" with a "Display Only" status in the top right corner. The main content area is titled "Configuration Report" and shows the following configuration details:

- Report Type : Port Allocation
- Destination : System Default Printer

A list of menu items is displayed below the configuration details:

- 1. System Default Printer
- 2. Partition
- 8. Partition Configuration
- 9. SNMP Configuration
- 10. Reports

At the bottom of the screen, instructions state: "Use up and down arrows to move among menu items and press ENTER to make a selection." Below this, keyboard shortcuts are listed: "F4=Help" and "F2=Select no option".

- 8 If Partition is selected in Step 7, do the following:
 - a. Press the **Options** function key to display a list of available partitions and then select the partition.
 - b. Navigate to the **Send To** field and press the **Options** function key to display a list of defined output devices. These devices can be one of three possible types: Printer, File, and Email.
 - c. Select the output device.

If the selected output device is a File device, the File Name field appears where you can enter the name of a file in which to save the report. A .txt file extension is recommended. If you do not enter a file name in this field, the default file name as specified in the Client Services Setup on that PC is used.

If the selected output device is an Email device, the Email Addr field appears. Enter the e-mail address (in the form <user>@<host>) of the recipient receiving the report.

- 9 Press the **Commands** function key, and then select the **Generate** option to generate the report.

Chapter 8

Shutdown, Startup, Reboot, and Power down

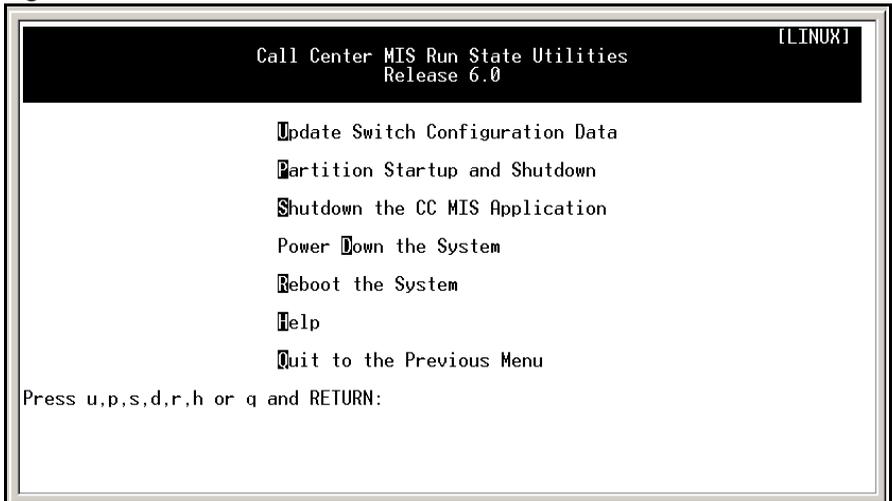
In this chapter

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Shutdown the CC MIS application	164
Startup the CC MIS application.	166
Power Down the System	168
Power Up the System	170
Reboot the System	172

Introduction

This chapter contains procedures for the shut down, start up, reboot, and power down CC MIS commands and functionality. These commands are available from the Run State Utilities menu (see Figure 45).

Figure 45: Run State Utilities menu



Update Switch Configuration Data

For information about this menu command, see “Switch Configuration Data updates” on page 323.

Partition Startup and Shutdown

The startup and shutdown of CC MIS partitions is performed from the Run State Utilities menu. It is also available in the Partition Configuration screen (see “Local Partitions” on page 197).

Shutdown/Startup of the CC MIS Application

CC MIS must be manually shutdown before you can perform certain functions through the maintenance console.

Note: CC MIS is automatically shut down for functions requiring shutdown.

The shutdown command leaves the operating system and other non CC MIS software running. For more details, see “Shutdown the CC MIS application” on page 164.

Perform a startup of the CC MIS application if you shut down CC MIS. For more details, see “Startup the CC MIS application” on page 166.

Power Down/Up the System

The Power Down the System command is used to remove power from CC MIS server. The power down command is selected from the Run State Utilities menu.

The Power Up the System command is used to return power to the CC MIS server.

Note: Use the power button to power up the CC MIS server after a power down.

For more details, see “Power Down the System” on page 168 and “Power Up the System” on page 170.

Reboot the System

The Reboot the System command allows support personnel to remotely reboot the system without on-site intervention. That is, a local person at the remote site is not required to reboot the system.

For more details, see “Reboot the System” on page 172.

Shutdown the CC MIS application

The Shutdown the CC MIS application command shuts down the CC MIS application, leaving the operating system, non CC MIS programs, and CC MIS maintenance software running.

Note: To shut down both the CC MIS software and the Linux operating system, use the Power Down the System command.

If you request a maintenance function that can only be performed with CC MIS shut down, the maintenance and administration software automatically shuts down CC MIS. You do not need to shut down the system manually.

The exception is the changing of the Network Name, which requires manual shutdown.

Perform the steps in Procedure 17 on page 165 to manually shut down CC MIS.

ATTENTION!

Automatic logoff when CC MIS is shut down

Advise supervisors that you are shutting down the CC MIS application. Supervisors do not have access to CC MIS after you have shut down the system. CC MIS supervisors are automatically logged off if the CC MIS system is shut down.

Procedure 17: Manually shutting down the CC MIS application

- 1 Ensure that CC MIS is operating (that is, the application is running).
- 2 Access the Maintenance and Administration main menu.
- 3 Type **r** to display the Run State Utilities menu.
- 4 From the Run State Utilities menu, type **s** to **Shutdown the CC MIS application**.

The following warning message is displayed:

```
WARNING!
```

```
Proceeding with this operation will bring down all  
CC MIS software.
```

```
Ready? (yes/quit)
```

- 5 Type **y** to proceed with the shutdown.

Note: To cancel the shut down and return to the Run State Utilities menu, type **q**.

If you select **s**, the system displays the following message:

```
CC MIS terminating. . .  
CC MIS has been shutdown.  
Use the Startup the CC MIS Application command to  
restart it.  
Press RETURN to continue.
```

- 6 Press **<enter>**.

The Run State Utilities menu appears.

Note: Because the CC MIS application is shut down, the Run State Utilities menu has changed to include the **Startup the CC MIS Application** option (instead of the Shutdown the CC MIS Application option).

Startup the CC MIS application

The Startup the CC MIS application command starts up CC MIS after it has been shut down (not powered down).

Perform the steps in Procedure 18 to start up the CC MIS application.

Procedure 18: Starting up the CC MIS application

- 1 Access the Maintenance and Administration main menu.
- 2 Type **r** to display the Run State Utilities menu.
- 3 Type **s** to **Startup the CC MIS application**.

Note: The CC MIS application must be shut down in order for the Startup the CC MIS application command to be available in the Run State Utilities menu.

The system displays the following messages:

```
Start the CC MIS system
Is the date and time [date and time] correct?
(yes/no/quit)
```

Note: To cancel the startup of the CC MIS application and return to the Run State Utilities menu, type **q**.

- 4 If the time and date are incorrect, type **n**.

The system displays the following prompt:

```
Enter the correct time and date [mmddHHMMyy]:
```

- 5 Enter the correct time and date in the mmddHHMMyy format and press the **<enter>** key.

The system displays the following message again:

```
Is the date and time [date and time] correct? (yes/no/quit)
```

Note: The time and date for the system are specified at this prompt. The date and time are not read from the switch unless the link is

synchronized with the switch. If the system experiences "drifting time", it must be shut down and restarted, and the date and time must be reset.

- 6 Enter **y** to indicate that the date and time are correctly set.

The system displays the following messages:

```
Starting CC MIS. . . .
```

```
CC MIS has been started.
```

```
Press RETURN to continue.
```

- 7 Press **<enter>**.

The system displays the Run State Utilities menu. Because the CC MIS application is started, the Run State Utilities menu has changed to include the **Shutdown the CC MIS Application** command (instead of the Startup the CC MIS Application command).

Power Down the System

The Power Down the System command powers down both the CC MIS application and the Linux operating system. Power down the CC MIS server when you want to do one of the following:

- stop all software that is running on the server
- remove power from the system to service hardware or move the system

Perform the steps in Procedure 19 to power down CC MIS.

Procedure 19: Powering down the CC MIS system

- 1 Access the Maintenance and Administration main menu.
- 2 Type **r** to display the Run State Utilities menu.
- 3 Enter **d** to **Power Down the System**.

This command powers down both the CC MIS system and the Linux operating system). The system displays the following warning messages:

```
Prepare the system for powering down.
```

```
This command shuts down the CC MIS system (if it is currently running), then shuts down the operating system in preparation for removing power from the system.
```

```
Ready (yes/quit)?
```

4 Type **y** to power down the system.

Note: To quit and return to the Run State Utilities menu, type **q**.

At this point, the ccmis user is logged off as the operating system takes over the process of shutting down the system in an orderly manner.

- If remotely logged on when the power down command was issued, the following messages are displayed.
- If logged on to the system console, the operating system displays several additional messages on the console as it stops all running services and processes.

The system displays the following messages:

```
CC MIS terminating ...
```

```
Beginning operating system shutdown.
```

```
SHUTDOWN started
```

```
Tues Feb6 14:11:40 CDT 2005
```

```
THE SYSTEM IS BEING SHUT DOWN NOW ! ! !
```

```
Log off now or risk your files being damaged.
```

```
Power down.
```



CAUTION

Risk of corrupted files

After performing Step 4, you must wait for the message “Power down.” before proceeding to Step 5.

Failure to wait can result in corrupted files on the disk.

- 5 Turn off the system power using the power button on the front of the server after the message “Power down.” is displayed.
- 6 If the system was powered down to perform a hardware maintenance operation, unplug the power cord from the wall outlet or UPS. (Nortel recommends that the power cord be unplugged.)

Power Up the System

Procedure 20 is used to power up the CC MIS system, including the CC MIS application, after it has been powered down using the Power Down the System command.

Perform the steps in Procedure 20 to power up the CC MIS system and application.

Note: Perform only Step 1 if the CC MIS application was running prior to the system being powered down. Perform all of the steps if the CC MIS application was shut down prior to the system being powered down.

Procedure 20: Powering up the CC MIS system

- 1 Turn on power using the power button on the server.

Note: System startup can take several minutes.

After the system startup is complete, the system displays the following prompt:

```
Console login:
```

- 2 Type **ccmis**.

The system displays the password prompt:

```
Password:
```

- 3 Type the password.

The Maintenance and Administration main menu appears.

- 4 Type **r** to select the Run State Utilities option.

The Run State Utilities menu appears.

- 5 If CC MIS was running before the system was powered down, it automatically restarts. Otherwise, type **s** to **Startup the CC MIS application**.

The system displays the following messages:

```
Start the CC MIS system
Time:
Date:
Ready? (yes/quit)
```

- 6 Type **y**.

Note: To cancel the startup and return to the Run State Utilities Menu, type **q**.

The system displays the following messages:

```
Starting CC MIS. . . .
CC MIS has been started.
Press RETURN to continue.
```

- 7 Press <enter>.

The system displays the Run State Utilities menu. Because the CC MIS application is started, the Run State Utilities menu has changed to include the **Shut Down the CC MIS Application** command (instead of the Startup the CC MIS application command).

Reboot the System

The Reboot the System command allows support personnel to remotely reboot the system without on-site intervention. That is, a local person at the remote site is not required to reboot the system.

Perform the steps in Procedure 21 to reboot the system.

Procedure 21: Rebooting the System

- 1 Access the Maintenance and Administration main menu.
- 2 Type **r** to display the Run State Utilities menu.
- 3 Enter **r** to **Reboot the System**.

The system displays the following warning messages:

```
Shutdown the system and restart
```

```
This command shuts down the CC MIS application (if it  
is currently running), then shuts down and restarts  
the operating system.
```

```
Ready? (yes/quit)
```

- 4 Type **y** to reboot the system.

Note: To quit and return to the Run State Utilities menu, type **q**.

The system displays the following messages:

```
Broadcast message from root (pts/0)  
(Tue Mar 1 08:07:58 2005):
```

```
The system is going down for reboot NOW!
```

```
System reboot requested. You will now be logged out.
```

```
Press RETURN to continue.
```

The Maintenance and Administration interface is logged off at this point.

- 5 After the system reboots, you can reconnect and log back on to the Maintenance and Administration interface (see Procedure 4 on page 114).

Chapter 9

Backing up, Restoring, and Importing data

In this chapter

Introduction	176
The backup directory.	178
Backing up customer data.	181
Restoring customer data	186
Importing data.	191

Introduction

You can perform the following functions from the Backup and Restore Utilities menu:

- back up customer data from a directory
- restore customer data from a directory
- import data from selected CC MIS databases from other CC MIS systems (to a Release 6.0 system)

These functions are accessed through the Backup and Restore Utilities menu, as shown in Figure 46 on page 177.

The CC MIS application must be running in order for backup or restore functions to be performed.

Backup functions can be performed when the affected partitions are running or stopped. Restore and import functions require that the destination partition is stopped while the operation is being performed. The software stops the affected partitions as needed to perform the restore or import operation.

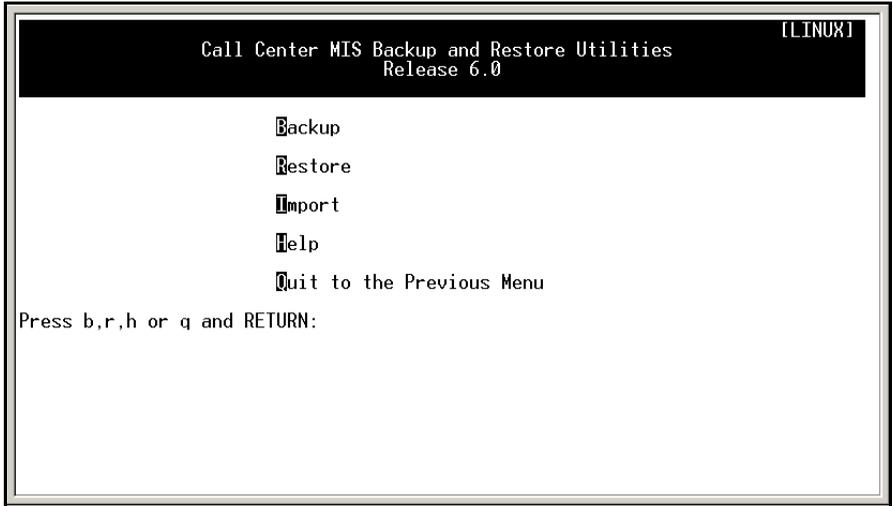
Perform the step in Procedure 22 to access the backup and restore utilities.

Procedure 22: Accessing the Backup and Restore Utilities menu

- 1 Access the Maintenance and Administration main menu.
- 2 Type **b** to access the Backup And Restore Utilities menu.

The system displays the Backup and Restore Utilities menu (see Figure 46).

Figure 46: Backup and Restore Utilities menu



The backup directory

Release 6.0 supports the backup and restore of the CC MIS databases to and from any file system that the user has configured through the System Configuration screen (that is, a directory is specified where the backups are stored).

This directory can be configured to point at any device that can be mounted as a Linux file system. This can include an additional hard drive, an NFS mounted file system, or any other network storage device that can be configured as a file system.

Note: Backup to a tape drive is not supported in Release 6.0, as there is a limit to the amount of data that can be stored on a single tape cartridge.

Configuring the backup directory

Before backups can be performed, a backup directory must be specified. The directory to receive backups is configured in the Configuration > System Configuration screen.

Note: Upon initial installation of the CC MIS application, the backup directory is empty if a backup directory was not supplied as part of the installation, therefore disabling all backups. In this situation, an error log is generated when the nightly backup runs to indicate that no backup directory has been specified.

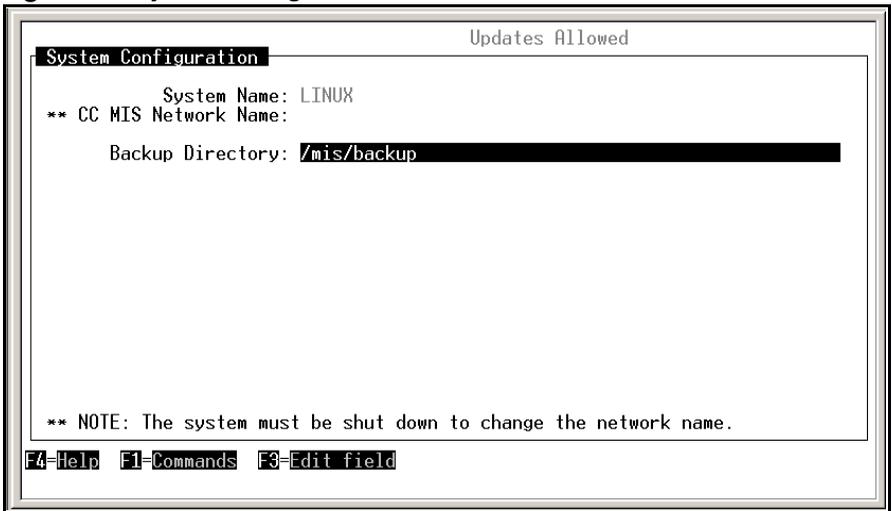
Use Procedure 23 to configure the backup directory in the Configuration > System Configuration screen.

Procedure 23: Configuring the backup directory

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration menu.
- 3 Select **Get Update Access Rights** (this switches the mode from Display Only to Updates Allowed).
- 4 Select **System Configuration**.

The System Configuration screen appears (see Figure 47 on page 179).

Figure 47: System Configuration screen



- 5 Navigate to the **Backup Directory** field.

When you navigate to the Backup Directory field, the function key options at the bottom of the screen change.

- 6 Press the **Edit field** function key. (In this example, the F3 function key is pressed to select the Edit field option [see Figure 47]).

Note: You can also simply type the new directory name and press <enter> without using the Edit field function key.

- 7 Enter or edit the backup directory.

The Backup Directory field specifies the directory into which CC MIS backs up its databases. The directory provided must be an existing directory having write permissions for the CC MIS application. The length of the directory name is restricted to a maximum of 50 characters.

If the Backup Directory field is left empty, nightly/automatic backups cannot occur and you cannot perform ad hoc/manual backups.

8 When the directory has been specified, press the **End editing** function key.

9 Press the **Commands** function key.

The Exit/Save and Exit pop-up menu appears.

10 Select **Save and Exit**.

You are returned to the Configuration screen.

11 Select **Exit** to return to the Maintenance and Administration main menu.

Backing up customer data

The Backup command stores information from the CC MIS databases to a directory. Customer data can only be backed up when the CC MIS system is operating. Backing up customer data records the following information:

- definitions database for selected partitions
- data database for selected partitions
- configuration database

There are two types of backup: automatic backup and manual backups.

Note: There is no difference between manual and automatic backups when all options are selected during a manual backup.

Automatic backups

The CC MIS application automatically performs backups every 24 hours, if the Nightly Backups option is enabled for the partition. The application backs up every partition for which this option is enabled (see “Local Partitions” on page 197).

Note: The terms automatic backup and nightly backup are interchangeable.

A nightly backup is a backup that is performed every 24 hours. The backup occurs after the completion of the midnight processing in which the interval data for the current day is merged to form the daily data for the day. In the case where there are partitions defined with a time zone specification for which midnight occurs later than for the base system, the backup is delayed until all partitions have completed their midnight processing.

At the very least, the automatic nightly backup includes the application-wide configuration database. In addition, partition databases are included in the backup set according to the Nightly Backups option for each of the defined partitions.

To verify that your nightly automatic database backup was successful, view the error log and look for one of the following messages:

- Nightly Backup was successful
- Nightly Backup failed

Manual backups

Manual backups provide additional control over what is backed up. The manual selections for Backup and Restore are as follows:

- For configuration only backup and restore—This backs up and restores the information defined through the maintenance configuration screens.
- For partition/definition database only—This backs up and restores the information defined through administration, reports, displays, configuration screens, and so on, including all definitions that were created by the supervisor.
- For partition/data database only—This backs up only historical statistics. This is the data used in the custom and standard reports. This is not data shown on real-time displays. (This is not applicable for NAPs.)

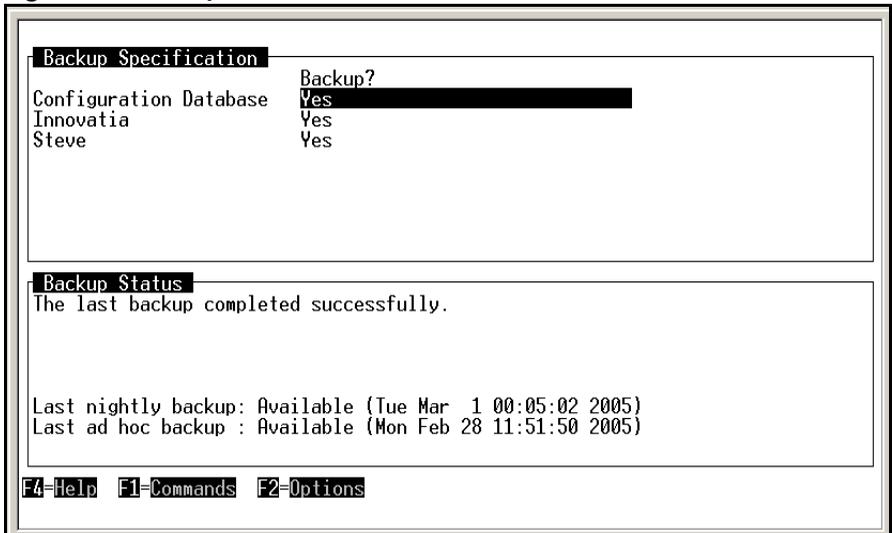
Note: The terms manual backup and ad hoc backup are interchangeable.

The Backup screen

The Backup screen is available through the Backup and Restore Utilities > Backup menu option.

Figure 48 shows a sample Backup screen. The screen is shown with a sample ad hoc backup set. The upper portion of the screen shows the Backup Specification and the lower portion of the screen shows the Backup Status.

Figure 48: Backup screen



Backup Specification

- The default Backup? value is Yes for the Configuration database.
- The default Backup? value for each partition is Yes if the nightly backup for the partition is enabled (see “Local Partitions” on page 197).
- The default for NAPs is Yes for the Definition database only.

Backup Status

The lower portion of the screen displays information about the current backup. Information messages about the backup are displayed in this area.

Backup screen commands

Table 18 describes the commands that are available on the Backup screen by pressing the Commands soft key.

Table 18: Backup screen commands

Command	Function
Exit	Exits the current screen
Start backup	Initiates an ad hoc backup
Cancel backup	Cancels the current backup (after confirmation)
View backup log	Allows the user to view the backup log without having to go through the Logs screen

Using the Backup screen to perform a backup

Use the steps in Procedure 24 on page 185 to perform a backup.

Notes:

1. Procedure 24 backs up only CC MIS data; it does not store information from the ACD database tables on the DMS-ACD.
2. You can perform a backup only when the CC MIS system is operating.

Procedure 24: Backing up data

- 1 Access the Maintenance and Administration main menu.
- 2 Type **b** to access the Backup and Restore Utilities menu.
- 3 Type **b** to back up customer data.

The Backup screen appears.

- 4 Move the cursor to the backup field for the partition.
- 5 Press the **Options** function key.

The Options pop-up menu appears, showing the following options:

1. No
2. Yes
3. Yes (Definition Only)
4. Yes (Data Only)

- 6 Select the desired setting.
- 7 Press the **Commands** function key to display the Commands menu.

The Commands pop-up menu appears, showing the following options:

1. Exit
2. Start backup
3. Cancel backup
4. View backup log

- 8 Select the **Start backup** command.
- 9 View the **Backup Status** portion of the screen for important information and messages regarding the progress of the backup. For example, the messages can include the following:

Ad hoc backup in progress.
Last back up completed successfully.

- 10 When the backup is complete, select **Exit** from the **Commands** pop-up menu to exit the Backup screen.

The Backup and Restore Utilities menu appears.

Restoring customer data

You can use the Restore command to restore customer data from a backup directory in the event of a disk crash or other data corruption. This process loads backup copies of the CC MIS database from the backup directory and replaces existing databases.

Therefore, restoring customer data should only be performed if the existing data is corrupt or is no longer valid.

This procedure restores the following information from the backup directory:

- definitions database for selected partitions
- data database for selected partitions (not applicable for NAPs)
- configuration database

Note: Data can be restored from a backup directory only when the CC MIS software is operating.

If the system crashed and you must restore all data, you must perform the restore in the following in order:

1. Restore the configuration data.
2. Restore both the Partition/Definitions database and Partition/Data database to restore all data for all partitions.

ATTENTION

Ensure that the software release of CC MIS used to create your backup matches the software release of CC MIS that restores the data. The system automatically performs this check and cannot restore data if the backup was created by a different version of software.

**WARNING**

Risk of improper database size

When restoring a database from a backup directory, the size of the historical database for each partition in the backup directory must be the same size or smaller than the configured storage limit.

ATTENTION

Restoring a backup that was performed prior to hardware changes (for example, removal of a hard disk) can result in configuration problems.

The Restore screen

The Restore screen is available through the Backup and Restore Utilities > Restore menu options.

Figure 49 on page 188 shows a sample Restore screen. The upper portion of the screen shows the Restore Specification and the lower portion of the screen shows the Restore Status.

Figure 49: Restore screen

Restore Specification	
	Restore?
Configuration Database	No
Innovatia	Yes
Steve	Yes

Restore Status
The last restore completed successfully.
Last nightly backup: Available (Tue Mar 1 00:05:02 2005)
Last ad hoc backup : Available (Tue Mar 1 14:10:22 2005)

F4=Help F1=Commands F2=Options

Restore Specification

The Restore screen is shown with a sample ad hoc restore set.

You cannot restore the configuration database and the partition databases at the same time. First, restore the configuration database, and then restore the partitions. Configuration adjustments can be required between the restore of the configuration database and the partitions if, for example, the set of file systems for storing partition data is different than the set that was in the saved configuration.

Restore Status

The lower portion of the screen displays information about the current restoration. Information messages about the restore appear in this area.

ATTENTION

The restore process for the configuration database cannot be performed if any partitions are running. The restore function automatically shuts down partitions as required.

Restore screen commands

Table 19 describes the commands that are available on the Restore screen by pressing the Commands soft key.

Table 19: Restore screen commands

Command	Function
Exit	Exits the current screen
Start restore from nightly backup	Initiates a restore from a nightly (automatic) backup
Start restore from ad hoc backup	Initiates a restore from an ad hoc (manual) backup
View restore log	Allows the user to view the restore log without having to go through the Logs screen

Using the Restore screen to perform a backup

Perform the steps in Procedure 25 to perform a restore.

Procedure 25: Restoring data

- 1 Access the Maintenance and Administration main menu.
- 2 Type **b** to access the Backup and Restore Utilities menu.
- 3 Type **r** to restore customer data.

The Restore screen appears.

Note: The Restore process for the Configuration database cannot be performed if any partitions are running. Restoration of a partition also requires that partition be stopped. A prompt is displayed to shut down the partitions, as needed.

- 4 On the **Restore** screen, identify the configuration database or partition data to be restored. (Use the Options function key to display the Options menu.)
- 5 Press the **Commands** function key to display the commands menu.

- 6 Select the **Start Restore** command. There are two available options: start the restore from a nightly (automatic) backup or start the restore from an ad hoc (manual) backup.

A pop-up dialog box appears that can include the following messages:

Warning: the existing contents of each database being restored will be removed immediately before the database is restored from the backup.

Warning: restoring the configuration database with a different hardware configuration than the current system may have undesirable results.

Warning: restoring the configuration database will shutdown ALL partitions.

Are you sure? (y/q)

- 7 Type **y** to restore data.

Note: Enter **q** to cancel the restore process.

- 8 During the restore process, view the **Restore Information** area of the Restore screen for important information and messages regarding the progress of the restore.
- 9 To exit the Backup screen, press the **Commands** function key and select the **Exit** option.

The Backup and Restore Utilities menu appears.

Note: You must manually restart any partitions that were stopped by the Restore process.

Importing data

The Import screen is available through the Backup and Restore Utilities > Import menu option.

The Import screen provides the capability to import partition databases from a remote system. Importing partition databases is useful when moving partitions from one system to another to consolidate operations or when migrating to a more powerful system.

Note: Due to the difference in remote platforms, you cannot import the CC MIS Configuration database using the Import functionality.

Figure 50 shows a sample Import screen. The upper portion of the screen shows the Import Specification and the lower portion of the screen shows the Import Status.

Figure 50: Import screen

The screenshot displays a terminal window with two main sections. The top section, titled 'Import Specification', contains a table with columns for 'Local Partition', 'Import?', and 'Remote Partition'. The bottom section, titled 'Import Status', displays a message: 'The last import completed successfully.' At the bottom of the window, there is a footer with function key shortcuts: F4=Help, F1=Commands, F2=Options, and ~A=Set Remote System.

Local Partition	Import?	Remote Partition
Innovatia	No	
Steve	No	

Import Status
The last import completed successfully.

F4=Help F1=Commands F2=Options ~A=Set Remote System

Import Specification

The upper portion of the Import screen presents a scrollable list of partitions for which you can specify an import. This list contains all the partitions configured on the CC MIS system.

The Import utility does not allow the import of data into a partition if that partition is running. Partitions are stopped as needed, after receiving confirmation. After the import process is complete, you must manually restart any partitions that were stopped by the import process.

Import Status

The lower portion of the Import screen displays information about the current import (if an import is running). Information messages about the import appear in this area.

Import screen commands

Table 19 describes the commands that are available on the Import screen by pressing the Commands soft key.

Table 20: Import screen commands

Command	Function
Exit	Exits the current screen
Start import	Initiates an import
Cancel import	Cancel the current import (after confirmation prompt)
View import log	Allows the user to view the import log without having to go through the Logs screen

The Set Remote System function key must be used to supply the IP address of the remote CC MIS system that will be used as the source of the databases.

ATTENTION

You can use the import operation to import databases from remote systems that are running the same or an older software release as the local system only. If the remote system is running a newer software release than the current system, the import does not proceed. The remote system must be running CC MIS Release 5.2 or later.

The Import? field is used to select the data to be imported if an import operation is started. The following choices are available for each partition:

- No (the default value)
- Yes
- Yes (definitions database only)
- Yes (data database only)

The Remote Partition? field is used to enter the number of the partition on the remote system that is to supply the databases to be imported into the local partition.

Procedure 26: Importing data from a remote system

- 1 Ensure that the remote system is running CC MIS Release 5.2 or later and is connected to the network.
- 2 Ensure that the partition (on the Release 6.0 system) into which the data is to be imported is defined and has sufficient disk space to receive the imported data (from the remote system).
- 3 Access the Maintenance and Administration main menu.
- 4 Type **b** to access the Backup and Restore Utilities menu.
- 5 Type **i** to access the Import screen.

The Import screen appears.

- 6 On the **Import** screen, navigate to the partition where the data will be imported.
Note: The Import utility does not allow an import into a partition if that partition is running. Partitions are stopped as needed, after receiving confirmation. You must manually restart any partitions stopped by the import process.
- 7 Use the **Options** function key to select the database to be used for the import.
- 8 Press the key associated with the **Set Remote Partition** function key at the bottom of the screen when focus is sent to the **Remote Partition** field (that is, the field is highlighted).

The Set Remote Partition pop-up window appears (see Figure 51).

Figure 51: Set Remote Partition pop-up window

Enter the IP address of the CC MIS system to import the selected database(s) from. The IP address must be entered in dotted decimal form, for example:

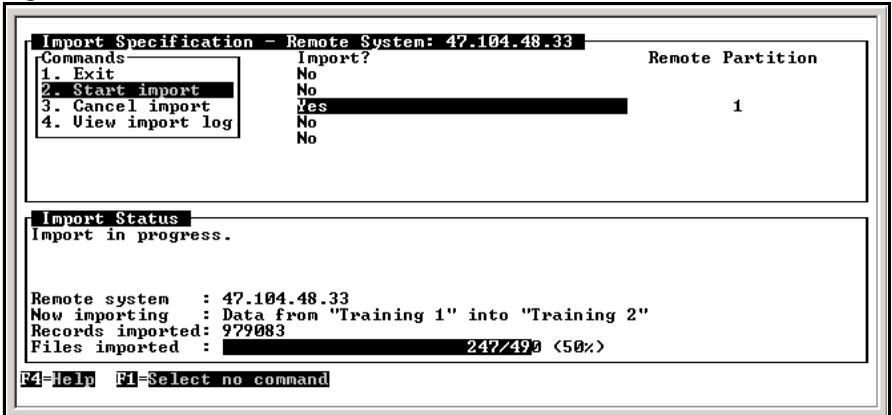
nnn.nnn.nnn.nnn

Enter IP address: █

- 9 Type the IP address of the remote system, and then press <enter>.
- 10 Press the **Commands** function key to display the commands menu.
- 11 Select the **Start Import** command.

Messages about the import are displayed in the Import Status portion of the screen (see Figure 52 on page 195).

Figure 52: Import Status



Note: There is no need to remain in the screen while the import is in progress. You can leave the screen and then return to check on the progress of the import.

- 12** When the import is complete, press the **Commands** function key, and then select the **Exit** command to exit the Import screen.

The Backup and Restore Utilities menu appears.

- 13** Press **q** to return to the Maintenance and Administration main menu.

Chapter 10

Local Partitions

In this chapter

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Introduction

You can configure multiple partitions on a single CC MIS server. Think of each partition as a complete CC MIS system that serves a single customer. You can define two types of partitions on a CC MIS system:

- Local partitions—Local partitions provide access to DMS-ACD functionality that is directly connected to the CC MIS server on which they are defined. This chapter discusses local partitions.
- Network Access Partitions (NAP)—See “Networked CC MIS” on page 251 to set up the network and establish NAPs.

The portion of the DMS-ACD that is accessible to a local partition is limited to the ACD groups and positions that are assigned to a single ACD subpool within the ACD pool defined for the switch link that the partition is associated with. The switch link and subpool with the local partition are defined in the Connection Parameters screen.

Modes of operation

You can have partitions running in different modes within the CC MIS application. One partition can run in product mode while another runs in training mode. Converting a partition from one mode to another does not affect other partitions.

Partitions can operate in the following modes:

- training mode
- precut mode
- product mode

When you first create a partition, the partition is in setup mode. The partition cannot be transitioned out of setup mode until enough datafill is completed to allow the transition. The CC MIS application does not allow a partition to be transitioned out of setup mode if any required datafill is missing.

Training mode

When a partition is in training mode, supervisors can train on the product without affecting live calls. In training mode, no connection exists between the partition and the DMS-ACD, and only training data is collected and reported.

When a partition is in training mode, CC MIS interacts with the simulator to provide training data. The simulator uses call scenarios and configuration control typical to the ACD environment. During training, supervisors can adjust load management values and move position assignments through the configuration control capability of CC MIS. As a result, the simulator generates ACD switch responses that are identical to ACD processing in a live environment.

Precut mode

While a partition is in precut mode, system engineers can enter all administration data into the partition new databases in preparation for transition to product mode. While running a partition in precut mode, it is possible to run with a simulator link; however, Nortel recommends that you use the actual live link to access the real switch configuration information while various system definitions are being defined (such as scopes and ACD group definitions). During precut mode the following information is established:

- link and subpool parameters
- database storage parameters
- ACD group names, agent names, and threshold values
- supervisor profiles, privilege levels, and scope definitions
- custom report definitions, display definitions, and schedules

Although CC MIS collects statistical data while in precut mode, this data is deleted upon transition to product mode. In precut mode, you can establish parameters that affect the collection of statistics (such as threshold definitions) prior to going live. After you define these parameters, the transition to product mode removes the statistical information captured during precut mode so that the data collected prior to establishing the proper threshold values does not skew reports that are generated in product mode.

Product mode

In product mode, CC MIS establishes a connection between the local partition and the DMS-ACD and begins collecting live data based on the configuration of its ACD groups and agents. The transition to product mode erases all statistical data captured by the partition in precut mode.

Operating states

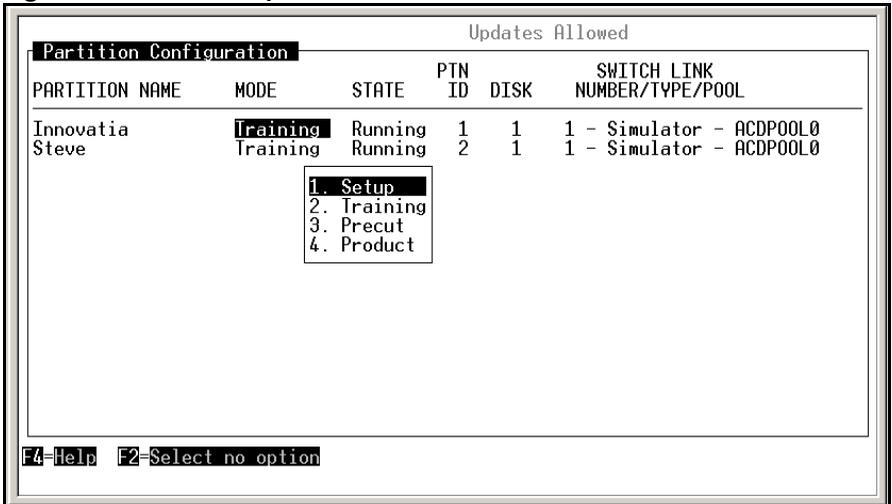
Partitions are in one of four modes: setup, training, precut, or product. In addition, each partition can be in one of two operating states:

- running
- stopped

The default mode and state of a newly added partition is setup and stopped, respectively. Partitions in setup mode cannot be running.

You can change the mode of a partition by selecting a new mode from the menu while on the Mode field (see Figure 53 on page 201).

Figure 53: Modes of a partition



You can initiate changes when the partition is in either a running or stopped state. Partitions in a stopped state can be changed from one mode to another mode with no additional datafill or other changes required. If the mode is changed while the partition is running, the partition is stopped and an attempt is made to start the partition in the new mode.

Note: Changing the mode of a partition can also involve changes to either the data or definitions database.

Requirements for a running state

The following list describes the requirements for a running partition in any of the three available modes (training, precut, or product):

- You must select a valid switch link in the Connection Parameters screen. For training mode, you can select only the simulator type. For product mode, you can select only live links.
- You must define partition options.
- You must select a valid disk for partition data storage in the Disk Allocation screen.

- You must set data storage parameters (for example, number of groups and positions, storage durations) in the Storage Calculator screen. The number of days, weeks, or months that data is stored is determined by the parameters set through the Storage Calculator. The specified duration identifies the period of time data is saved before being purged automatically from the database.

Note: If you do not want to collect and store historical data, enter zero values on the Storage Calculator screen.

Partition task list

To set up a partition, you must complete the following tasks:

1. Configure the system and define a simulator or live link.
(See “Configuring the CC MIS application” on page 129.)
2. Add a partition.
(See “Adding a partition” on page 209.)
3. Set up partition options.
(See “Partition Options” on page 213.)
4. Select a link number, subpool name, and password.
(See “Connection Parameters” on page 229.)
5. Allocate a disk to this partition.
(See “Disk Allocation” on page 220.)
6. Set data storage parameters.
(See “Storage Calculator” on page 224.)

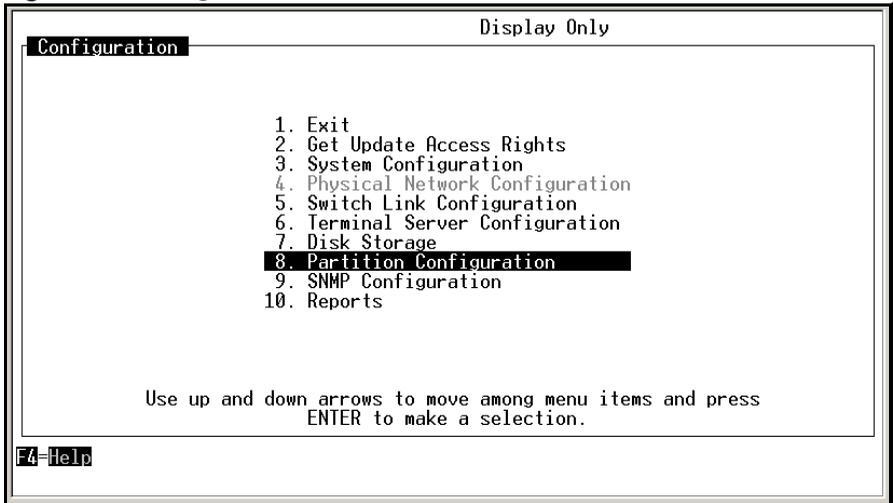
Accessing the Partition Configuration screen

You can access the Partition Configuration screen from the Configuration menu.

Procedure 27: Accessing the Partition Configuration screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Partition Configuration** (see Figure 54).

Figure 54: Configuration menu



The system displays the Partition Configuration screen (see Figure 55 on page 205).

Figure 55: Partition Configuration screen

Partition Configuration		Updates Allowed				
PARTITION NAME	MODE	STATE	PTN ID	DISK	SWITCH LINK NUMBER/TYPE/POOL	
Innovatia	Training	Running	1	1	1 - Simulator - ACDPOOL0	
Steve	Training	Running	2	1	1 - Simulator - ACDPOOL0	

F4=Help F1=Exit F3=Edit field *A=Configuration Options *N=>>

You can access the following functions through the **Partition Configuration** screen:

- adding and deleting a partition
- connection parameters
- partition options
- disk allocation
- storage calculator
- configuring serial terminals
- configuring static LAN terminals
- configuring wallboards
- setting master privilege definitions level and overrides

Partition Configuration commands

Table 21 describes the commands are available using the function keys on the Partition Configuration screen:

Table 21: Partition Configuration function commands

Command	Function
Exit	Exits the current screen
Configuration Options	Displays a menu list for accessing other functions such as partition options and disk allocation
Add Partition	Displays a pop-up area to specify the name of the partition to be added
Delete Partition	Deletes the partition and all of its associated resources from the system
Validate Partition	Displays a message in the lower portion of the screen indicating whether the partition is valid for the current mode and state

Partition Configuration — Configuration Options

Table 22 describes the options available using the Configuration Options soft key. Figure 56 shows the Configuration Options pop-up menu, which appears when the you type the Configuration Options soft key.

Figure 56: Configuration Options



The options must be completed in the order as listed in Table 22:

Table 22: Partition configuration options (Part 1 of 2)

Option	Function
Connection Parameters	Displays the Connection Parameters screen
Partition Options	Displays the Partition Options screen
Disk Allocation	Displays the Disk Allocation screen
Storage Calculator	Displays the Storage Calculator screen
Serial Terminals	Displays the Serial Terminals Configuration screen
Static LAN Terminals	Displays the LAN Terminals screen

Table 22: Partition configuration options (Part 2 of 2)

Option	Function
Wallboards	Displays the Wallboard setup screen
Master Privilege Definition	Displays the Master Privilege Definition screen

Adding and deleting partitions

Adding a partition

Partitions must be defined using the Partition Configuration screen. Partition names can be up to 16 characters in length.

The initial settings for a new partition are Mode=Setup and State=Stopped.

Perform the steps in Procedure 28 to access the Partition Configuration menu and add a partition.

Procedure 28: Adding a partition

1 Access the Maintenance and Administration main menu.

2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu.

3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.

4 Select **Partition Configuration**.

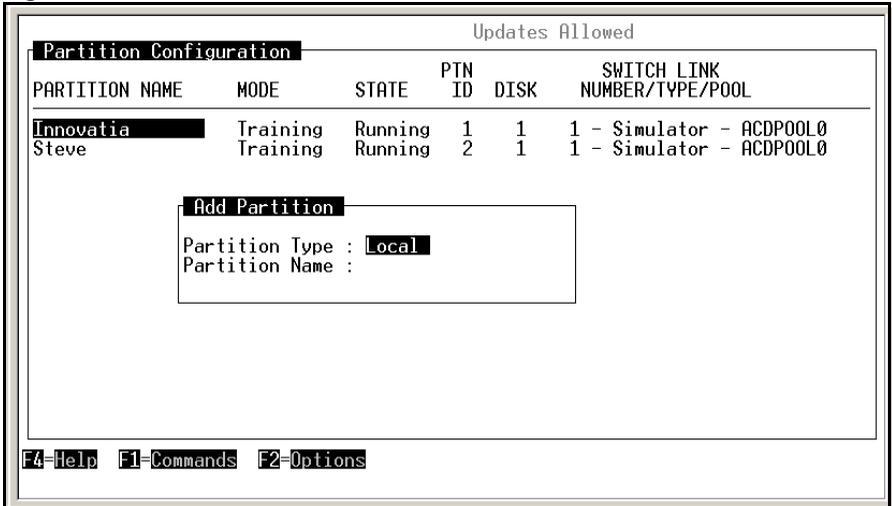
The system displays the Partition Configuration screen.

5 Select the **Add Partition** function key.

The Add Partition dialog box appears (see Figure 57 on page 210).

There are two partition types, Local and NAP. Local is the default partition type. (NAPs are defined in “Networked CC MIS” on page 251.)

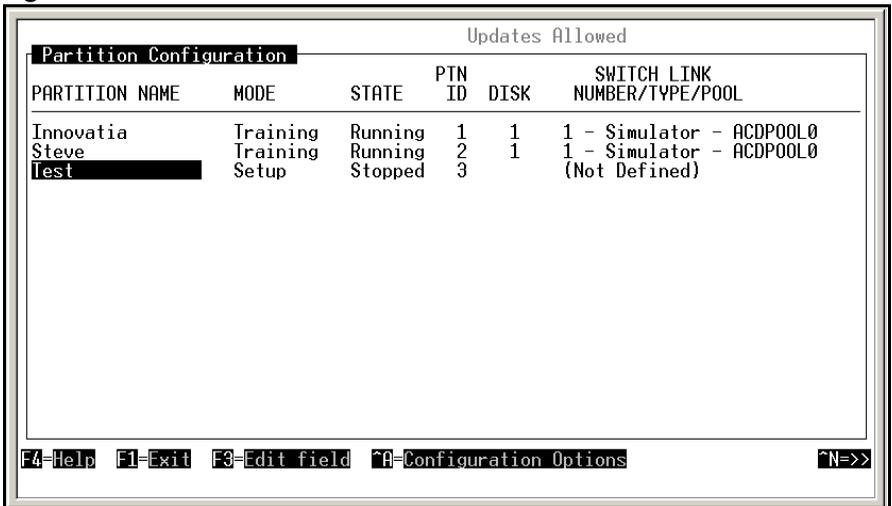
Figure 57: Add Partition



- 6 Enter a **Partition Name** (up to 16 characters) using the function keys.
- 7 Using the **Commands** function key, press **2** to submit and add the partition.

The partition is added to the list of partitions (look under the Partition Name column shown in Figure 58).

Figure 58: Added Partition



- 8 Press the **Configuration Options** function key to access the Configuration Options menu. For more details, see “Partition Options” on page 213.

Deleting a partition

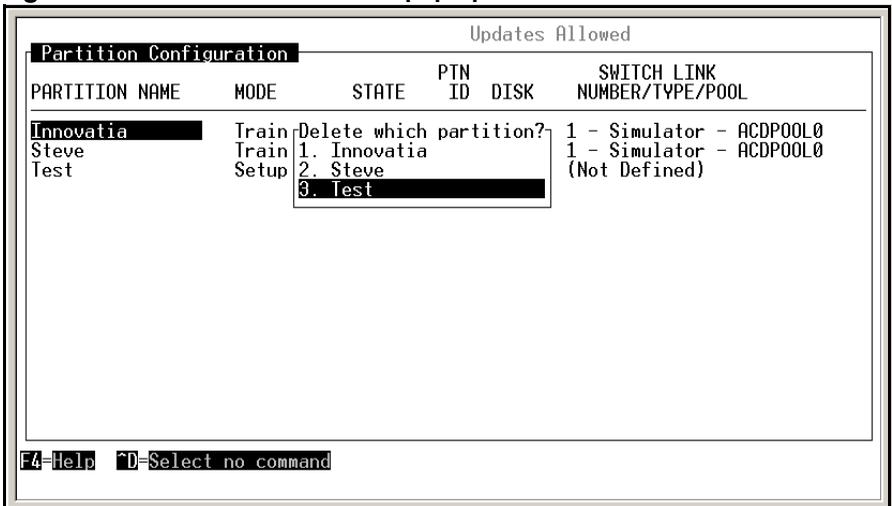
Perform the steps in Procedure 29 to access the Partition Configuration menu and delete a partition.

Procedure 29: Deleting a partition

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Type **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Type **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5 Select the **Delete Partition** function key.

The **Delete which Partition?** pop-up menu appears (see Figure 59).

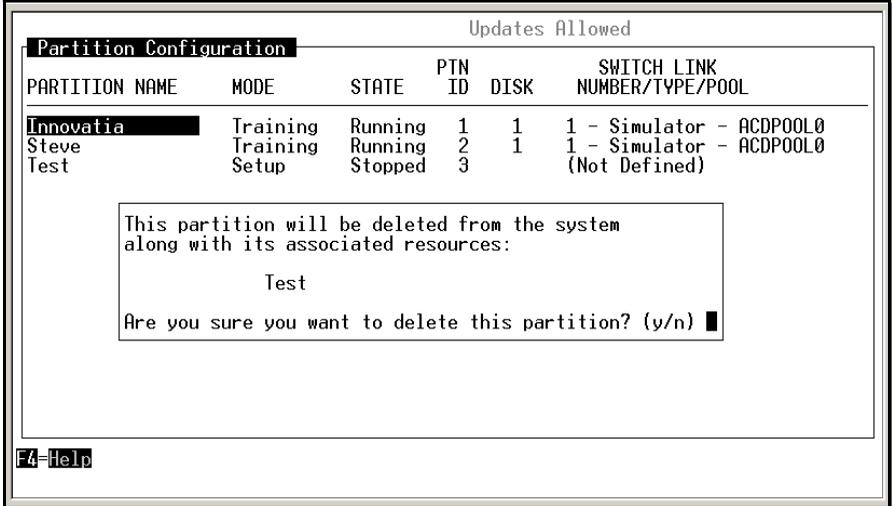
Figure 59: Delete which Partition? pop-up



6 Select the partition to delete.

The deletion confirmation pop-up appears (see Figure 60).

Figure 60: Delete partition confirmation pop-up



7 Type **y** to delete the partition.

The partition is deleted and the associated system resources used by that partition are also deleted.

The Partition Configuration screen reappears.

Partition Options

Use the Partition Options screen to specify a subset of capabilities for use by a single partition (see Figure 61 on page 214).

For changes to take effect immediately, the partition must be shut down and restarted (except for changes to Nightly Backup, Max Supervisor Connections, Maximum Logins, Host Email Support, and Dynamic LAN Terminal Access and associated password).

To the right of each Maximum xxx field, there is a set of square brackets, which indicate the range of available resources. These available resources are calculated by the system wide limits minus the resources already in use by other partitions. Therefore, the valid range for any field (with numerical value) is the system limits defined in the license keycode minus the sum of the values of all other partitions. The values for each field for all partitions are added together and compared to the system limit.

Perform the steps in Procedure 30 to access the Partition Options screen.

Procedure 30: Accessing the Partition Options screen

- 1** Access the Maintenance and Administration main menu.
- 2** Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3** Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4** Select **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5** Select the **Configuration Options** function key
The system displays the Configuration Options menu.

6 Select **Partition Options** from the **Configuration Options** menu.

The system displays the Partition Options screen (see Figure 61).

Figure 61: Partition Options — <Partition Name> screen

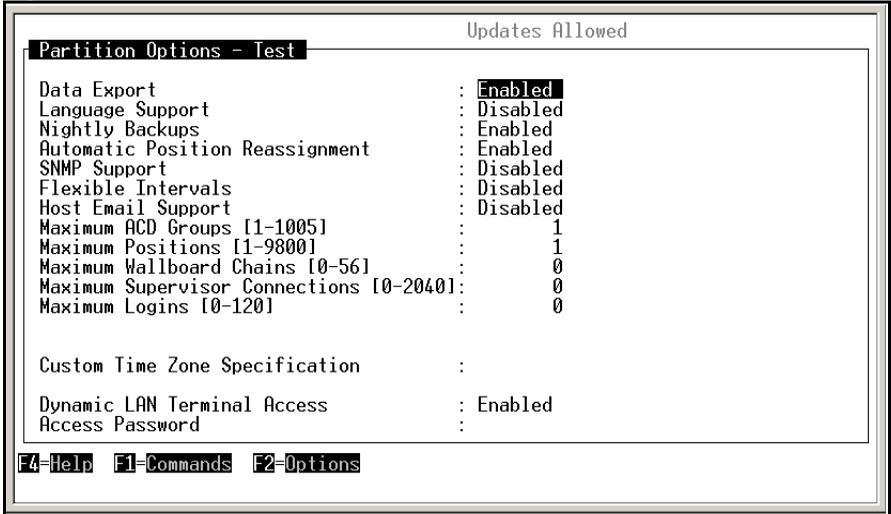


Table 23 describes the fields of the Partition Options screen.

Table 23: Partition options screen fields (Part 1 of 6)

Parameter	Description
Data Export	Enables or disables the ability of the partition to use the CC MIS Data Export feature.
Language Support	Enables or disables the ability of the partition to make use of multiple languages. Note: This feature is optional.

Table 23: Partition options screen fields (Part 2 of 6)

Parameter	Description
Nightly Backups	<p>Configures automated nightly backups for this partition.</p> <ul style="list-style-type: none"> ■ Disabled—No nightly backups are performed for this partition. ■ Enabled—All partition data is backed up. ■ Definitions Only—Only the partition definitions database is backed up. This is useful when the data database is very large and is already protected by a RAID device. Backing up definitions allows for recovery from accidental deletion of definitions. ■ Data Only—Only the partition historical data database is backed up.
Automatic Position Reassignment	<p>Enables or disables the ability to automatically reassign the agents associated with this partition to specified groups based on their logon IDs.</p>
SNMP Support	<p>Enables or disables the SNMP feature for the selected partition.</p> <p>Note: This feature is optional.</p>
Flexible Intervals	<p>Enables or disables flexible intervals for the partition.</p> <p>Note: This feature is optional.</p>

Table 23: Partition options screen fields (Part 3 of 6)

Parameter	Description
Host Email Support	<p>Enables or disables e-mail support for the partition. When enabled, supervisors in this partition can send reports by e-mail directly from the CC MIS server. This option depends on the UNIX Sendmail program. The program must be installed on the server and properly configured.</p> <p>You can enable this option in one of two ways:</p> <ul style="list-style-type: none"> ■ Reports in Body—Sends the report embedded in the body of the e-mail message. ■ Reports as Attachments—Sends the report as an attachment to the e-mail message.
Maximum ACD Groups	Maximum number of ACD groups the partition can datafill in the Storage Calculator.
Maximum Positions	Maximum number of agent positions the partition can datafill in the Storage Calculator.
Maximum Wallboard Chains	Maximum number of wallboard ports the partition can use. A zero value indicates that the Wallboard option is not enabled.
Maximum Supervisor Connections	Maximum number of connections, including both serial connections and LAN, that this partition can have at one time. This information is used to limit the number of running processes on the system. This field must be greater than or equal to the Maximum Logins field.
Maximum Logins	Maximum number of supervisors that can be logged on to the system for the partition at a given time. This field must be less than or equal to the Maximum Supervisor Connections field.

Table 23: Partition options screen fields (Part 4 of 6)

Parameter	Description
Custom Time Zone Specification	<p>Allows a partition to be set to run in a different time zone than the rest of the system.</p> <p>Leave this field blank if the system time zone setting is appropriate for the partition. If specified, the custom time zone setting should be specified in one of two formats depending on whether the time zone uses Daylight Savings Time.</p> <p>Time zones without Daylight Savings Time:</p> <p>STD offset</p> <p>The STD string specifies the name of the time zone and must be three or more alphabetic characters. The offset string immediately follows STD and specifies the time value to be added to the local time to get Coordinated Universal Time (UTC). The offset is positive if the local time zone is west of the Prime Meridian and negative if it is east. The hour must be between 0 and 24, and the minutes and seconds between 0 and 59.</p> <p>Time zones with Daylight Savings Time:</p> <p>STD offset DST [offset] [,start[/time],end[/time]]</p> <p>There are no spaces in the specification. The initial STD and offset specify the standard time zone, as described above. The DST string and offset specify the name and offset for the corresponding Daylight Savings Time zone. If the offset is omitted, it defaults to one hour ahead of standard time.</p>

Table 23: Partition options screen fields (Part 5 of 6)

Parameter	Description
	<p>The start field specifies when Daylight Savings Time goes into effect and the end field specifies when the change is made back to standard time. These fields can have the following formats:</p> <ul style="list-style-type: none"> ■ Jn—This specifies the Julian day with n between 1 and 365. February 29 is never counted even in leap years. ■ n—This specifies the Julian day with n between 1 and 365. February 29 is counted in leap years. ■ Mm.w.d—This specifies day d (0 <= d <= 6) of week w (1 <= w <= 5) of month m (1 <= m <= 12). <p>Week 1 is the first week in which day d occurs and week 5 is the last week in which day d occurs. Day 0 is a Sunday.</p> <p>The time fields specify when, in the local time currently in effect, the change to the other time occurs. If omitted, the default is 02:00:00.</p>
Dynamic LAN Terminal Access	<p>Allows supervisor terminals in the Windows interface to connect to a specified partition without the IP address being defined in the Static LAN Terminals screen. When enabled, any client PC can access the partition, provided the user knows the name or number of the partition and the partition Access Password. Enabling this option allows client PCs which are assigned a random IP address by a DHCP server to access the partition without constantly changing the IP address assignment for the PC in the Static LAN Terminals screen.</p>

Table 23: Partition options screen fields (Part 6 of 6)

Parameter	Description
Access Password	<p>This field is used to set the access password for this partition. This password is required when the Dynamic LAN Terminal Access is enabled.</p> <p>This password is case-sensitive.</p> <p>A change to this option or its associated password takes effect immediately and does not require a shutdown or a restart of the partition.</p>

Disk Allocation

Partition data must reside on one disk (file system). However, a disk can contain several partitions. Therefore, resource limits must be set for each partition. You can assign a disk to a partition in the Disk Allocation screen (see Figure 62 on page 221).

In addition, you can enter the Storage Calculator to compute the appropriate size limit for a partition or change the size limit for a partition.

The Disk Allocation screen is available from the Configuration main menu, as well as from the Configuration Options key inside the Partition Configuration screen. Use Procedure 31 to access the Disk Allocation screen.

Procedure 31: Access the Disk Allocation screen (from the Partition Configuration screen)

- 1** Access the Maintenance and Administration main menu.
- 2** Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3** Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4** Select **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5** Select the **Configuration Options** function key
The system displays the Configuration Options menu.

6 Select **Disk Allocation** from the Configuration Options menu.

The system displays the Disk Allocation screen (see Figure 62).

Figure 62: Disk Allocation screen

Disk Allocation					
Updates Allowed					
Partition Name	Size Limit	Space In Use	% In Use	Disk No.	% Disk Alloc
Innovatia	700M	64M	9	1	36
Steve	1000M	64M	6	1	51
Test	50M	0M	0		0

Disk Usage Statistics					
Disk No.	Mount Directory	Disk Size	Avail Space	%Full	Num Partitions
1	/mis/data/fs1	1968M	268M	86	2

F4=Help F1=Exit F7=Storage Calculator ^E=Disk Usage Section

When a partition is being moved to a new disk, the Partition Moving: prompt appears on the upper portion of the screen along with the ID of the partition being moved.

Perform the steps in Procedure 32 to assign a disk or move a partition from one disk to another.

Procedure 32: Assigning a disk

- 1 In the **Disk Allocation** screen, navigate to the **Disk No.** field.
- 2 Enter the disk number on which the partition is to reside.

Note: Select a disk that has enough space. Check the Disk Usage Statistics to see which disk has adequate space.

Table 24 defines the Disk Allocation screen parameters and gives their limits.

Table 24: Disk Allocation screen parameters (Part 1 of 2)

Option	Defines
<p>Disk Allocation Area This area of the screen shows disk allocation based on the configured partitions.</p>	
Partition Name	The name of the partition as defined in the Partition Configuration screen.
Size Limit	The maximum space (in megabytes) allocated for storage of the partition data. You can change this field on this screen or you can change it using the Storage Calculator.
Space In Use	The number of megabytes of the allocated space for the partition that is currently used by the partition.
% In Use	<p>The percentage of the allocated space for the partition that is currently in use.</p> <p>Computed as follows: $\text{Space In Use} / \text{Size Limit} \times 100.$</p>
Disk No.	The disk number on which the partition data resides. Use this field to move a partition to a new disk.
% Disk Alloc	<p>The portion of the entire disk that is allocated to the partition. Computed as follows:</p> $\text{Size Limit} / \text{Disk Size} \times 100.$

Table 24: Disk Allocation screen parameters (Part 2 of 2)

Option	Defines
<p>Disk Usage Statistics</p> <p>This area indicates the sizes of the disk and the amount of available space for each disk.</p>	
Mount Directory	The directory where the physical device is mounted.
Disk Size	The sum of all allocated partitions on a disk plus the remaining space available for allocation (in megabytes).
Available Space	The Disk Size minus the sum of all allocated partitions of the disk.
%Full	The percentage of the total disk size that is allocated.
Num Partitions	The number of partitions that are set up on this disk.

Storage Calculator

You can view or modify the data storage parameters of the historical database for a selected partition on the Storage Calculator screen.

Access the Storage Calculator screen using the soft key on the Disk Allocation screen or from the Configuration Options menu in the Partition Configuration screen.

Perform the steps in Procedure 33 to review the database parameters.

Procedure 33: Reviewing database parameters

1 Access the Maintenance and Administration main menu.

2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu.

3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.

4 Select **Partition Configuration**.

The system displays the Partition Configuration screen.

5 Select the **Configuration Options** function key

The system displays the Configuration Options menu.

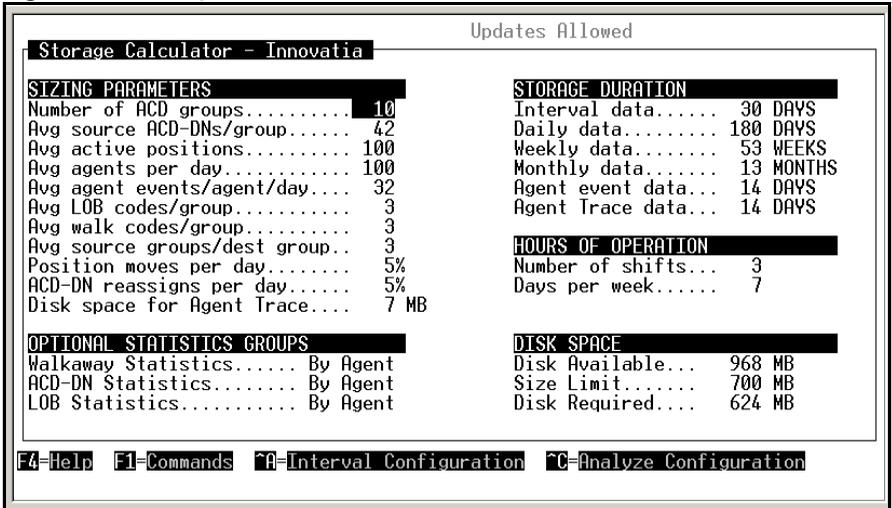
6 Select **Disk Allocation** from the Configuration Options menu.

The system displays the Disk Allocation screen (see Figure 62 on page 221).

7 From the **Disk Allocation** screen, select the **Storage Calculator** function key.

The system displays the Storage Calculator screen (see Figure 63 on page 225).

Figure 63: Storage calculator screen



- 8 Review the parameters.
- 9 Press the **Commands** function key and select **Exit** to return to the Configuration menu.

Changing data storage parameters

You can change data storage parameters with the Storage Calculator. After you adjust the parameters, the system calculates if there is enough disk space in the partition for the database you defined before the database is reconfigured. The system does not let you save the results of this customization process unless the calculated Disk Required value is less than the amount of space available.

After these values are entered and accepted, the historical database is built or reconfigured, based on the given values for the partition. The system ensures that the database configuration values are not exceeded for the number of ACD groups, definable agents, and active agents. When these values are exceeded, the system generates a warning log message, continues to store data in the database, and removes the oldest data from the database.

For data storage parameters and their limits, see Table 13 on page 69.

Perform the steps in Procedure 34 to change the size of the database.

Procedure 34: Changing data storage parameters

1 Access the Maintenance and Administration main menu.

2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu.

3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.

4 Select **Partition Configuration**.

The system displays the Partition Configuration screen.

5 Select the **Configuration Options** function key

The system displays the Configuration Options menu.

6 From the **Configuration Options** menu, select **Disk Allocation**.

The system displays the Disk Allocation screen (see Figure 62 on page 221).

7 From the **Disk Allocation** screen, select the **Storage Calculator** function key.

The system displays the Storage Calculator screen (see Figure 63 on page 225).

8 Change the desired **Data Storage** parameters.

9 Use the **Commands** function key to save and exit (or to exit without saving).

Note: You can allow the system to calculate your data storage parameters by pressing the Analyze Configuration function key. The Analyze Configuration function key allows the Storage Calculator to analyze (and then display) the recommended values for your system based on the data received from the switch and on your system configuration.

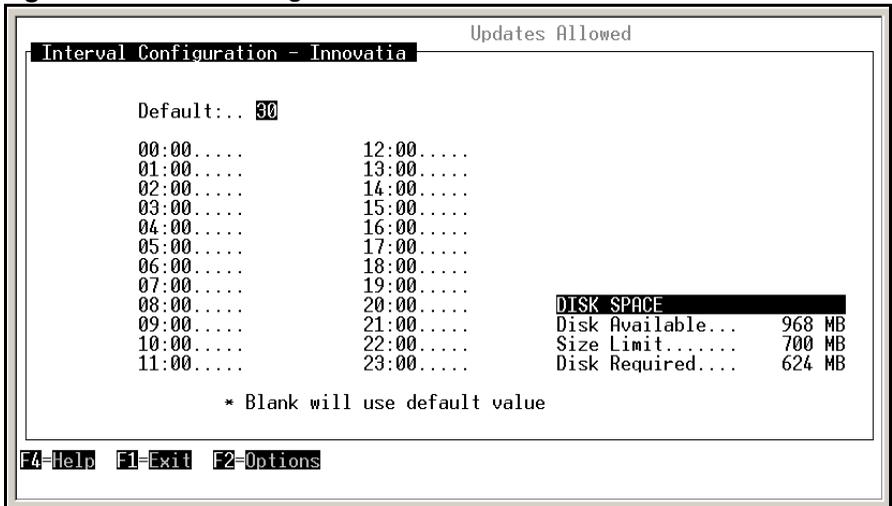
Interval Configuration

Use the Interval Configuration screen to customize the intervals used for each hour of the day. This screen provides customization capabilities for the optional Flexible Intervals feature. If not enabled by the license keycode, this screen is not available on the system.

For local partitions, select the Interval Configuration function key on the Storage Calculator screen (Configuration > Partition Configuration > Configuration Options > Storage Calculator > Interval Configuration) to display the Interval Configuration screen. For NAPs, select the Interval Configuration option from the Configuration Options menu.

Figure 64 shows the Interval Configuration screen.

Figure 64: Interval Configuration screen



The amount of disk space available and the amount required to store data for the selected intervals appears on the Interval Configuration screen under the Disk Space column (see Figure 64). You can edit the Size Limit field in this screen.

The Storage Calculator initially sets the amount of space required based on the default setting (30 minutes) for intervals. Valid default values are 5, 10, 15, 30, and 60 minutes.

Valid interval lengths are 0, 5, 10, 15, 30, and 60 minutes. Leave the field blank if you want to use the default setting.

Note: If you intend to use more frequent intervals (5, 10, or 15 minutes), additional disk space is required.

Issues concerning Interval Configuration lengths

1. If you are using the Networking feature, try to use the same interval lengths on each partition. This allows for more concise data reporting when requesting interval-based reports.
2. Using more frequent intervals (5, 10, and 15) requires more storage disk space. Ensure that your system has adequate disk space to store the requested interval data. Insufficient disk spaces results in some data being discarded.

Connection Parameters

Use the Connection Parameters screen (see Figure 65 on page 230) to enter information relating to a partition connection to a switch or the internal simulator.

Perform the steps in Procedure 35 to access the Connection Parameters screen.

Procedure 35: Accessing the Connection Parameters screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.

The system displays the Configuration main menu.

- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Partition Configuration**.

The system displays the Partition Configuration screen.

- 5 Select the **Configuration Options** function key

The system displays the Configuration Options menu.

- 6 From the **Configuration Options** menu, select **Connection Parameters**.

The system displays the Connection Parameters screen (see Figure 65 on page 230).

Figure 65: Connection Parameters screen

Connection Parameters - Innovatia Updates Allowed

Switch Link : 1 - Simulator - ACDPOOL0

ACD Subpool Name : ACDSP0

F4=Help F1=Commands F2=Options ^V=Erase field

Table 25 describes the fields of the Connection Parameters screen.

Table 25: Connection Parameters screen fields

Parameter	Description
Switch Link	The value is selected from a list of defined links. This field determines the ACD pool or simulator to which the partition connects.
ACD Subpool Name	Selection from a list or manual entry is allowed in this field.
ACD Subpool Password	Administrator provides password for live links. Note: The ACD subpool name and password can be determined from the datafill in the ACDMISSP table on the DMS-ACD. This field is not displayed for a simulator link.

Serial Terminals

The Serial Terminals screen allows serially-connected supervisor terminals to be added, deleted, or modified for a partition in the CC MIS system.

Note: A supervisor can add, change, or delete terminals while the CC MIS software is running.

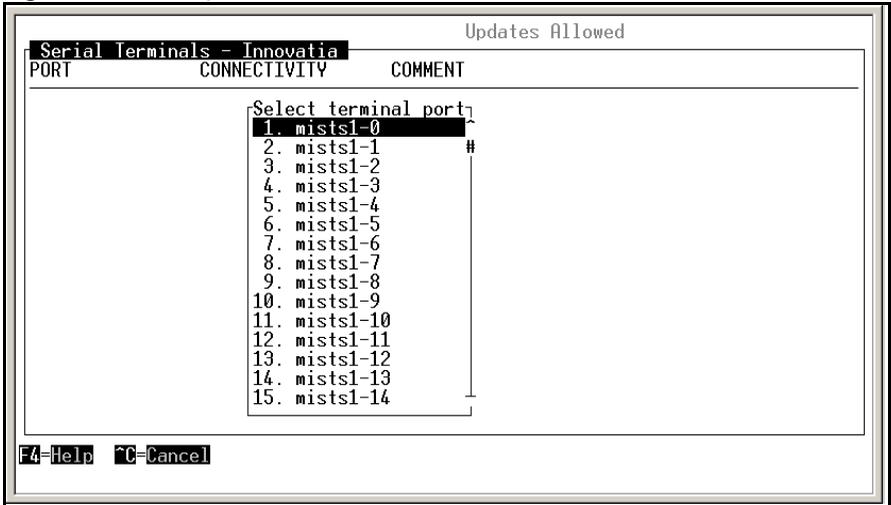
Adding, deleting, or changing a serial terminal

Use the Add or Delete function keys to add or remove a serial terminal. To change a value in one of the fields, highlight the value and press the Options function key. When applicable, select the desired value from the Options pop-up menu.

Perform the steps in Procedure 36 to add a serial terminal.

Procedure 36: Adding a serial terminal

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5 Select the **Configuration Options** function key
The system displays the Configuration Options menu.
- 6 From the **Configuration Options** menu, select **Serial Terminals**.
The system displays the Serial Terminal screen.
- 7 Select the **Add** function key to add a new serial terminal.
The **Select terminal port** pop-up appears (see Figure 66 on page 232).

Figure 66: Adding a serial terminal

- 8 Select the desired terminal and press **<enter>**.

The new selection is added to the Serial Terminals screen.

Note: The baud rate and modem control settings are configured on the terminal server itself; therefore, these options are no longer displayed in CC MIS Release 6.0.

- 9 To add comments that are used to describe the location of the terminal, do the following:
 - a. Highlight the **Comments** field.
 - b. Type the desired comment.

Note: The Comments field is optional.

- 10 Select the **Commands** function key, and then select **Save and Exit** from the menu to save the configuration.

Wallboards

Supervisors use wallboards to display messages. Three types of wallboards are supported: Spectrum, Daktronics, and Generic.

When adding wallboards, you can chain multiple wallboards (up to five) together on one port or assign one wallboard to a port.

To add a wallboard, you must know its device number used as the address for the wallboard, a number assigned to it during manufacturing. To see the address number for Daktronics wallboards, unplug the device from its power source and then plug it in again. For Spectrum wallboards, the address is programmed using the remote keypad (a remote control device).

Constraints

CC MIS supports a maximum of five wallboard devices for each port. These devices can be chained together on a common port or each wallboard can be configured on its own port. Ports that are not assigned to supervisor terminals can be used as wallboard ports.

Wallboards are optional and may not be available on your system.

Adding a wallboard

Perform the steps in Procedure 37 to add a wallboard.

Procedure 37: Adding a wallboard

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.

4 Select **Partition Configuration**.

The system displays the Partition Configuration screen.

5 Select the **Configuration Options** function key.

The system displays the Configuration Options menu.

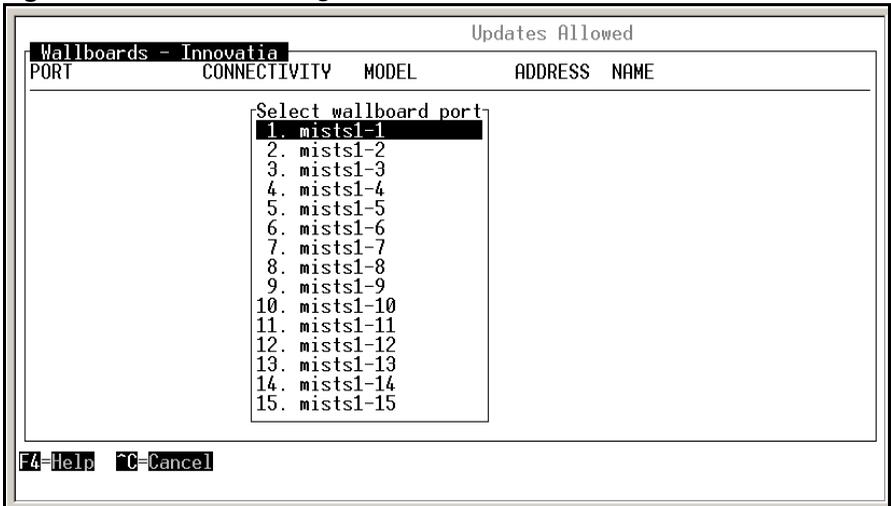
6 From the **Configuration Options** menu, select **Wallboards**.

The system displays the Wallboards screen.

7 On the **Wallboards** screen, select the **Add** function key.

The **Select wallboard port** pop-up appears (see Figure 67).

Figure 67: Wallboard Configuration screen



8 Select the port for the wallboard.

9 Edit the settings in each field, as desired, by highlighting the field and pressing the **Options** function key. The Options menu appears, with valid options for that field. (The connectivity type is not displayed for terminal server ports.)

a. Select the connectivity type (Direct or Modem).

b. Select the model type (Spectrum, Daktronics, and Generic).

- c. Enter the address for the wallboard:
 - Spectrum—two-digit number (01–99 set by remote)
 - Daktronics—a six-digit number (supplied in the wallboard)
 - Generic—not meaningful and is automatically set to 1 by the system
 - d. Press the **Edit Field** function key and enter name in the **Name** field.
 - e. After you enter the name, press the **End Editing** function key.
- 10** Select the **Commands** function key, and then select **Save and Exit** to save the configuration.

Changing the configuration of a wallboard

You can change the configuration of a wallboard or rename a wallboard. Use the steps in Procedure 37 on page 233 to access the Wallboard screen, and then edit the configuration using the Options and Edit Field function keys, as applicable.

Note: To move a wallboard from one port to another, remove the current definition of the wallboard; then add the wallboard definition at the other port using the steps in Procedure 37.

Only one type of wallboard can be used on a port. A total of five wallboards are supported for each port. (Only one generic wallboard for each port is supported.)

Removing a wallboard from the system

Use the Delete function key to remove a wallboard from the system.

Static LAN Terminals

Each partition can have a set of datafilled LAN IP addresses that are connected as supervisor stations for that partition. Use the Static LAN Terminals screen to enter these IP addresses.

The following limitations apply to the Static LAN Terminals screen:

- Two partitions cannot share the same IP address.
- There is no limit to the number of Static LAN Terminal IP addresses that can be defined in this screen. However, the number of active terminals is limited at run time by the Max Supervisor Connections parameter.

Adding LAN Terminals

Perform the steps in Procedure 38 to access the Static LAN Terminals screen to add LAN clients.

Procedure 38: Adding Static LAN terminals

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5 Select the **Configuration Options** function key
The system displays the Configuration Options menu.
- 6 From the Configurations Options menu, select **Static LAN Terminals**.
The system displays the Static LAN Terminals screen.
- 7 Select the **Add** function key.
The Add pop-up menu appears (see Figure 68).

Figure 68: Static LAN Terminals screen (with add text)

Static LAN Terminals - Innovatia Updates Allowed

IP ADDRESS (OR RANGE)	COMMENT
<p>Enter a single IP address for the new terminal to be added or a range of IP addresses in the form:</p> <p> nnn.nnn.nnn.nnn-nnn.nnn.nnn.nnn</p> <p>If a range is entered, only the last component of the IP addresses in the range can be different.</p> <p>Enter IP address (or range): █</p>	

F4=Help

- 8 Enter the IP address or range of IP addresses (see the format shown on the add screen for entering ranges).

Deleting Static LAN Terminals

Perform the steps in Procedure 39 o delete Static LAN Terminals.

Procedure 39: Deleting Static LAN Terminals

- 1 Access the **Static LAN Terminals** screen using Step 1 to Step 6 from Procedure 38 on page 236.
The system displays the Static LAN Terminals screen.
- 2 Highlight the Static LAN Terminal to be deleted, and then press the **Delete** function key.
- 3 Select the **Commands** function key, and then select the **Save and Exit** option to delete the terminal.

Master supervisor privileges

The master supervisors privilege definition is used to disable supervisor privileges on a partition. (The definition default setting is to enable all privileges.) If a supervisor privilege is disabled in the master privilege definition for the partition, that privilege is disabled for all supervisors in that partition. However, individual supervisors can be assigned an override whereby their privileges are not restricted by the master privilege definition.

The master privilege definition is comprised of several screens. The first screen is a menu that you access from the Configuration Options menu in the Partition Configuration screen. This screen lists selections to set privileges in any of the five privilege areas that make up the master privilege definition and a selection to set supervisor overrides.

Perform the steps in Procedure 40 to access the Master Privilege Definition screen.

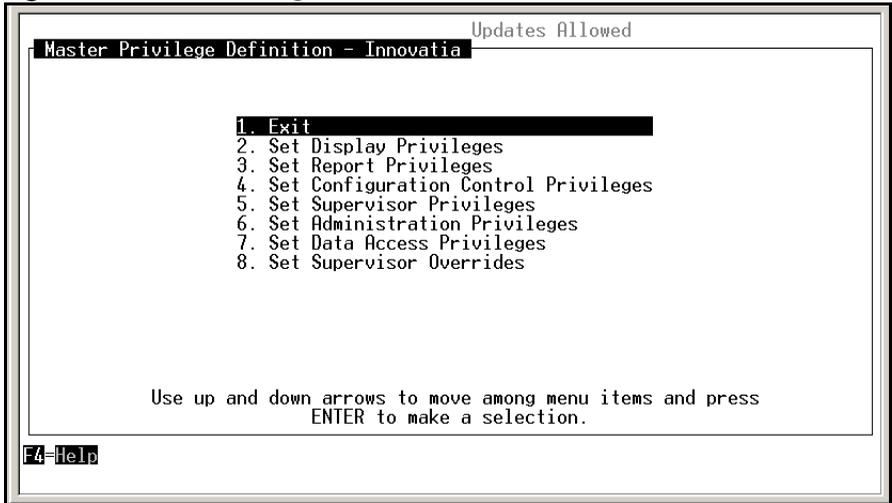
Note: Partitions must be running to access the Master Privilege screen.

Procedure 40: Accessing the Master Privilege screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Updates Rights** to switch to Updates Allowed mode.
- 4 Select **Partition Configuration**.
The system displays the Partition Configuration screen.
- 5 Highlight the desired partition.
- 6 Select the **Configuration Options** function key.
The system displays the Configuration Options menu.
- 7 From the **Configuration Options** menu, select **Master Privilege Definition**.

The system displays the **Master Privilege Definition** screen (see Figure 69).

Figure 69: Master Privilege Definition screen



- 8 When you select any option on the Master Privilege Definition screen, a secondary screen appears. The Master Privilege Definition screen is used to set the appropriate privileges or supervisor overrides. The privileges and overrides that are available are:
- Display Privileges (see page 240)
 - Report Privileges (see page 241)
 - Configuration Control Privileges (see page 242)
 - Supervisor Privileges (see page 243)
 - Administration Privileges (see page 244)
 - Data Access Privileges (see page 245)
 - Supervisor Overrides (see page 246)

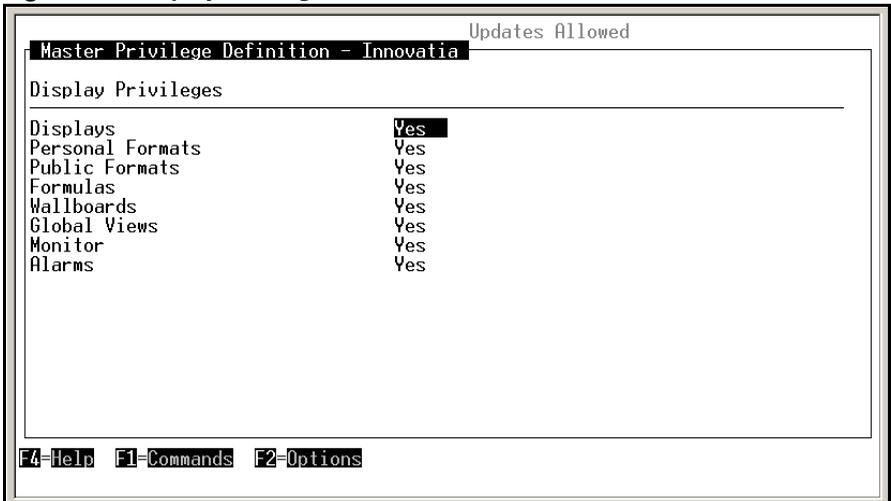
Display Privileges

Figure 70 shows the Display Privileges screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Note: The Alarms privilege appears when the SNMP option is enabled for the partition.

Figure 70: Display Privileges screen

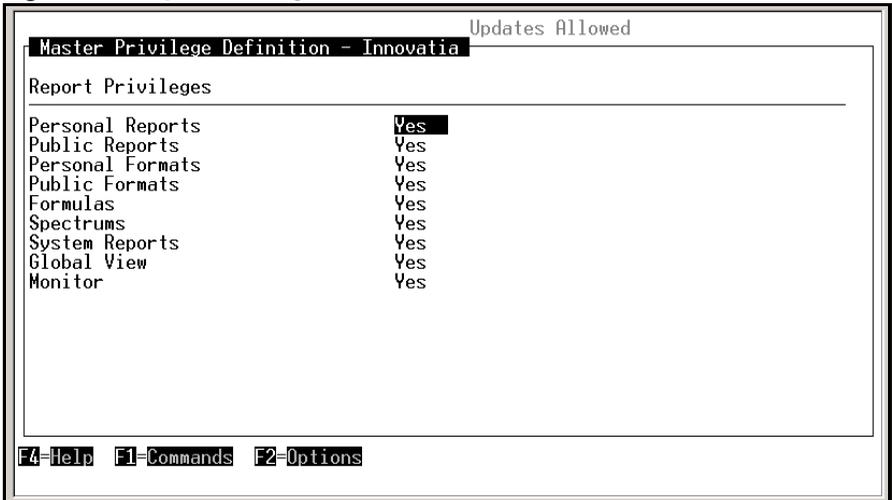


Report Privileges

Figure 71 shows the Report Privileges screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Figure 71: Report Privileges screen

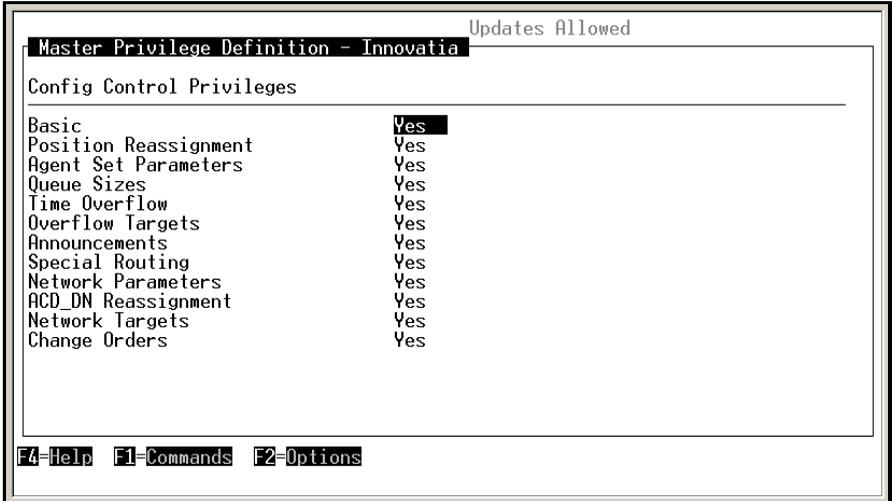


Configuration Control Privileges

Figure 72 shows the Config Control Privileges screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Figure 72: Configuration Control Privileges screen

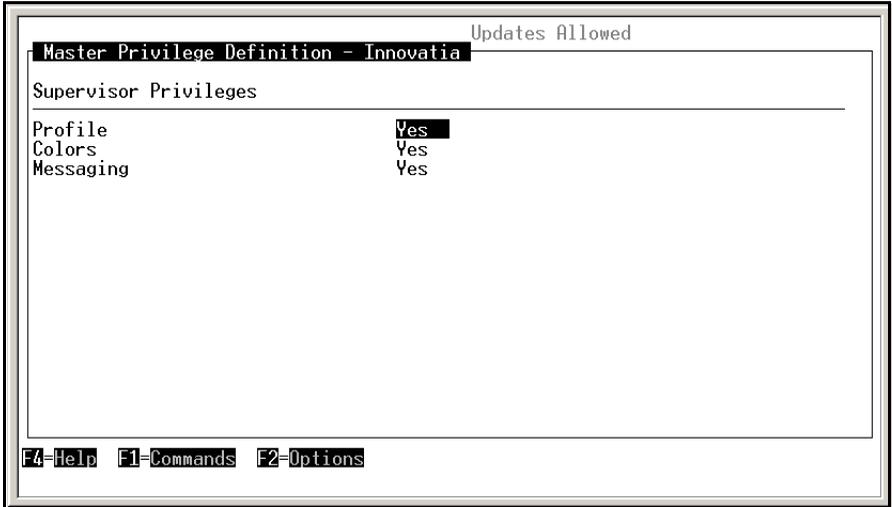


Supervisor Privileges

Figure 73 shows the Supervisor Privileges screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Figure 73: Supervisor Privileges screen

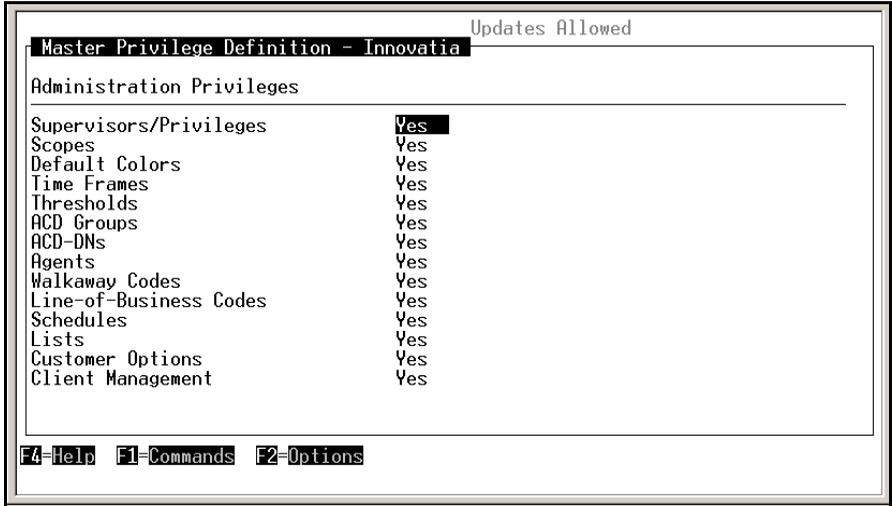


Administration Privileges

Figure 74 shows the Administration Privileges screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Figure 74: Administration Privileges screen

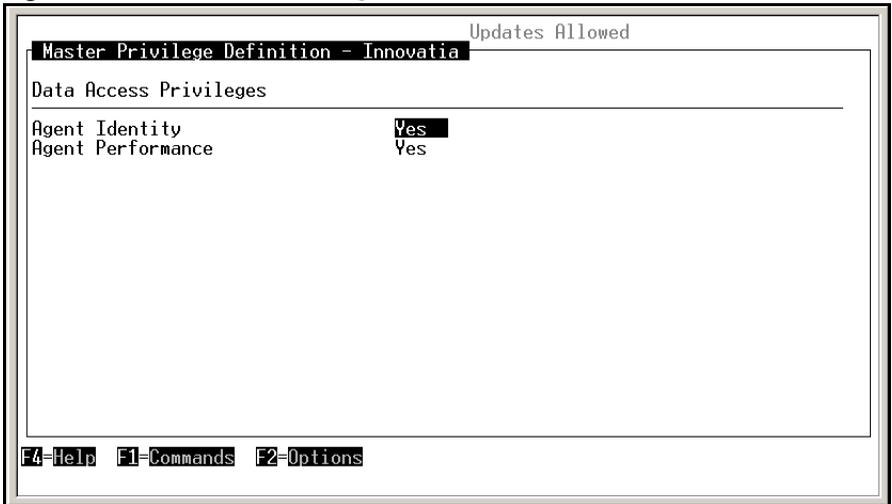


Data Access Privileges

Figure 75 shows the Data Access Privilege screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Figure 75: Data Access Privilege screen



Supervisor Overrides

Figure 76 shows the Supervisor Overrides screen.

The commands available in this screen are Exit and Save and Exit. The values for each option on this screen are Yes and No.

Supervisor IDs must first be defined in Supervisor Definition (in the CC MIS Supervisor Interface) in order for them to appear on the Supervisor Overrides screen. This screen displays all supervisors that are currently defined.

You cannot add or delete supervisor IDs in this screen. Supervisors can be assigned an override so that their privileges are not restricted by the master privilege definition.

Figure 76: Supervisor Override screen

SUPERVISOR NAME	ID	MASTER OVERRIDE
Supervisor 1	1	No
Supervisor 2	2	No
Administrator 11	11	No
Administrator 22	22	No
raj	23	No
raj	30	No
stest	100	No
Rae Lynn O'Keefe	9000	No
Innovatia 1	9001	No
Innovatia 2	9002	No

F4=Help F1=Commands F2=Options

Table 26 lists the field descriptions for the Supervisor Overrides screen.

Table 26: Supervisor Overrides field descriptions

Field	Description
Supervisor Name	The name of the supervisor (as defined in the Definitions Database).
ID	The ID of the supervisor (as defined in the Definitions Database).
Master Override	Whether the supervisor has master privileges. The values for this field are: <ul style="list-style-type: none">■ No—Privileges are restricted by the master privilege definition (default).■ Yes—Privileges are not restricted by the master privilege definition.

Partition Startup and Shutdown

You can use the following two screens to change the status of a partition:

- Partition Startup and Shutdown (see Figure 77 on page 248)
- Partition Configuration (see Figure 78 on page 249)

You can change the state of a partition by specifying either Running or Stopped.

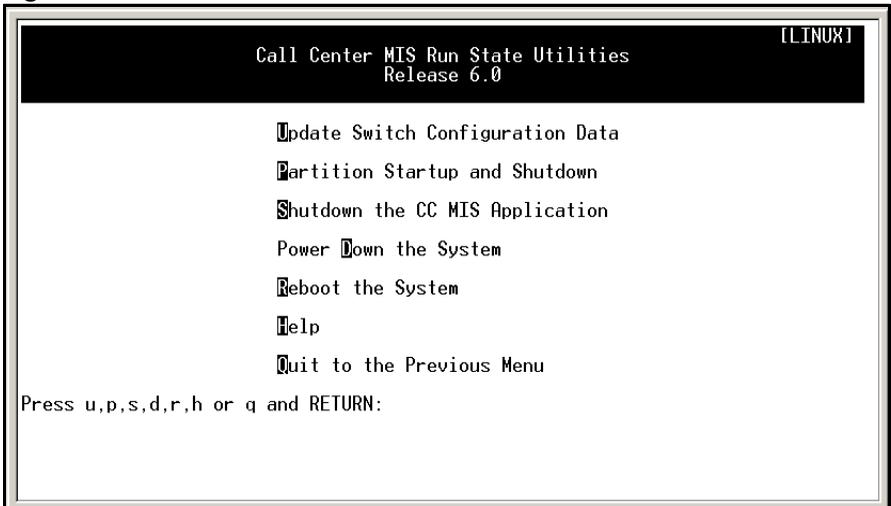
Perform the steps in Procedure 41 to access the Partition Startup and Shutdown screen.

Procedure 41: Accessing the Partition Startup and Shutdown screen and changing the state of a partition

- 1 Access the Maintenance and Administration main menu.
- 2 Type **r** to access the **Run State Utilities** menu.

The system displays the Run State Utilities menu (see Figure 77).

Figure 77: Run State Utilities menu



- 3 Type **p** to access the **Partition Startup and Shutdown** screen.

The system displays the Partition Startup and Shutdown screen (see Figure 78).

Figure 78: Partition Startup and Shutdown screen

PARTITION NAME	MODE	STATE	ID
Innovatia	Training	Running	1
Steve	Training	Running	2
Test	Setup		3

F4=Help F1=Exit F2=Options

- 4 Highlight the desired partition.
- 5 Press the **Options** function key to display the Options pop-up menu.
- 6 From the Options pop-up menu, select the desired state (Running or Stopped) for the partition.
- 7 If the CC MIS partition is running, the system prompts for confirmation before changing the state (to stopped) of the partition (see Figure 79 on page 250).

- Type **y** to stop the selected partition.
- Type **n** if you do not want to stop the selected partition.

If the CC MIS partition is stopped, the system prompts for confirmation before changing the state (to running) of the partition (see Figure 80 on page 250).

- Type **y** to start the selected partition.
- Type **n** if you do not want to start the selected partition.

Figure 79: Confirmation before stopping a partition

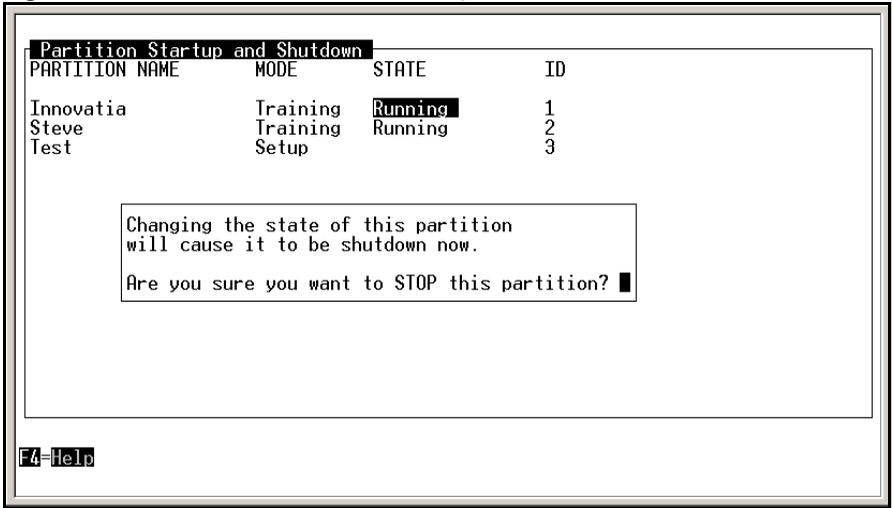
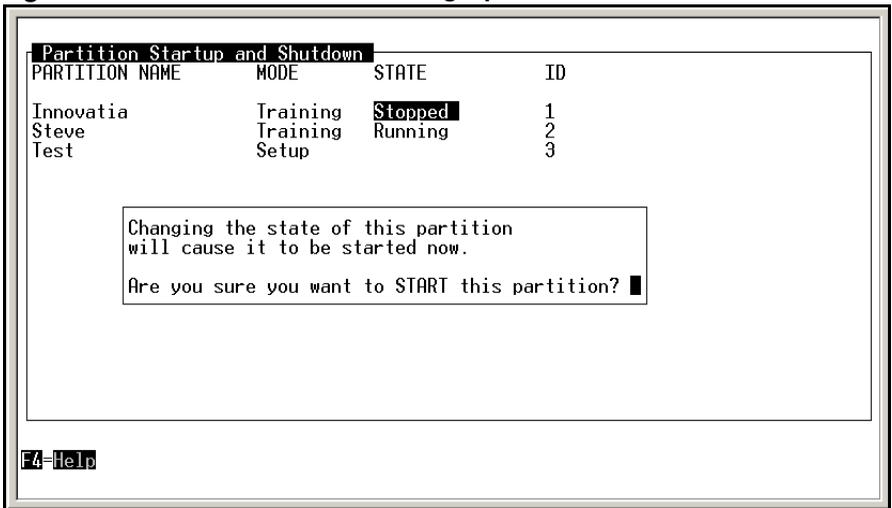


Figure 80: Confirmation before starting a partition



Chapter 11

Networked CC MIS

In this chapter

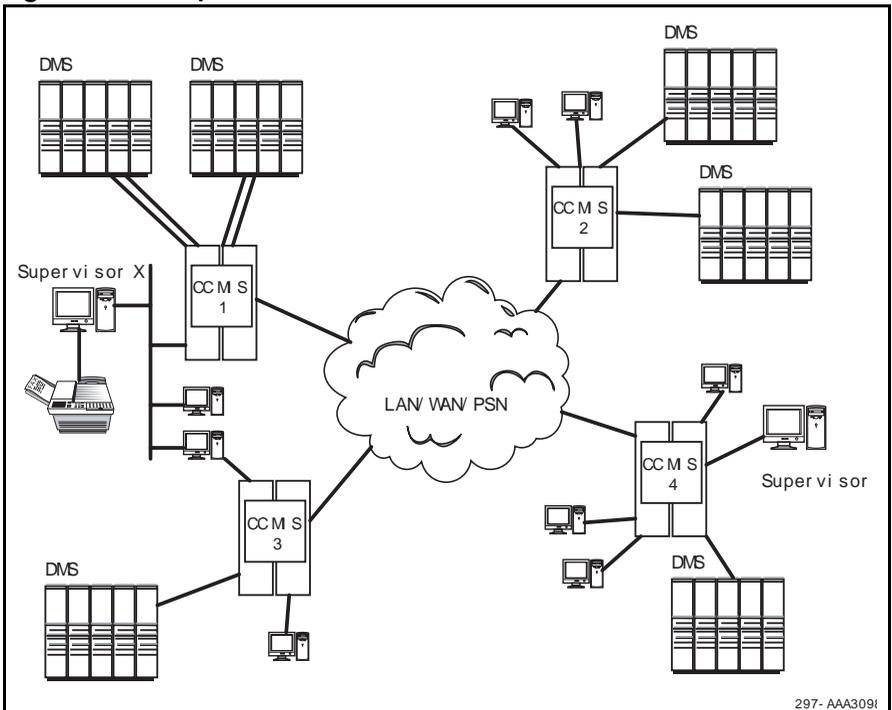
Introduction	252
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Introduction

This chapter presents information about how to configure components for a CC MIS network. To establish a network, the Networking feature must be enabled in your license keycode.

CC MIS allows separate CC MIS systems to be networked. Supervisors can view or consolidate real-time or historical data from one or more local partitions in the network. Figure 81 illustrates a high-level view of the Network feature.

Figure 81: Example of Networked CC MIS



297- AAA309I

Key terms

Table 27 defines the terms used throughout this chapter.

Table 27: Terms used in networked CC MIS (Part 1 of 2)

Term	Definition
Network Access Partition (NAP)	<p>A partition that provides consolidated access to one or more local partitions in the network.</p> <p>Note: NAPs can only exist on a CC MIS system whose license keycode allows at least one NAP to be defined.</p>
Local Partition	<p>A partition that provides access to local data only.</p>
Network	<p>A collection of nodes. Depending on the type of network (physical or virtual), the nodes can be the actual servers or partitions.</p>
Physical Network	<p>A network of CC MIS systems.</p> <p>Note: All systems must be running the same CC MIS software release (or a compatible release). The IP addresses of the host systems are specified in the Physical Network screen.</p> <p>With CC MIS Release 6.0, a network can be comprised of CC MIS Release 6.0 or CC MIS Release 5.2 systems or both. However, in a mixed-release network, different versions of the CC MIS client must be used to access the different versions of the CC MIS servers.</p>
Virtual Network	<p>A network comprised of local partitions that can be accessed by the NAP (defined in the Virtual Network screen).</p>

Table 27: Terms used in networked CC MIS (Part 2 of 2)

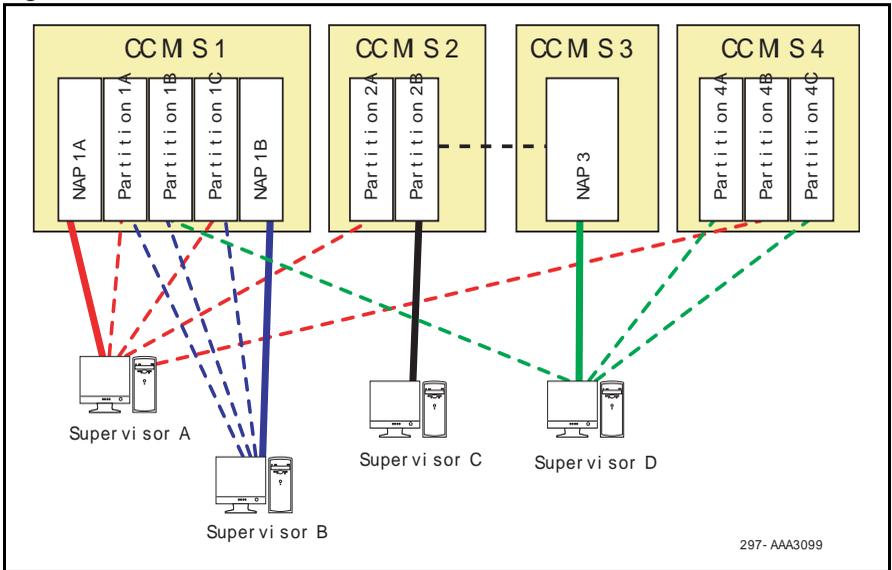
Term	Definition
Network Node	A physical node with Networked CC MIS capabilities.
Physical Node	A physical CC MIS system.
Virtual Node	A partition in a CC MIS Virtual Network. This is a local partition.
System (Node)	The CC MIS host platform (computer).

Overview of a network

Figure 82 depicts an application of the Networked CC MIS feature. There are four nodes, each running separate CC MIS systems with one or more partitions defined. There are four supervisors, three (supervisors A, B, and D) that have a direct connection to a NAP and one (supervisor C) that connects only to a local partition.

Note: Solid lines indicate direct connections. Dashed lines indicate the ability of NAP to view partitions defined in the Virtual Network for the NAP.

Figure 82: Network Overview



Views in the network

Based on the configuration in Figure 82, each supervisor can view the following partitions:

- Supervisor A—Through NAP 1A can view Partition 1A, Partition 1C, Partition 2A, and Partition 4B.

- Supervisor B—Through NAP 1B can view Partition 1A, Partition 1B, and Partition 1C.
- Supervisor C—Is a local supervisor and can only view Partition 2B.
- Supervisor D—Through NAP 3 can view Partition 1B, Partition 4A, and Partition 4C.

Steps for establishing a network

The following are the basic steps used to establish a network:

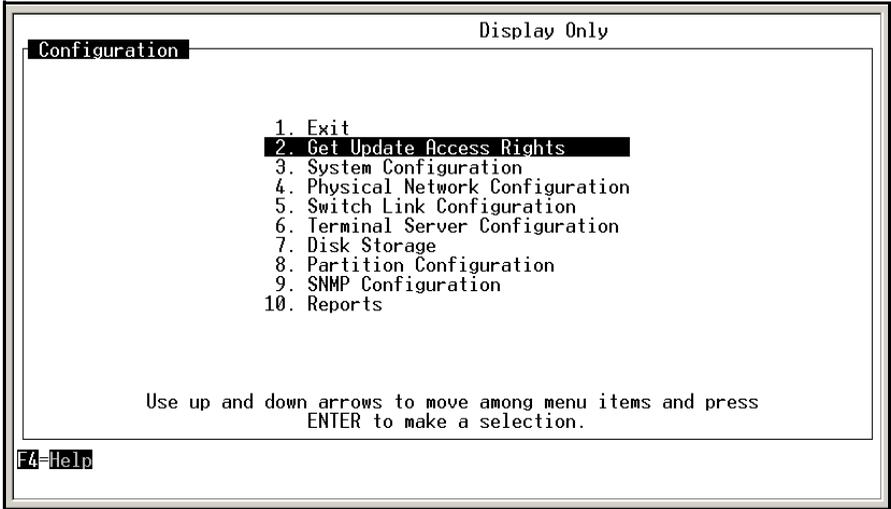
1. Ensure that the Network feature for the CC MIS system is enabled.

Note: This feature is enabled by the keycode entered into the system. The two customer options that enable this feature are Networking and Maximum NAPs. The Networking option is required on all nodes in the network, while a non-zero Maximum NAPs value must be present on any node that defines a NAP partition.

2. Set up the network configuration using the System Configuration command from the Configuration menu. (Specify a CC MIS network name.) You must perform this step on all nodes in the network.
3. Define the physical network using the Physical Network Configuration command. (Identify all of the CC MIS systems to be included the network.) You must perform this step on all nodes in the networks.
4. Define local partitions (see “Local Partitions” on page 197).
5. Define the NAP (using Partition Configuration), and then specify all of the virtual nodes (local partitions) that the NAP can access in the network using the Virtual Network Configuration option from the Configuration Options menu.
6. Define the intervals for the NAP by accessing the Interval Configuration screen (if enabled) from the Configuration Options menu (see “Local Partitions” on page 197).

The Configuration menu contains the commands needed to establish a network. Figure 83 shows the Configuration menu.

Figure 83: Configuration menu



System Configuration

The System Configuration screen contains system-wide data. This is the first screen you access when you set up a new system. Information contained in this screen includes the system name, CC MIS network name, and the backup directory. See Procedure 10 on page 133 to access the System Configuration screen.

Security for a networked CC MIS is accomplished using a network name. The Network Name field was added to System Configuration to support the definition and security of the network.

ATTENTION

All nodes belonging to a particular network must have the same Network Name.

The Network Name received in a message is examined to determine if a message should be processed. Messages that are received without a correct Network Name are discarded.

Note: The Network Name field appears when the **Networking** option is enabled. The system must be shut down to edit this CC MIS Network Name field. See Procedure 10 on page 133 in the "System Configuration" section to set the CC MIS Network Name.

Physical Network Configuration

Various components of the CC MIS need to know the node ID and address (IP address or host name) of CC MIS systems within its physical network. Nodes that have NAP Partitions that gather information from other nodes must use this screen to specify the addresses of those nodes in the Physical Network Configuration.

The views of the physical network can vary from node to node depending upon whether NAP partitions are used, and to which remote nodes the local node has access.

Selecting Physical Network Configuration from the Configuration main menu displays the Physical Network Configuration screen.

Procedure 42: Accessing the Physical Network Configuration

- 1** Access the Maintenance and Administration main menu.
- 2** Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3** Select **Physical Network Configuration**.

The system displays the Physical Network Configuration screen (see Figure 84 on page 260) only if the System Name and CC MIS Network Name are both configured in the System Configuration screen (see Procedure 10 on page 133).

Figure 84: Physical Network Configuration screen

Physical Network Configuration			Updates Allowed
PHYSICAL NODE NAME	NODE ID	ADDRESS	
Linux	0	47.104.48.33	
LNK1750	1	47.104.48.34	

F4=Help F1=Exit F3=Edit field ^C=Add Node ^D=Delete Node

The local node (Node ID 0) is listed as part of the physical network configuration. Initially, the Node Name and Address are collected by the system configuration. (The address field cannot be changed.)

Note: When the system is down, the System Down text string appears in the upper left hand corner of the screen. The string appears in all configuration screens until the system starts.

Table 28 describes the fields in the Physical Network Configuration screen.

Table 28: Physical Network Configuration screen fields

Field	Description
Physical Node Name	A descriptive name for the node. This name is not associated with the System Name in the System Configuration screen.
Node ID	A 1 to 2-digit ID used by CC MIS to identify a physical node on the network. This ID is assigned by the system and cannot be modified.
Address	The IP address or hostname of the node.

Table 29 describes the function keys associated with the Physical Network Configuration screen.

Table 29: Physical Network configuration function keys (Part 1 of 2)

Key	Description
Exit	Exits the current screen.
Edit Field	Allows you to edit or modify information in the selected field.
Add Node	<p>Adds a node to the Physical Network. Displays a window prompting for the information for the new node.</p> <p>Note: If the maximum number of nodes has been reached, the Add Node key does not appear.</p>

Table 29: Physical Network configuration function keys (Part 2 of 2)

Key	Description
Delete Node	<p>Deletes a node from the Physical Network. Displays a list of Physical Nodes from which to select a node to be deleted.</p> <p>A confirmation screen appears before the selected node is deleted.</p> <p>Note: The Delete Node key is available only when nodes are defined.</p>

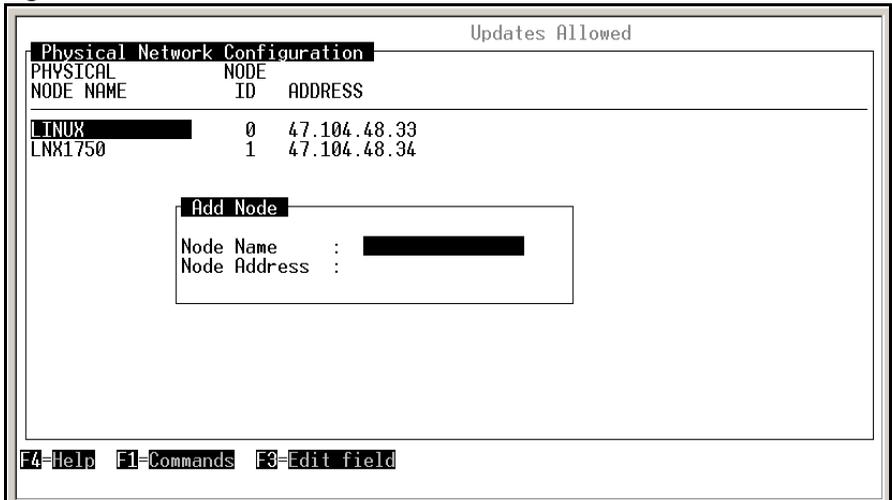
Adding and deleting nodes

Procedure 43: Adding a node to the physical network

- 1 To add a node to the physical network, select the **Add Node** command (function key).

The **Add Node** pop-up menu appears (see Figure 85).

Figure 85: Add Node menu



- 2 Enter the **Node Name** and **Node Address**.
- 3 After you specify the node name and address, select the **Commands** function key.
- 4 Select the **Submit** option to add the node or **Cancel** to cancel the add action.

Figure 86 on page 264 shows the Add Node Commands menu.

Figure 86: Add Node Commands menu

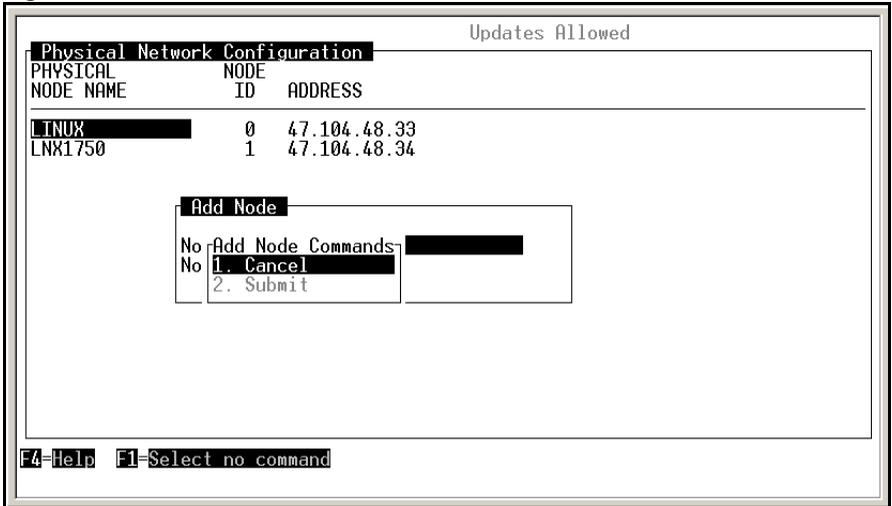


Table 30 lists the commands in the Add Node Commands menu.

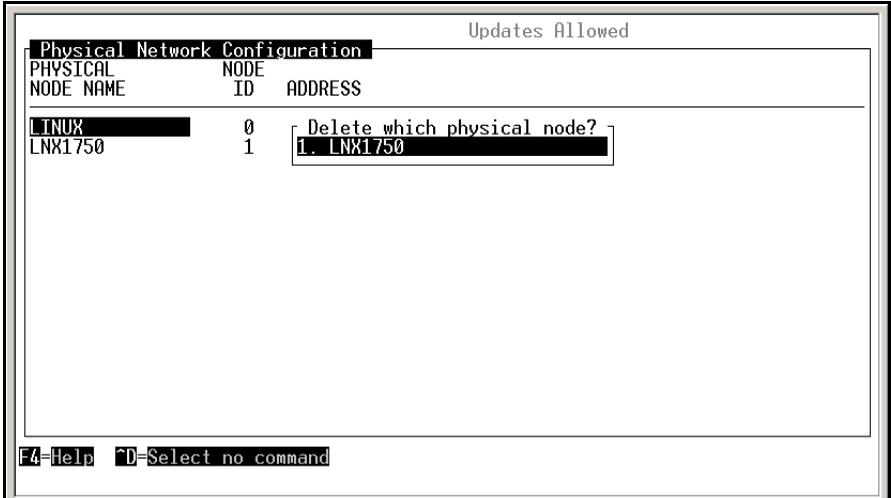
Table 30: Add Node commands

Command	Description
Cancel	Cancels the Add Node procedure
Submit	Submits and adds the node to the Physical Network Configuration with the entered name and address, and then exits the Add Node procedure

Procedure 44: Deleting a node from the physical network

- 1 To delete a node from the physical network, select the **Delete Node** command (function key).

The **Delete which physical node?** menu appears (see Figure 87).

Figure 87: Delete Node menu

- 2 Select the node to be deleted from the list of nodes.

ATTENTION

The following are issues concerning the deletion of a physical node:

- A physical node cannot be deleted if it is still referenced in a virtual network configuration (on this system).
- Deleting a physical node does not affect Physical Network or Virtual Network configurations on other CC MIS systems.

Partition Configuration

When the network feature is enabled, you can define two types of partitions: Local and Network Access Partition (NAP).

- Local partitions are partitions located on the physical node that store MIS data (see “Local Partitions” on page 197).
- NAPs are partitions that are used to provide consolidated network-wide access to a set of local partitions in the network.

NAPs can be added only if the Networking feature is enabled and the maximum number of NAPs is set greater than zero. Unlike local partitions, NAPs do not receive data from switch, do not store data, and therefore, do not require any data storage parameters. A NAP must be defined to access network MIS data. NAPs can be added only to a Network Node. This chapter describes the process for defining NAPs and establishing networks.

Figure 88: Partition Configuration screen

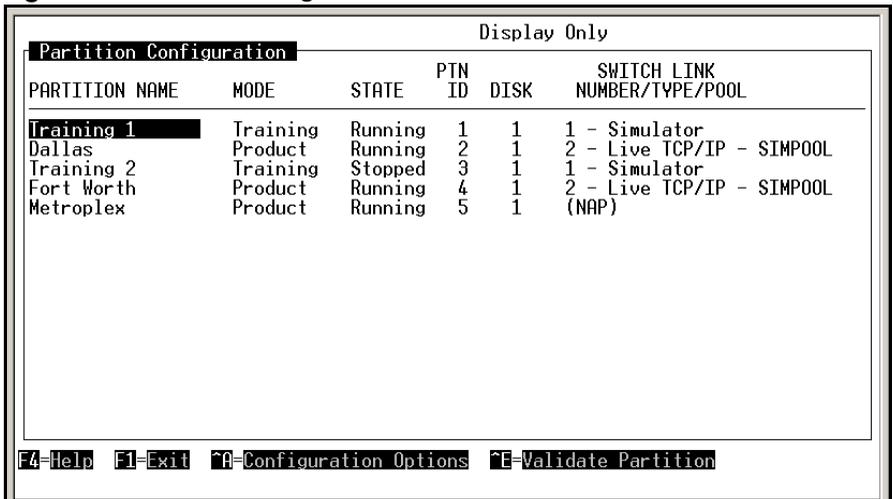


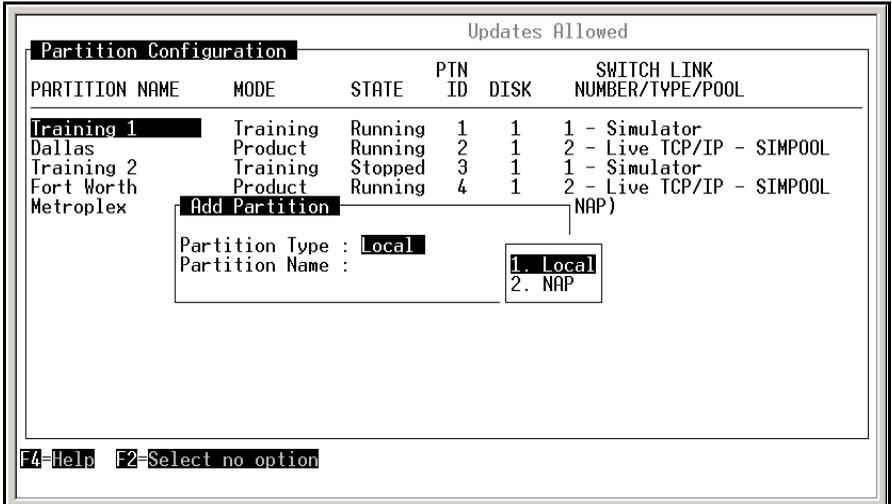
Table 31 describes the function keys available on the Partition Configuration screen.

Table 31: Function key commands

Key	Description
Exit	Exits the current screen.
Add Partition	<p>Adds a partition. A window is displayed to select the partition type (Local or NAP) and to enter the partition name.</p> <p>Note: If NAPs are not allowed on the system (Maximum NAPs = 0), the partition type field does not appear in the pop-up window, and the partition name is input as described in Chapter 7.</p>
Delete Partition	<p>Deletes a partition. A window containing a list of partitions is displayed from which the partition to be deleted is selected. A confirmation window is displayed before the partition is deleted.</p> <p>Note: The Delete Partition key is available only if a partition has been configured.</p>

Figure 89 shows the Partition Configuration screen with the Add Partition window and Partition Type pop-up menu.

Figure 89: Add Partition options menu

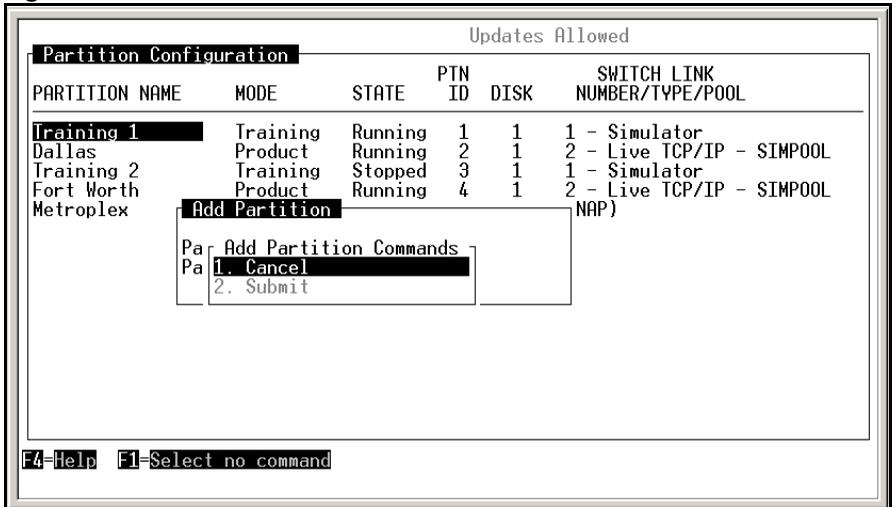


Note: Select Local or NAP partition type from the pop-up menu. If the limits for both partition types have been reached, the Add Partition function key does not appear on the screen. If the limit for one partition type (for example, NAP) has been reached and the other (Local) has not, the function key is displayed.

Note: The Partition Type in the Add Partition window is set to display as the default the partition type that has not reached its limit. (The other type appears dimmed in the Partition Type options list.) If neither partition limit has been reached, the default type is set to Local.

Figure 90 on page 269 shows the Partition Configuration with the Add Partition and the Add Partitions Commands menus displayed.

Figure 90: Add Partition and Add Partition Commands menus



The commands in the Add Partition Commands menu are listed in Table 32.

Table 32: Add Partition Commands

Command	Description
Cancel	Cancels the Add Partition procedure
Submit	Adds the partition to the Partition Configuration and exits the Add Partition procedure

Perform the steps in Procedure 45 to access the Partition Configuration menu and add a NAP.

Procedure 45: Adding a NAP

- 1 Access the Maintenance and Administration main menu.
- 2 Type **c** to access the Configuration main menu.
The system displays the Configuration main menu.
- 3 Select **Get Access Update Rights** to switch to Updates Allowed mode.

4 Select **Partition Configuration**.

The system displays the Partition Configuration screen.

5 Select the **Add Partition** function key.**6** Select the **Options** functions key to display the Local/NAP pop-up menu and select **NAP** as the Partition Type.**7** Enter a **Partition Name** for the partition to be added. The name can be up to 16 characters in length.**8** Select the **Commands** function key.**9** Select **Submit** to save the NAP.

Note: A NAP can only be set to Setup or Product mode.

Virtual Network Configuration

Use the Virtual Network Configuration screen to define which Local Partitions can be accessed from a NAP partition. These partitions comprise the virtual network with which the NAP is associated.

Figure 91 shows the Virtual Network Configuration screen.

Figure 91: Virtual Network Configuration screen

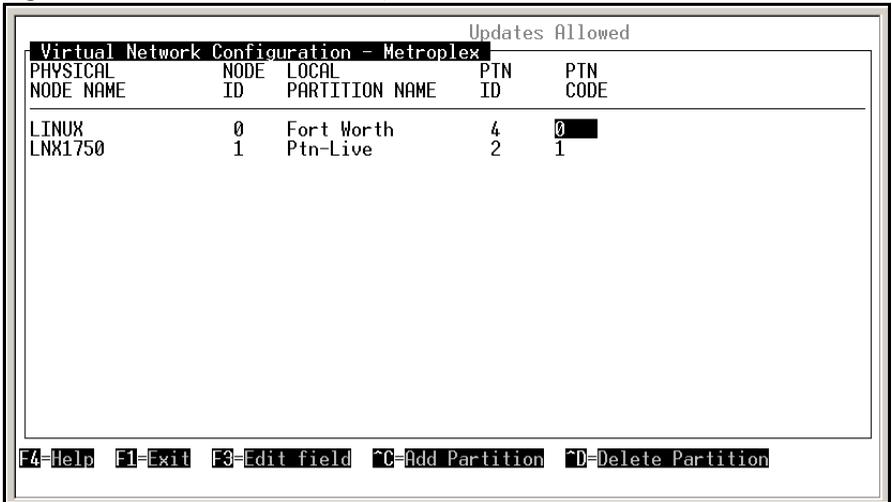


Table 33 describes the fields on the Virtual Network Configuration screen.

Table 33: Virtual Network Configuration field descriptions

Field	Description
Physical Node Name	The name of a Physical Node.
Physical Node ID	The ID of a Physical Node.
Local Partition Name	The name of the Local Partition on the Physical Node that can be accessed through the NAP.
Local Partition ID	The ID of the Local Partition.
Partition Code	This is an editable field used to enter a four character alphanumeric partition identifier. Note: This identifier is used in a network to create unique agent IDs, subgroups, and position IDs.

Table 34 describes the function keys on the Virtual Network Configuration screen.

Table 34: Virtual Network Configuration function keys (Part 1 of 2)

Key	Description
Exit	Exits the current screen.
Add Partition	Adds a partition to the virtual network. This command displays a list of Physical Node/Local Partition pairs from which you can select a partition to add. Partitions that have already been selected appear dimmed.

Table 34: Virtual Network Configuration function keys (Part 2 of 2)

Key	Description
Delete Partition	Deletes a partition from the virtual network. This command displays a list of Physical Node/Local Partition pairs from which to select a partition to delete. A prompt is displayed before the partition is deleted. This key does not appear if no partitions currently exist in the virtual network.

Figure 92 shows the Add which partition to network? pop-up menu.

Figure 92: Add Partition to Network screen

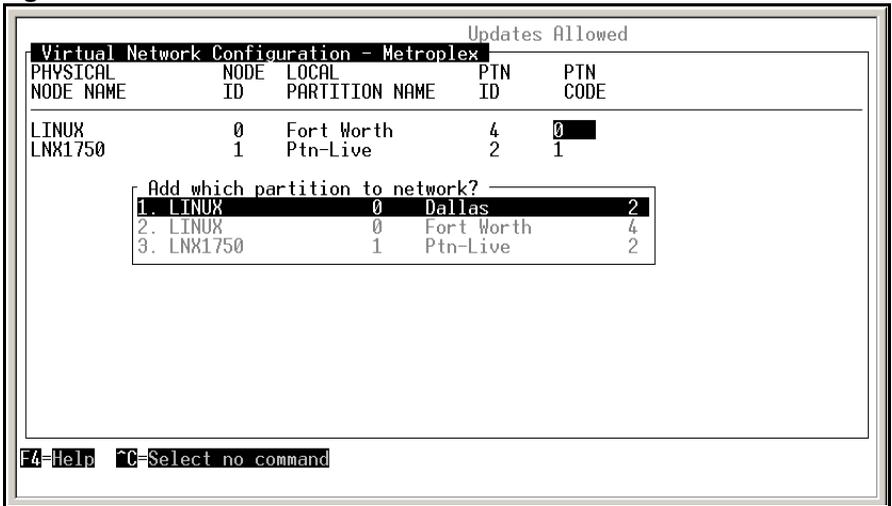


Figure 93 shows the Delete which partition from network? pop-up menu.

Figure 93: Delete Partition from Network screen

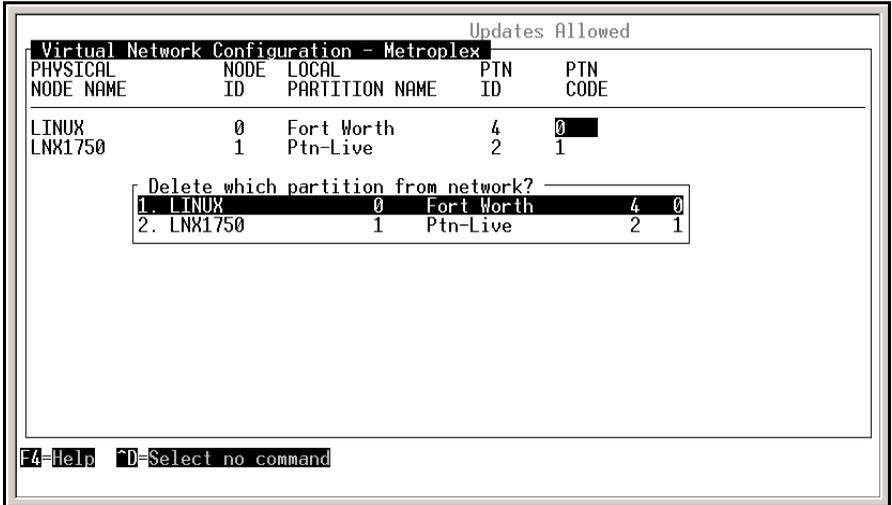
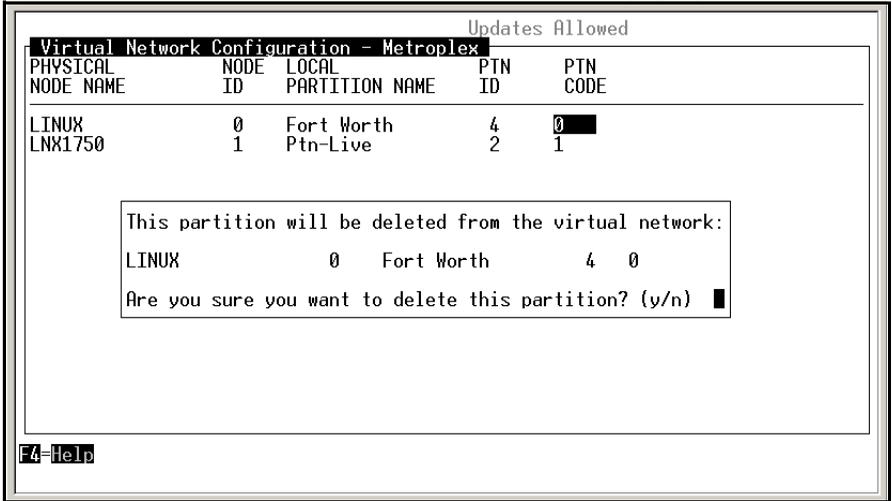


Figure 94 shows the Confirmation pop-up menu for the selected partition that is to be deleted.

Figure 94: Delete Partition from Network confirmation pop-up



Deleting a partition

Deleting a partition in a network does not delete occurrences of that partition in Virtual Network Configuration on other nodes in the network or on the NAPs on the local node.

Note: This configuration information is not automatically deleted because it is possible that nodes can be disconnected or down during configuration changes.

The following conventions are used when the partition name for a partition on a remote node cannot be determined:

- If the partition has been deleted, the partition name appears as (DELETED).
- If the physical node is down, any partition names associated with the node appear as (UNAVAILABLE).

Perform the steps in Procedure 29 on page 211 to access the Partition Configuration menu and delete a partition.

Chapter 12

Monitoring system functions

In this chapter

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Introduction

CC MIS has a number of diagnostic tools available through the Maintenance and Administration interface. This chapter provides procedures for the utilities available through the CC MIS Diagnostics menu.

Accessing the Diagnostics menu

Perform the steps in Procedure 46 to access the Diagnostics menu.

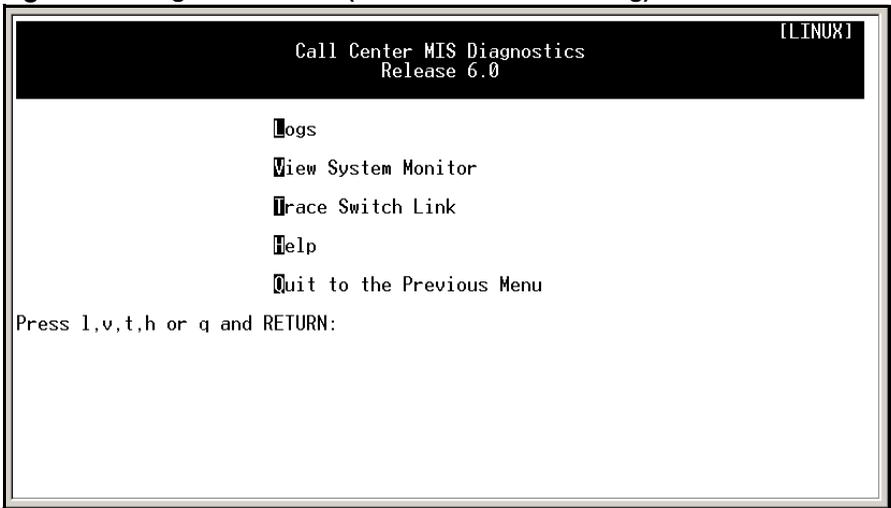
Procedure 46: Accessing the Diagnostic menu

- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics menu (see Figure 95).

Note: Figure 95 appears when CC MIS is running and when not dialed in remotely.

Figure 95: Diagnostics menu (when software is running)



Logs

The CC MIS system keeps many log files and these log files are available through the Diagnostics > Logs screen. CC MIS maintains the following log types:

- System log—This log contains log messages generated by the CC MIS system. It contains informational and system error logs.
- Maintenance log—This log contains log messages generated by the Maintenance interface.
- Install log—This log contains information and errors pertaining to the installation process.
- Backup log—This log contains errors and information generated during the backup process.
- Restore log—This log contains information and errors generated during the restore process.
- Import log—This logs contains errors and information generated during the import process.

Perform the steps in Procedure 47 to select a log file.

Procedure 47: Selecting a log file

- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the **Diagnostics** menu.

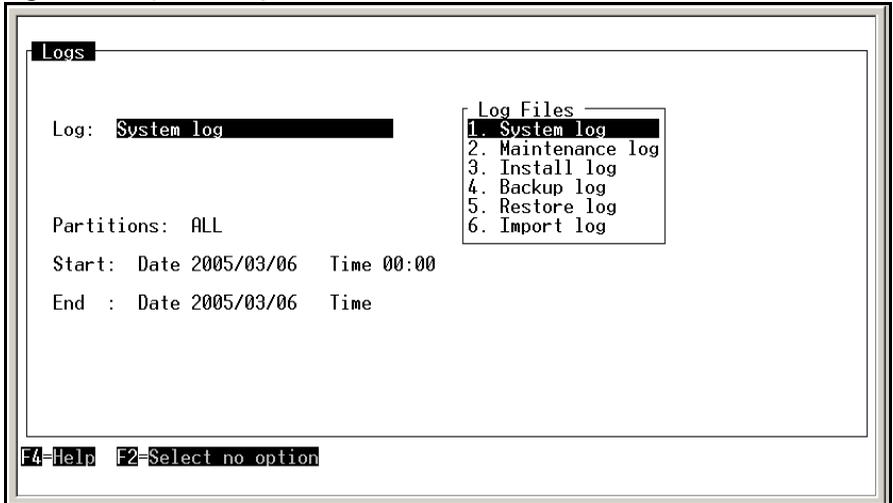
The system displays the Diagnostics screen.

- 3 Type **l** to display the **Logs** screen.

The system displays the Logs screen and the System Logs are automatically displayed. (The System Logs are the default.)

- 4 Press the **Options** function key.

The system displays the Log Files menu (see Figure 95 on page 278).

Figure 96: System Logs screen

5 Select a log file and press **<enter>**.

The choices are:

- System log
- Maintenance log
- Install log
- Backup log
- Restore log
- Import log

Table 35 defines the fields on the Logs screen.

Table 35: Logs screen fields

Parameter	Description
Log	Displays the name of current or selected log file. Allows a different log file to be selected using the Options function key.
Partitions	Used to select log messages for viewing or printing based on the partition with which the message is associated. The list of partitions can include one or more partition numbers or ranges separated by spaces. (For example, 0 2-5 7 12-14 ALL can be used to select all partitions.) Note: The base partition is zero.
Start Time and Date	The starting range (date and time) for the log messages to be included.
End Time and Date	The end range (date and time) for the log messages. Messages occurring after this date and time are not included.

Viewing a log

You can use the Commands menu to invoke the View command and view the selected log file. The System Log allows you to enter a date and time, and only those logs within the entered date and time range are expanded and viewed. It also allows selection of a partition or all partitions.

Perform the steps Procedure 48 to view a log.

Procedure 48: Viewing a log

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Type **l** to display the Logs screen.

The system displays the Logs screen and the System Logs are automatically displayed.

4 Press the **Options** function key.

The system displays the list of available logs files.

5 Select a log and press **<enter>**.

6 Use the **Edit field** function key to specify the partitions and start and end time ranges.

7 Press the **Commands** function key.

The system displays the commands available for selected log file.

8 Select the **View** command and press **<enter>**.

The system displays the viewer screen for the selected log.

9 When you finish viewing the log file, select the **Exit** function key to return to the Logs screen.

While viewing a log, you can perform a search on a string or expression contained in the log by pressing the Search key. When Search is selected a pop-up window appears, allowing you to enter the following information:

- the string or regular expression to search for
- whether the search is case sensitive (case insensitive is the default)
- whether you want to do a text search or a regular expression search (text search is the default)
- the search options (these include search forward from cursor, search backward from cursor, search forward from top of file [default], and search backward from bottom of file)

The commands available when using the search option are Abort (default) and Search.

- Abort returns you to the log viewer screen and no search is performed.
- Search initiates the search with the parameters the you specified.

After a search is complete, the Search Again key is activated in the log viewer screen. This option allows you to continue the previously performed search.

Monitoring a log

You can use the Monitor command to monitor the System Log and the Maintenance Log as messages are received.

Note: The Monitor command is available only for the System Log or Maintenance Log. It is not available for the Install, Backup, Restore, or Import logs.

If the CC MIS system has discontinued logging due to the file size restrictions, this command allows you to view the log messages that are being generated, but the messages are not logged in the System Log file.

The Monitor command displays the last few logs on the screen and continues to monitor for new log messages. Log messages appear at the bottom of the list, scrolling the list up. The monitor data is not scrollable.

Perform the steps in Procedure 49 to monitor a log.

Procedure 49: Monitoring a log

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Type **l** to display the Logs screen.

The system displays the Logs screen and the System Logs are automatically displayed.

4 Press the **Options** function key.

The system displays the list of logs files available.

5 Select either System log or Maintenance log and press **<enter>**.

6 Press the **Commands** function key.

The system displays the commands available for selection.

7 Select the **Monitor** command and press **<enter>**.

The system displays the Monitor screen for the selected log (either the System log or the Maintenance log).

- 8 Press the **<CTRL>+c** key to return to terminate the monitor.
- 9 Press **Exit** to return to the Logs screen.

Printing a log

The Print command prints the selected log file. If date and time filtering or partition was selected on the System Log, only those messages within the entered date and time range are printed to the configured system default printer.

Perform the steps in Procedure 50 to print a log.

Procedure 50: Printing a log

- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the Diagnostics menu.
The system displays the Diagnostics screen.
- 3 Type **l** to display the Logs screen.
The system displays the Logs screen and the System Logs are automatically displayed.
- 4 Press the **Options** function key.
The system displays the list of logs files available.
- 5 Select a log and press **<enter>**.
- 6 Press the **Commands** function key.
The system displays the commands available for selection.
- 7 Select the **Print** command and press **<enter>**.
The system sends the selected log to the default system printer.

Cancelling the log printout

The Cancel Printing command cancels a previously requested log printout. Perform the steps in Procedure 51 to cancel a log printout.

Procedure 51: Cancelling a log printout

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Type **l** to display the Logs screen.

The system displays the Logs screen and the System Log is displayed by default.

4 Press the **Options** function key.

The system displays the list of logs files available.

5 Select the log that is printing and press **<enter>**.

6 Press the **Commands** function key.

The system displays the commands available for selection.

7 Select the **Cancel Printing** command and press **<enter>**.

The system cancels the print job currently in progress.

View System Monitor

The View System Monitor screen is comprised of up to seven status screens (depending on type of partition):

- Program (see page 288)
- Lock (see page 292)
- Partition (see page 294)
- Physical node (see page 301)
- Virtual node (see page 302)
- IP Port (see page 297)
- CPU Utilization (see page 299)

You can select the View System Monitor screen from the Diagnostics menu.

Use the Commands menu to access the various status screens on the System Monitor screen. Pressing a function key displays the Commands menu. When a status screen is selected, the System Monitor screen is redrawn with the selected status.

You can select how often the System Monitor updates its real-time information from the Commands menu. Valid refresh rates are 1 to 60 seconds in one-second increments. The default is five seconds.

Program Status

The Program Status screen is displayed by default when you select the View System Monitor command on the Diagnostics menu (see Figure 97).

Use Procedure 52 to view the System Monitor.

Procedure 52: Accessing the View System Monitor screen and selecting a status screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics menu.

- 3 Type **v** to display the View System Monitor screen.

The System Monitor — Program Status screen is displayed as the default setting.

- 4 To change the view to another status screen, select the status option from the **Commands** menu (see Figure 97).

Figure 97: Program Status screen with Commands menu

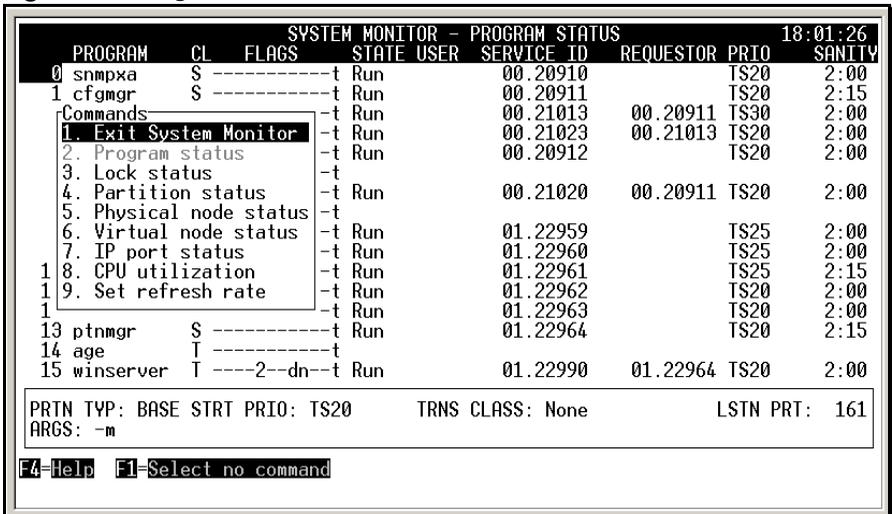


Table 36 defines the Program Status screen fields.

Table 36: Program Status screen fields (Part 1 of 3)

Parameter	Description																					
Program Name	The name of the program.																					
CL	(Class) S is used to represent static (meaning that the program never goes away) and T for transient (meaning the program only appears when requested).																					
Flags	<p>The status flags are listed below (in order from left to right). The dash (-) indicates the flag is turned off or is reserved.</p> <table border="0"> <thead> <tr> <th>No.</th> <th>Char</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>M</td> <td>The program is the current master time source.</td> </tr> <tr> <td>2.</td> <td>A</td> <td>The program has acquired a source of reliable time.</td> </tr> <tr> <td>3.</td> <td>S</td> <td>The program is a potential source of reliable time.</td> </tr> <tr> <td>4.</td> <td>T</td> <td>The program is sensitive to abrupt time change.</td> </tr> <tr> <td>5.</td> <td>2</td> <td>If the n flag (described below) is set, the program which requested this program is sent a USR2 signal when this program dies.</td> </tr> <tr> <td>6.</td> <td>1</td> <td>If the n flag (described below) is set, the program which requested this program is sent a USR1 signal when this program dies.</td> </tr> </tbody> </table>	No.	Char	Description	1.	M	The program is the current master time source.	2.	A	The program has acquired a source of reliable time.	3.	S	The program is a potential source of reliable time.	4.	T	The program is sensitive to abrupt time change.	5.	2	If the n flag (described below) is set, the program which requested this program is sent a USR2 signal when this program dies.	6.	1	If the n flag (described below) is set, the program which requested this program is sent a USR1 signal when this program dies.
No.	Char	Description																				
1.	M	The program is the current master time source.																				
2.	A	The program has acquired a source of reliable time.																				
3.	S	The program is a potential source of reliable time.																				
4.	T	The program is sensitive to abrupt time change.																				
5.	2	If the n flag (described below) is set, the program which requested this program is sent a USR2 signal when this program dies.																				
6.	1	If the n flag (described below) is set, the program which requested this program is sent a USR1 signal when this program dies.																				

Table 36: Program Status screen fields (Part 2 of 3)

Parameter	Description
	<p>7. c There is a socket connection between this program and the program which requested it.</p> <p>8. d The program is terminated if the program requesting it dies.</p> <p>9. n The program that requested this program is notified when this program dies.</p> <p>10. x The program is performing processing during which its normal sanity period has been extended.</p> <p>11. s The program is suspended (only applicable for static programs).</p> <p>12. t This is the template for this program.</p>
State	<p>Indicates current state of program.</p> <p>Valid states are:</p> <ul style="list-style-type: none"> ■ Run—Program is running ■ Ready—Ready to run ■ Init—Initialized ■ KillP—Kill is pending ■ Dying—System is killing program
User	The CC MIS supervisor ID of the user using the program.
Service ID	The ID assigned to each program. The format is <partition ID>.<process ID>
Requestor	The service ID of the program requesting this program.

Table 36: Program Status screen fields (Part 3 of 3)

Parameter	Description
Prio	<p>Indicates the priority at which the program is running. The format is <priority type> <priority number>.</p> <p>Valid priority types are TS (time share) and RT (real-time). Processes with lower priority numbers are given higher priority. This column is blank for transient programs that have not been started.</p>
Sanity	<p>Indicates the amount of time left before a program must report sanity again. Programs that do not report within the Sanity time are killed.</p>
Lower Portion of Screen	
Partition Type	<p>Partition type.</p> <p>A BASE program serves all partitions. A CUST or NAP program is an invocation of a program for a particular partition.</p>
Start Prio	<p>Start priority.</p> <p>The priority with which the program was or will be started.</p>
Transient Class	<p>Transient class.</p> <p>The program transient class (USERS, REPORTS, PCWALLBOARDS, or None).</p>
Args	<p>The arguments that were passed to the program when it was started.</p>

Lock Status

The Lock Status option is selected from the Commands menu. The System Monitor screen is redrawn to display Lock Status (see Figure 98).

Figure 98: Lock Status screen

SYSTEM MONITOR - LOCK STATUS							07:25:21	
PARTITION	LOCK NAME	TYPE	MAX	STATUS	GR	WT		
0	0:BASE	TAPE_IOCTL	Database		Unlocked			
1	0:BASE	AGER	Resource	1	Unlocked			
2	1:CUST	SVSDB	Database		Unlocked			
3	1:CUST	HDB_AGED	Database		Unlocked			
4	1:CUST	HDB_CUR	Database		Unlocked			
5	1:CUST	CIDUMP	Resource	1	Unlocked			
6	1:CUST	RPTCONTROL	Resource	3	Unlocked			
7	:NAP	SVSDB	Database					
8	:NAP	RPTCONTROL	Resource					
9	2:CUST	SVSDB	Database		Unlocked			
10	2:CUST	HDB_AGED	Database		Unlocked			
11	2:CUST	HDB_CUR	Database		Unlocked			
12	2:CUST	CIDUMP	Resource	1	Unlocked			
13	2:CUST	RPTCONTROL	Resource	3	Unlocked			
14								
15								

GR:
WT:

F4=Help F1=Commands

Table 37 defines the Lock Status screen fields.

Table 37: Lock Status screen fields (Part 1 of 2)

Parameter	Description
Partition	Number and type of partition (Base or Cust) in the format Partn ID: BASE or CUST
Lock Name	The name of the lock (for example, SVSDB and HBD_AGED)
Type	Type of lock (database or resource)
Max	Maximum number of locks granted on the resource. Blank indicates unlimited locks allowed

Table 37: Lock Status screen fields (Part 2 of 2)

Parameter	Description
Status	Current status states are: <ul style="list-style-type: none">■ Unlocked■ Shared■ Exclusive
GR	Number of locks granted
WT	Number of programs waiting for a lock on that resource Note: The lower portion of the screen displays additional information about the lock. GR is the list of programs that have been granted a lock. WT is a list of programs that are waiting for a lock.

Partition Status

When you select the Partition Status option from the Commands menu, the System Monitor screen is redrawn to display Partition Status (see Figure 99).

Figure 99: Partition Status screen

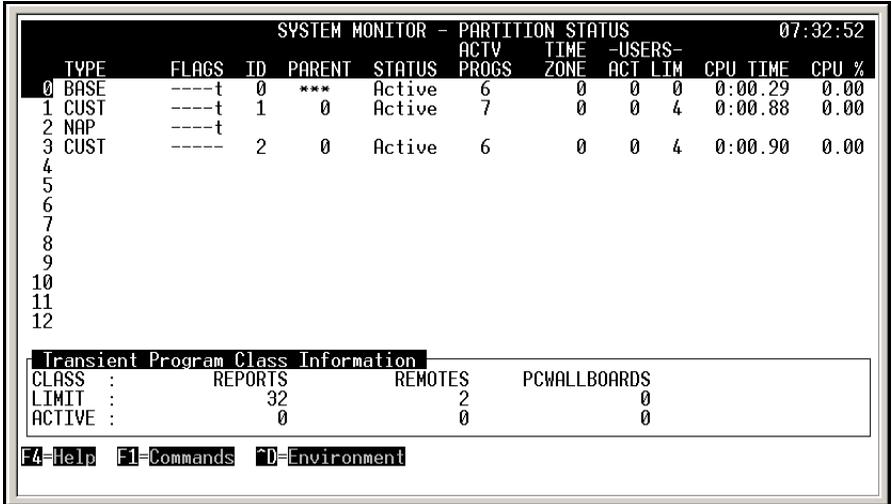


Table 38 defines the Partition Status screen fields.

Table 38: Partition Status screen fields (Part 1 of 3)

Parameter	Description
Type	Type of partition (Base or Cust)
Flags	<p>Four flags are:</p> <ul style="list-style-type: none"> d—deleting s—partition stopped n—partition is network accessible t—template for this partition <p>Note: The dash (-) indicates that the flag is turned off.</p>

Table 38: Partition Status screen fields (Part 2 of 3)

Parameter	Description
ID	The numeric ID of the partition
Parent	The ID of the parent partition of the partition
Status	Three status states are: <ul style="list-style-type: none"> ■ Active—Online and working ■ Ready— Is stopped or has not been started ■ Dying—In process of being shutdown or deleted
Progs Active	Number of programs running in partition
Time Zone	Specifies the time zone
CPU Time	Total CPU time used by programs in this partition since it was created
CPU %	Percentage of CPU time currently being used by programs in this partition This value is updated every two seconds.
Transient Program Class Information	When a partition is highlighted, additional information concerning transient programs for that partition appears in this area.
Class	Transient class of REPORTS, USERS, or PCWALLBOARDS
Limit	The maximum number of each transient class allowed for this partition
Active	The count of programs of each transient class currently active

Table 38: Partition Status screen fields (Part 3 of 3)

Parameter	Description
Environment window	<p>When a partition is highlighted, additional information concerning the partition appears in the lower portion of the screen when you select the [Environment] function key.</p> <p>An example of the information displayed about the selected partition is as follows:</p> <pre>CUSTDATA=/misdata/disk1/cust002 IPC=/mis/ipc/cust002 CUSTDB=/misdata/disk1/cust002/sysdb</pre>

IP Port Status

When you select the IP Port Status option from the Commands menu, the System Monitor screen is redrawn to display IP Port Status (see Figure 100).

Figure 100: Port Status screen

PORT ID	FUNCTION	STATUS	CONNECTS	BAD ADDR	BAD STATE	>LIMIT
0	tcp 20001	Static Clients	0	0	0	0
1	tcp 20002	Dynamic Clients	Active	0	0	0
2	udp 161	SNMP	Active			
3	tcp 20009	DB Export	Active			
4	udp 20005	N/W Messaging	Active			
5	tcp 20006	N/W Services	Active			
6	tcp 20007	N/W Statistics	Active			
7	tcp 20100	N/W Database				
8	tcp 20200	N/W Load Mgmt				
9	tcp 20202	N/W Load Mgmt	Active			
10	tcp 20201	N/W Load Mgmt	Active			
11	tcp 20101	N/W Database	Active			
12	tcp 20102	N/W Database	Active			

F4=Help F1=Commands

Table 39 describes the IP Port Status screen fields.

Table 39: IP Port Status screen fields (Part 1 of 2)

Parameter	Description
Port ID	The protocol and port number of the IP port.
Function	A brief functional description of the port.
Status	If the port has been opened by the system the status displays Active. Otherwise the status field is blank.
Connects	The number of valid connection attempts on the port since the system was brought up.

Table 39: IP Port Status screen fields (Part 2 of 2)

Parameter	Description
Bad Addr	The number of connection attempts on the port from unconfigured PCs.
Bad State	The number of invalid connection attempts that failed because the partition the user was attempting to connect to was not up.
> Limit	The number of valid connection attempts where connection would have exceeded the transient program limit for the partition.

CPU Utilization

When you select the CPU Utilization option from the Commands menu, the System Monitor screen is redrawn to display CPU Utilization (see Figure 101).

Figure 101: CPU Utilization screen

SYSTEM MONITOR - CPU UTILIZATION								08:04:08
				---PERCENTAGE UTILIZATION---				
PROGRAM NAME	SERVICE ID	KBYTES	CPU TIME	INST	LIFE	AVG	PERIOD	
0 snmpxa	00.20910	1804	0:00.10	0.00	0.00	0.00	0:10:50	
1 cfmgr	00.20911	2160	0:00.11	0.00	0.00	0.00	0:10:50	
2 dmblink	00.21013	2280	0:00.01	0.00	0.00	0.00	0:10:50	
3 dmssim	00.21023	2360	0:00.02	0.00	0.00	0.00	0:10:50	
4 barmgr	00.20912	1748	0:00.01	0.00	0.00	0.00	0:10:50	
5 bartask								
6 sts_rcvr	00.21020	1728	0:00.00	0.00	0.00	0.00	0:10:50	
7 sts_sndr								
8 dbbserv	01.22959	2852	0:00.55	0.00	0.00	0.03	0:10:50	
9 stsmgr	01.22960	2648	0:00.10	0.00	0.00	0.00	0:10:50	
10 rtce	01.22961	2596	0:00.01	0.00	0.00	0.00	0:10:50	
11 cclink	01.22962	1868	0:00.00	0.00	0.00	0.00	0:10:50	
12 scheduler	01.22963	1804	0:00.05	0.00	0.00	0.00	0:10:50	
13 ptmgr	01.22964	1764	0:00.05	0.00	0.00	0.00	0:10:50	
14 age								
15 winserver	01.22990	2792	0:00.01	0.00	0.00	0.00	0:10:50	
TOTAL CPU UTILIZATION:			0:02.33	0.00	0.00	0.04	0:10:50	
F4=Help F1=Commands F0=Reset averages								

Table 40 describes the CPU Utilization status screen fields.

Table 40: CPU Utilization screen fields (Part 1 of 2)

Parameter	Description
Program Name	The name of the program.
Service ID	The ID assigned to each program. The format is <partition ID>.<process ID>. Partition ID 0 is reserved for the base partition. This column is blank for transient programs that have not yet started.

Table 40: CPU Utilization screen fields (Part 2 of 2)

Parameter	Description
KBytes	The amount of memory in kilobytes currently used by the program. This number includes attached shared memory, so the total number of KBYTES can be greater than the total number of kilobytes used by all programs in this list.
CPU TIME	Total CPU time used by the program since it started.
Percentage Utilization — Inst	Percentage of CPU usage during the last five seconds.
Percentage Utilization — Life	Percentage of CPU usage since the system started.
Percentage Utilization — Avg	Percentage of CPU usage since reset (refer to Reset averages key — see page 300).
Percentage Utilization — Period	<p>Time since reset (refer to Reset averages key — see page 300).</p> <p>The lower portion of the screen displays the CPU Time and Percentage Utilization values for the entire CC MIS system.</p> <p>The Reset averages key resets the PERIOD counter and the AVG PERCENTAGE counter for the program the cursor is positioned on, for the total CPU utilization, or for all programs and the total CPU utilization (depending on which is selected).</p>

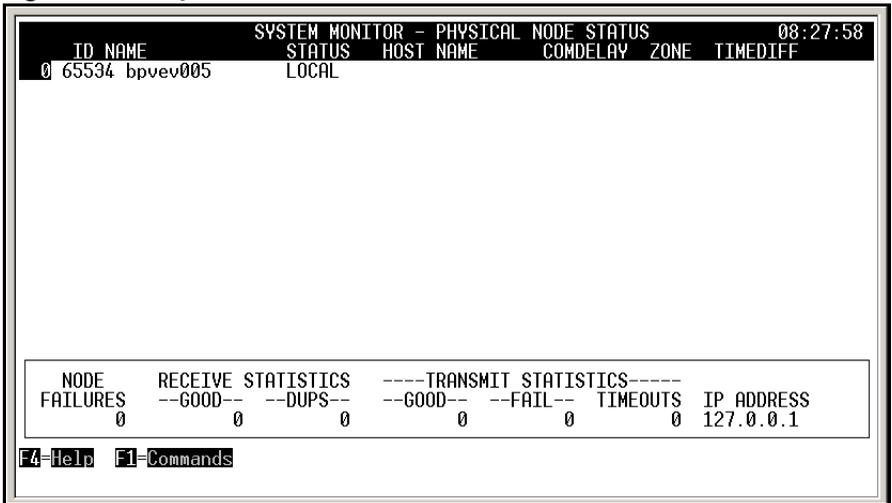
Additional System Monitor screens

The Physical Node Status and Virtual Node Status are available from the System Monitor commands menu when the Networking feature is enabled.

Physical Node Status

Figure 102 shows the Physical Node Status.

Figure 102: Physical Node Status screen



Virtual Node Status

Figure 102 shows the Virtual Node Status. This screen displays information concerning the partitions (virtual nodes) that are included in the network.

Figure 103: Virtual Node Status screen

SYSTEM MONITOR - VIRTUAL NODE STATUS							11:24:23
NODE	PTN	TYPE	STATUS	NAME	STATUS	ZONE	
0	0	0	Local			0	
1	0	1	Local	Ptn_trng		0	
2	0	3	Local	Ptn-NAP		0	
3	0	2	Local	Ptn-Live		0	
4	0	4	Local	Tara		0	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

F4=Help F1=Commands

Trace Switch Link

You can use the Trace Switch Link command to capture the messages sent between the ACD switch and the CC MIS system for debugging purposes. The output from the Trace Switch Link command is a useful diagnostic tool when trying to determine the interactions between the ACD switch and the downstream processor.

Note: The Trace Switch Link command can capture the initialization data received from the host switch in a Link Trace file. When Trace Switch Link is started and stopped, the on or off state is written to a file that CC MIS can check upon startup. If Trace Switch Link is on when CC MIS starts, the system can immediately begin the Trace Switch Link and the initialization data is captured and can be analyzed.

Perform the steps in Procedure 53 to access the Trace Switch Link screen.

Procedure 53: Accessing the Trace Switch Link screen

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics menu.

3 Type **t** to access the Trace Switch Link screen.

The system displays the Link Trace screen (see Figure 104 on page 304).

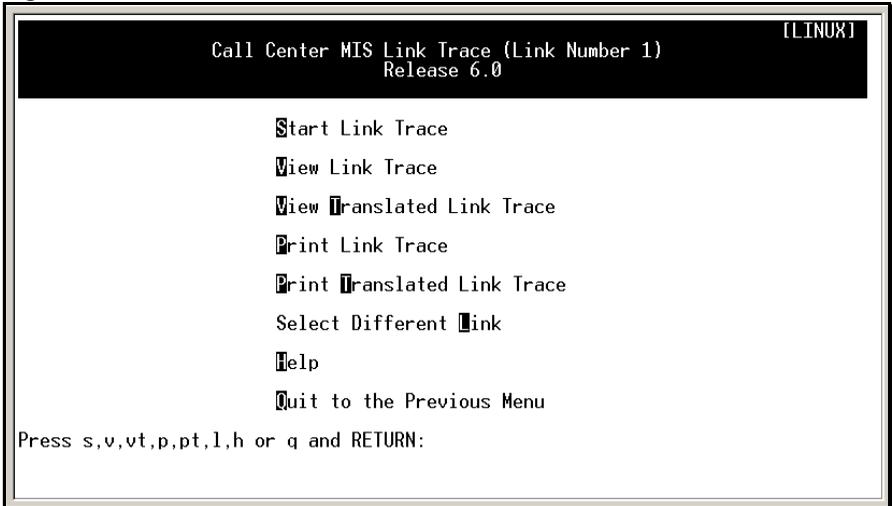
Figure 104: CC MIS Link Trace menu screen

Table 41 describes the menu option on the Link Trace screen.

Table 41: Link Trace menu options (Part 1 of 2)

Menu option	Descriptions
Start Link Trace	This command starts the Link Trace.
Stop Link Trace	This command stops the Link Trace after it was started with the Start Link Trace command. When the Link Trace is stopped, this command is replaced with Start Link Trace.
View Link Trace	This command provides the capability to view the hexadecimal Link Trace file (see Figure 107 on page 307). Use the Exit function key to exit the viewer.

Table 41: Link Trace menu options (Part 2 of 2)

Menu option	Descriptions
View Translated Link Trace	<p>This command provides the capability to view the translated version of the Link Trace file. When you select this command, the Message Translator Filter screen appears (see Figure 110 on page 312).</p> <p>This screen allows the selection of the types of messages to translate from their hexadecimal representation to a readable format. More help is available from the Message Translator Filter screen.</p>
Print Link Trace	<p>This command prints the untranslated hexadecimal Link Trace file to the default system printer.</p>
Print Translated Link Trace	<p>This command prints the translated version of the Link Trace file to the default system printer. When you select this command, the Message Translator Filter screen appears. Choose which types of messages to translate from their hexadecimal representation to a readable format and print. More help is available from the Message Translator Filter screen.</p>
Select Different Link	<p>This command provides the capability to select a different link for the link trace commands.</p>

Figure 105 shows a sample Link Trace screen. A prompt appears to allow you to specify the link number for which tracing is desired.

Figure 105: Link Trace screen (multiple links)

```
Link Trace ...

There are multiple links configured:

Link Number: 1, Simulator Link
Link Number: 2, Simulator Link
Link Number: 3, Switch X.121 Addr: 12345678, ACD Pool: ACDPOOL5
Link Number: 4, Switch X.121 Addr: 12345678, ACD Pool: ACDPOOL1

Enter link number to continue or "q" to quit: █
```

Note: The commands listed on the Link Trace screen relate to the link displayed in the title.

When multiple links are defined, a prompt appears requesting selection of the link on which the link trace commands are to operate. Figure 105 shows the prompt that appears the first time you select the Link Trace command.

Use the Select Different Link command on the Link Trace menu (see Figure 104 on page 304) to select a different link for the link trace commands. The View Translated Link Trace and Print Translated Link Trace commands allow you to choose which type of messages to translate from their hexadecimal representation to a readable format.

Figure 106 on page 307 is an example of the Message Translator Filter screen.

Figure 106: CC MIS Message Translator Filter screen

```

                                Message Translator Filter

* 1 dspAssociatePool           * 15 switchEndOfInit
* 2 dspRequestInit            * 16 switchSendEvent
* 3 dspStopInit               * 17 switchSendLoadMgmtEvent
* 4 dspQueryDateAndTod        * 18 switchSendThrottle
* 5 dspStartTransfer           * 22 switchSendAudioList
* 6 dspStopTransfer           * 23 switchSendRouteList
* 8 dspRequestLoadMgmt        * 24 switchSendNACDGroupRoutingData
* 9 dspRequestAudioInfo       * 25 switchSendSubgroupData
* 10 dspRequestRouteInfo      * 26 switchSendVFGData
* 11 switchSendSubPoolData    * 27 switchSendVFG0m
* 12 switchSendAcidGroupData  * 64 nosLogon
* 13 switchSendSupplAcidDn    * 65 nosLogout
* 14 switchSendAgentPosData

Set (*) Translation of All Operations      Set Agent Filter
Clear Translation of All Operations        Set Position Filter
Proceed (View)                             Set Group Filter
Help

                                Quit to Previous Screen

Enter Operation IDs (to toggle),s,c,p,h,a,o,g or q:

```

When Link Trace translating is turned on, the hexadecimal notation in the Link Trace file is interpreted into a readable format. You can use the translated version of Link Trace if a protocol guide is not available to interpret the hexadecimal file.

Figure 107 shows an example of the untranslated Link Trace file.

Figure 108 on page 308 shows an example of the same messages in the translated form.

Figure 107: Untranslated Link Trace file example

```

30 93/06/10
dsp - 10:18:01 a1 23 30 21 02 01 0b 02 01 40 30 19 16 04 4e 4f 50 31 16 06
                41 43 44 4d 49 53 16 06 41 43 44 4d 49 53 02 01 07
dsp - 10:18:01 a1 0a 30 08 02 01 0c 02 01 41 05 00
swx - 10:18:01 a3 10 30 0e 02 01 0b 02 01 41 30 06 02 01 02 02 01 00
dsp - 10:18:03 a1 23 30 21 02 01 0d 02 01 40 30 19 16 04 4e 4f 50 31 16 06
                41 43 44 4d 49 53 16 06 41 43 44 4d 49 53 02 01 07
swx - 10:18:02 a2 07 30 05 02 01 0c 05 00

```

Figure 108: Translated Link Trace file example

```
BCS : 30 Date : 93/06/10

1)    dsp 10:18:01    InvokedID:  11 Invoke nosLogon

      Protocol Version: NOP1
      Userid:          ACDMIS
      Password:       ACDMIS
      Profile:        7

2)    dsp 10:18:01    InvokedID:  12 Invoke nosLogout

3)    swx 10:18:01    InvokedID:  11 Ret Err on nosLogon

      Operation Sequence Error, duplicatelogon (2) :
      The nosLogon RO is in error since an RO of this type is already in
      effect.
```

In Figure 107 on page 307 and Figure 108, messages marked by dsp are messages sent from the downstream processor (CC MIS) to the ACD host switch. Those marked with swx are messages sent from the ACD host switch to the downstream processor. The InvokedID acts as a sequence number that associates individual operation invocations with operation results.

Starting/Stopping the Link Trace

The Start Link Trace command is a toggle command that allows Link Trace to be turned on and off. When Link Trace is turned on, the displayed command is Stop Link Trace. When the Link Trace is turned off, the displayed command is Start Link Trace.

Perform the steps in Procedure 54 to use the Start/Stop Link Trace command.

Procedure 54: Starting and stopping a link trace

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Enter **t** to access the Trace Switch Link.

The system displays the Link Trace screen.

4 Enter the link number.

Note: The link number is only specified if there are multiple links that can be traced.

5 Press **s** and **<enter>** to start the link trace.

The system turns Link Trace on.

Note: If Link Trace is on, the Link Trace screen displays the Stop Link Trace command instead of Start Link Trace. To stop the link trace after it has been activated, press **s** and **<enter>**.

Viewing the Link Trace

Use the View Link Trace command to view the untranslated hexadecimal Link Trace file. Perform the steps in Procedure 55 to use the View Link Trace command.

Note: The View Link Trace command is available only if a trace file exists.

Procedure 55: Viewing a link trace

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Enter **t** to access the Trace Switch Link.

The system displays the Link Trace screen.

4 Type **v** to view a link trace.

The system displays the Trace Dump screen with the untranslated hexadecimal Link Trace file.

Figure 109: Trace dump

```

-Trace Dump
43 05/03/07
SWX- 16:12:18 a1 1e 30 1c 02 01 64 02 01 10 86 14 55 05 40 00 00 0a 0b 04
ee 03 10 0c 12 0b 00 00 00 00 00 00
SWX- 16:12:18 a1 1e 30 1c 02 01 65 02 01 10 86 14 55 05 40 00 00 0a 0b 04
ee 03 10 0c 12 0c 00 00 00 00 00 00
SWX- 16:12:18 a1 38 30 36 02 01 66 02 01 10 84 2e 55 05 40 00 00 0a 0b 04
ee 03 10 0c 12 03 30 03 00 00 00 00 10 0c 0d 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 07 37 40 53 73 0a
SWX- 16:12:18 a1 1e 30 1c 02 01 67 02 01 10 86 14 55 05 11 00 00 0a 55 04
ed 03 10 0c 12 0c 00 00 00 00 00 00
SWX- 16:12:18 a1 1e 30 1c 02 01 68 02 01 10 86 14 55 05 31 00 00 0a 66 04
0b 04 10 0c 12 0b 00 00 00 00 00 00
SWX- 16:12:18 a1 26 30 24 02 01 69 02 01 10 87 1c 55 05 41 00 00 0a 55 05
31 00 00 0a 6f 04 62 04 10 0c 12 02 00 00 19 57 48 26 17 0a
SWX- 16:12:18 a1 38 30 36 02 01 6a 02 01 10 84 2e 55 05 41 00 00 0a 6f 04
04 04 10 0c 12 03 00 01 00 00 00 00 10 0b 0c 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 19 57 48 26 17 0a
SWX- 16:12:18 a1 3a 30 38 02 01 6b 02 01 10 83 30 55 05 10 00 00 0a 55 05
10 00 00 0a 10 0c 12 0c 0f 00 03 00 00 00 0a 00 00 00 55 05
-[Line      1 of 16099]-
F1=Exit  ^H=Search

```

Viewing the Translated Link Trace

Use the View Translated Link Trace command to view the translated version of the Link Trace file, instead of the hexadecimal file. When you choose this command, the Message Translator Filter screen appears. This screen allows you to choose which messages to translate for viewing.

Perform the steps in Procedure 56 to use the View Translated Link Trace command.

Note: This command is available only if a Link Trace file exists.

Procedure 56: Viewing a translated link trace file

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

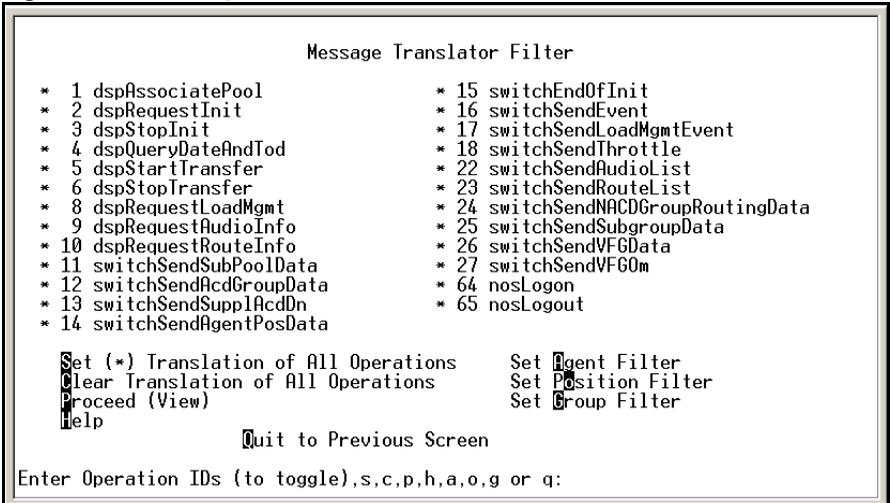
The system displays the Diagnostics screen.

3 Enter **t** to access the Trace Switch Link.

The system displays the Link Trace screen.

4 Type **vt** to view the translated link trace.

The system displays the Message Translator Filter screen (see Figure 110 on page 312).

Figure 110: Message Translator Filter screen

5 Type **p** to proceed with the View command.

The system displays the Translated Trace file (see Figure 111).

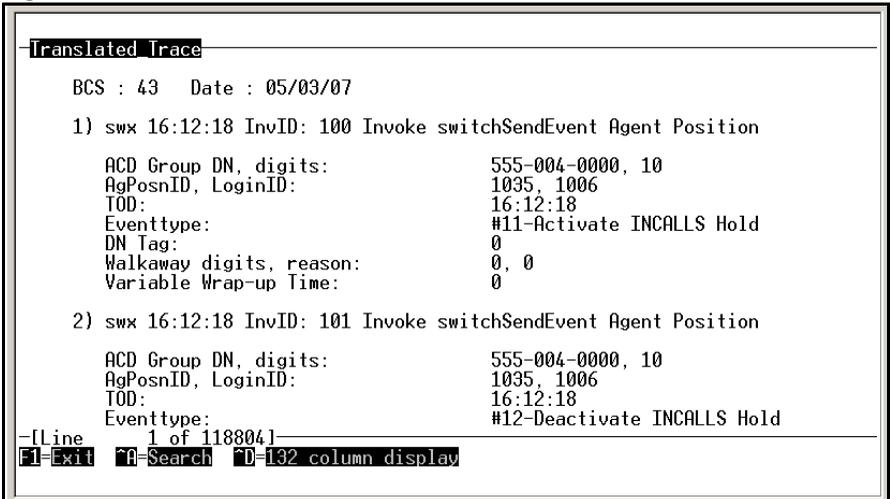
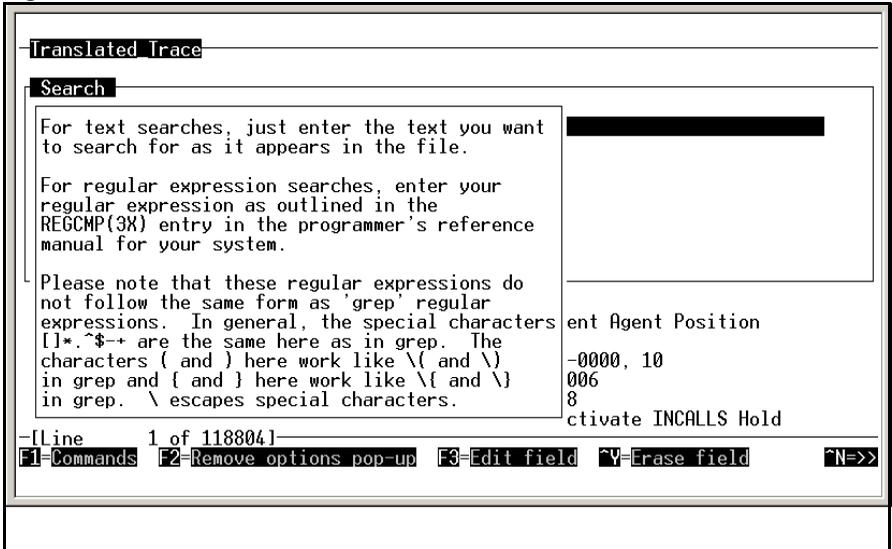
Figure 111: Translated link trace file

Figure 113: Search options pop-up



Printing the Link Trace

You can print the untranslated hexadecimal Link Trace file using the Print Link Trace command.

Note: This command is only available if a trace file exists and the system default printer is configured.

Perform the steps in Procedure 57 to use the Print Link Trace command.

Procedure 57: Printing a Link Trace file

- 1** Access the Maintenance and Administration main menu.
- 2** Type **d** to access the Diagnostics menu.
The system displays the Diagnostics screen.
- 3** Type **t** to access the Trace Switch Link.
The system displays the Link Trace screen.
- 4** Type **p** to access the Print Link Trace.
The system sends the current Link Trace file to the system default printer.

Printing the Translated Link Trace

Use the Print Translated Link Trace command to print the translated Link Trace file, rather than the untranslated hexadecimal file.

Note: This command is available only if a Link Trace file exists and the system default printer has been set.

When you select this command, the Message Translator Filter screen appears. The Message Translator Filter screen then allows you to choose which messages are translated and printed.

Perform the steps in Procedure 58 to use the Print Translated Link Trace command.

Procedure 58: Printing a translated link trace file

1 Access the Maintenance and Administration main menu.

2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

3 Type **t** to access the Trace Switch Link.

The system displays the Link Trace screen.

4 Type **pt** to access the Print Translated Link Trace.

The system displays the Message Translator Filter screen.

5 Type **p** to proceed with the Print command.

The system sends the translated Link Trace file to the system default printer.

Cancelling link trace printing

You can cancel the printing of a Link Trace file that is currently being printed with the Cancel Printing command.

Note: The Cancel Printing command is available only if a Link Trace file has been printed.

Perform the steps in Procedure 59 to use the Cancel Printing command.

Procedure 59: Cancelling link trace printing

- 1** Access the Maintenance and Administration main menu.
- 2** Type **d** to access the Diagnostics menu.
The system displays the Diagnostics screen.
- 3** Type **t** to access the Trace Switch Link.
The system displays the Link Trace screen.
- 4** Press **c** and **<Return>**.
The system cancels the current Link Trace print job.

Select Different Link

Use the Select Different Link command to select a different link for the trace commands.

Perform the steps in Procedure 60 to use the Select Different Link command.

Procedure 60: Selecting a different link for link trace

- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the Diagnostics menu.
The system displays the Diagnostics screen.
- 3 Type **t** to access the Trace Switch Link.
The system displays the Link Trace screen.
- 4 Press **I** to access the Select Different Link option.
The system displays the Trace Link screen (see Figure 114).

Figure 114: Trace Link screen

```
Link Trace ...

There is one link configured:
  Link 1: Simulator
Press RETURN to continue
```

- 5 Enter the new link number.
The Link Trace menu screen appears.

Physical Network Login

The Physical Network Login option is available on the Diagnostics menu when the networking feature is enabled.

The Physical Network Login screen (Figure 115) appears when the Physical Network Login option is selected. This screen provides access to other nodes in your physical network.

Use the steps in Procedure 61 to access the Physical Network Login screen.

Procedure 61: Physical Network Login screen

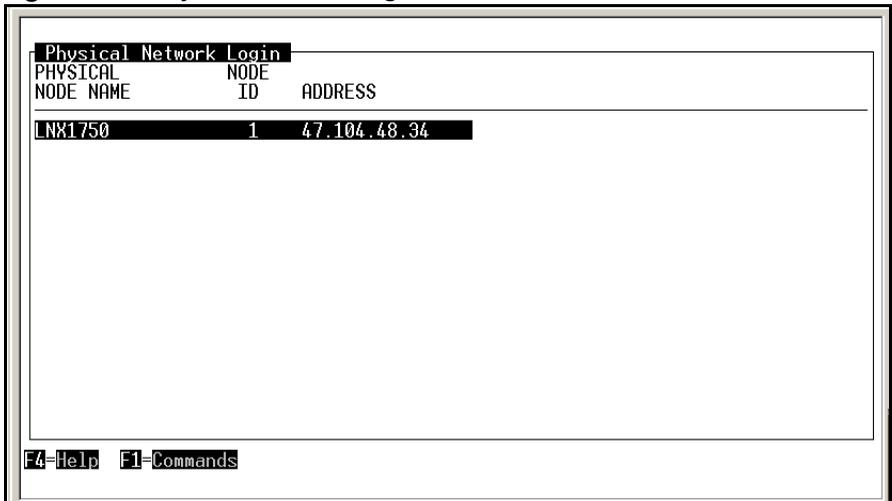
- 1 Access the Maintenance and Administration main menu.
- 2 Type **d** to access the Diagnostics menu.

The system displays the Diagnostics screen.

- 3 Type **p** to access the Physical Network Login.

The system displays the Physical Network Login screen (see Figure 115).

Figure 115: Physical Network Login screen

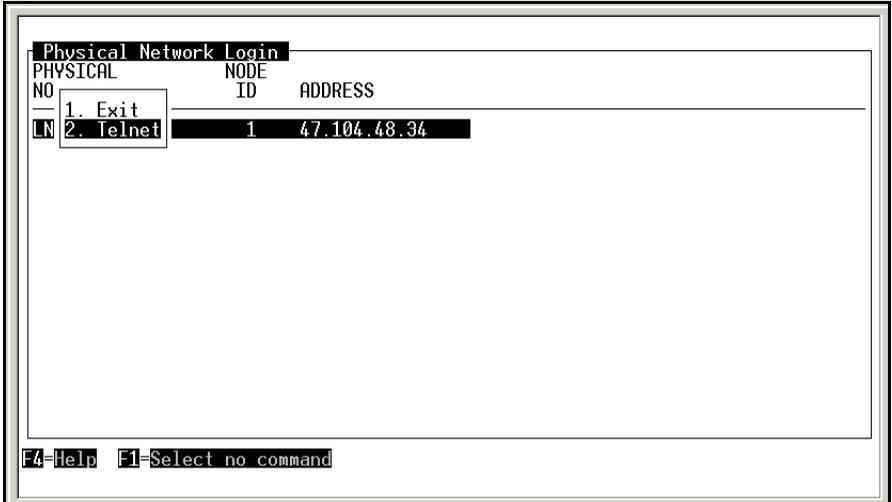


PHYSICAL NODE NAME	NODE ID	ADDRESS
LNX1750	1	47.104.48.34

F4=Help F1=Commands

- To log on to a physical node in the network, use the arrow keys to highlight the desired node, and then press the **Commands** function key. A commands menu appears, allowing you to exit or log on through Telnet (see Figure 116).

Figure 116: Commands menu



- Select the **Telnet** option.

The login prompt is displayed (see Figure 117 on page 321).

Figure 117: Login prompt

```
*** To terminate login process:
***   if a login or password prompt is displayed, press Control-D
***   if a login or password prompt is not displayed, press Control-C

Trying 47.104.48.34...
Connected to 47.104.48.34.
Escape character is '^]'.

    bpvev006 (Linux release 2.4.21-27.0.2.EL #1 Wed Jan 12 23:46:37 EST 2005) ()
login:
```

6 Enter your logon information.

Chapter 13

Switch Configuration Data updates

In this chapter

Introduction	324
Accessing the Update Switch Configuration Data screen.	325

Introduction

The Update Switch Configuration Data command provides the ability to manually initiate an update of ACD configuration data received from the switch. This function causes the CC MIS system to request that the switch resend all initialization data for a selected link to the CC MIS system. This command is useful for updating the CC MIS ACD configuration information following the addition or deletion of ACD groups, positions, or subgroups on the switch.

This is the same function that runs automatically each day at the time defined by the Reinit Time field in the Switch Link Definition (see “Switch Link Configuration” on page 138).

Accessing the Update Switch Configuration Data screen

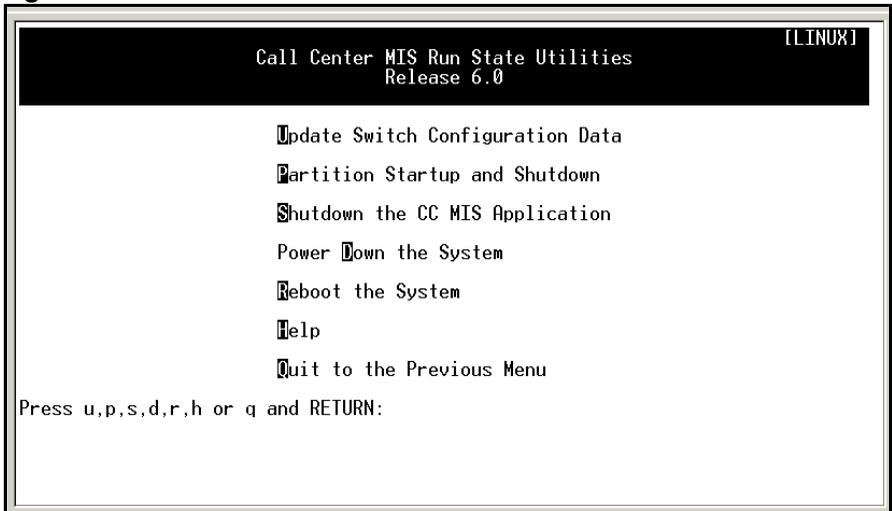
Perform the steps in Procedure 62 to access the Update Switch Configuration Data screen.

Procedure 62: Accessing the Update Switch Configuration Data screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **r** to select **Run State Utilities**.

The system displays the Run State Utilities menu (see Figure 118 on page 325).

Figure 118: Run State Utilities menu



- 3 Type **u** to select the **Update Switch Configuration Data** command.

The system displays the Update Switch Configuration screen.

- For single links, enter **y** to run the switch configuration update for the specified link (or type **q** to quit without running the update). Figure 119 on page 326 shows an example of the prompt for a single link.

- For multiple links, enter the **link number** of the link to be updated (or type **q** to quit without running the update).

Figure 120 shows an example of the prompt for multiple links

Note: Reinitialization of a link affects only partitions using that link.

Figure 119: Update Switch Configuration screen (single link)

```
Update Switch Configuration . . .  
  
The following switch link is active:  
  
    Link Number: 1, Switch X.121 Addr: 12345678, ACD Pool: POOL1  
  
Enter "y" to continue or "q" to quit: y  
Requesting configuration update on link 1 . . .  
  
Press RETURN to continue
```

Figure 120: Update Switch Configuration screen (multiple links)

```
Update Switch Configuration . . .  
  
The following switch links are active:  
  
    Link Number: 1, Switch X.121 Addr: 12345678, ACD Pool: POOL1  
    Link Number: 3, Switch X.121 Addr: 12345678, ACD Pool: POOL3  
  
Enter link number to continue or "q" to quit: 3  
Requesting configuration update on link 3 . . .  
  
Press RETURN to continue
```

Chapter 14

SNMP MIB transfer

In this chapter

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Accessing the SNMP Transfer screen.	329

Introduction

You can use the Transfer SNMP MIB Definitions command on the System Upgrade Utility menu to transfer the CC MIS System MIB and CC MIS Partition MIB definition files to selected Network Management Systems (NMS).

Note: The Transfer SNMP MIB Definitions command appears on this menu only when the SNMP option is enabled for the system.

Accessing the SNMP Transfer screen

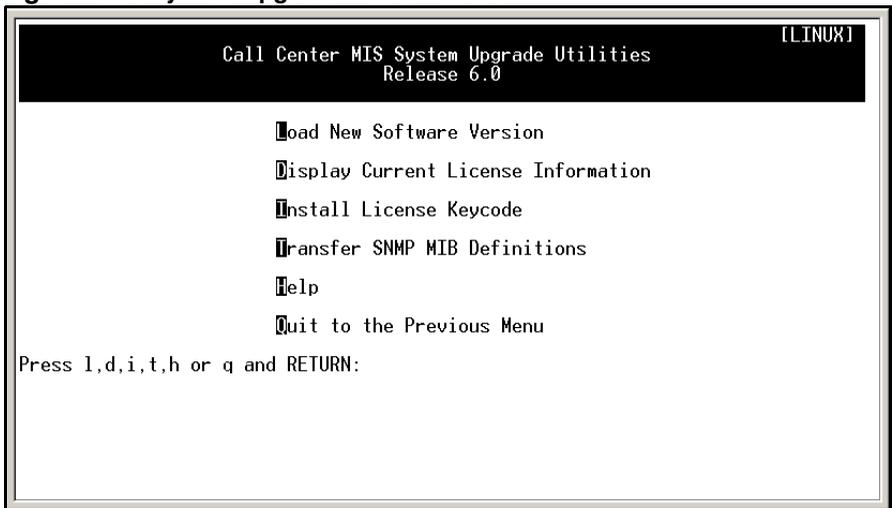
Perform the steps in Procedure 63 to access the SNMP Transfer screen.

Procedure 63: Accessing the SNMP Transfer screen

- 1 Access the Maintenance and Administration main menu.
- 2 Type **s** to access the System Upgrade Utilities menu.

The system displays the System Upgrade Utilities menu (see Figure 121).

Figure 121: System Upgrade Utilities menu



- 3 Type **t** to select the **Transfer SNMP MIB Definitions** command.

The SNMP MIB Transfer Definition screen appears (see Figure 122).

Figure 122: Transfer SNMP MIB definitions to a Network Management System

```
Transfer SNMP MIB definitions to a Network Management System
This procedure uses the File Transfer Protocol (FTP) to send
the CC MIS SNMP system and/or partition MIB definitions to
any computer that is accessible via the network.
Transfer which MIBs? (system/partition/all/quit) [All]
```

- 4 During the SNMP transfer session, you are prompted for the following information:
- a. **MIBs to be transferred:** You can choose to transfer just the system MIB, just the partition MIB, or both. (If you select the partition MIB, one MIB file is transferred for each partition defined on the CC MIS system.)
 - b. **IP address:** The IP address of the computer to which the files are to be transferred.
 - c. **user ID:** The user ID on the remote computer that is to receive the MIB files.
 - d. **target directory:** The directory in which to place the MIB definition files on the remote computer.
 - e. **password:** The password for the specified user on the remote computer.

Figure 123 on page 331 show a sample SNMP transfer session.

Figure 123: Sample SNMP transfer session

Transfer SNMP MIB definitions to a Network Management System

This procedure uses the File Transfer Protocol (FTP) to send the CC MIS SNMP system and/or partition MIB definitions to any computer that is accessible via the network.

Transfer which MIBs? (system/partition/all/quit) [All]
IP address of Network Management System ? [] **47.129.161.34**
User ID? [] **nmsadmin**
Target directory? [] **tmp**

The following information has been entered:

MIBs to be transferred All
IP address of NMS 47.129.161.34
User ID nmsadmin
Target directory tmp

Is this information correct? (yes/no/quit) **y**

Please enter password for user "nmsadmin" on system
"47.129.161.34" :

Beginning transfer of MIB files.
Transferring system MIB file (missys.mib) . . .
Transferring partition 1 MIB file (misptn1.mib) . . .
Transfer of MIB files complete.

Please check for errors in the output above.
Press RETURN to continue.

Appendix A

Switch link datafill requirements

In this Appendix

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Data link datafill.	336
Standard datafill example	344

Introduction

This appendix outlines the switch datafill required to properly configure a data link to the CC MIS system.

Office parameters

The following office parameters can impact CC MIS data links to the switch:

- **NOP_USERID_SECURITY_ACCESS** — Table OFCENG
This parameter configures restricted access to the switch by userid. By default, this parameter is set to N. Set this field to Y to restrict access to the switch, and then configure the following:
 1. Define the userid and password for the switch using the PERMIT command. The userid and password fields must match the ACD User ID and ACD User Password fields. These fields are defined in the CC MIS switch link definition that is used to access this switch. Switch link definitions are defined through the Configuration menu in the CC MIS Maintenance and Administration interface.
 2. Define the applications that can be accessed by the user defined in table NOPUSERS. The only application that is required for ACDMIS is ACDMIS_APPL.
- **ACD_MIS_OUT_EVENT_BUFFER_SIZE** — Table OFCENG
This parameter is required to determine the actual outgoing event buffer size allocated for ACDMIS sessions. Specify a value between 100 and 200. The default value is 110. For high traffic links, Nortel recommends that 200 be used.
- **NOS_QUANTITY_OF_SVCS** — Table OFCENG
The maximum number of ACDMIS sessions on a switch is equal to the value of this parameter or the value of MAX_ACDMIS_SESSIONS, whichever is the lower value. Specify a value between 1 and 60. The default value is 5.
- **MAX_ACDMIS_SESSIONS** — Table OFCOPT
This specifies the maximum number of ACDMIS sessions on the switch. Specify a value between 0 and 60. The default value is 5.

All other datafill is standard as described in “Data link datafill” on page 336.

Data link datafill

This section describes the standard datafill requirements on the switch for an ACDMIS data link to CC MIS.

The majority of the datafill is the same regardless of the type of switch equipment that is used to make the connection (that is, Enhanced Multi-Protocol Controller [EMPC] card or Input/Output Module [IOM]). Where a different value is required in the datafill based on the type of equipment used, the differences are noted.

If a value in Table 42 is in italics, the value is a variable that must be determined from the switch configuration for the site.

Table 42: Data link datafill (Part 1 of 8)

Switch Table	Field	Value	Description
MPC	MPCNO	<i>n</i>	MPC number This number is assigned sequentially in the table.
	MPCIOC	<i>n</i>	The Input/Output Controller (IOC) on which the MPC card resides.
	IOCCT	<i>n</i>	The bottom circuit number of the MPC card determined by the position in the IOC. The number must be a multiple of four.

Table 42: Data link datafill (Part 2 of 8)

Switch Table	Field	Value	Description
	EQ	1X89BB	Indicates EMPC-type equipment (the older 1X89BA card can also be used).
		FX30AA	Indicates IOM-type equipment.
	DLDFILE	MPC $nnnxx$	The download file for MPC equipment. Select the latest available load that supports the X2584 protocol.
		IOM\$LOAD	The download file for IOM equipment.
MPCLINK	LINKKEY	n	MPC number and link number.
	MPCNO	n	The number assigned to the MPC card. This number must match the number assigned in the MPC table.
	LINKNO	n	For EMPC, specify which of the two synchronous MPC links is used (2 or 3).
		3	For IOM, always specify a value of 3.
	LINKALM	Y	Turns on link alarms.

Table 42: Data link datafill (Part 3 of 8)

Switch Table	Field	Value	Description
	PRTCLDAT	X2584	Specifies the 1984 version of the X.25 standard.
	LINKNABL	0	Specifies 0 as the number of minutes a link is allowed to remain in the enabling state before it is busied out and reset.
	CONVNABL	0	Specifies 0 as the number of minutes data transmission on the link is allowed to remain enabling without restarting the link.
	L2WINDOW	7	Specifies the frame window size as 7.
	L3DATA	P256	Specifies the packet size as 256 bytes.
	NODETYPE	DTE	Specifies the datalink to act as a DTE.
	CLKSRCE	EXTERNAL	Specifies that external clocking is used.
	SVCS2WAY	2	Specifies that there is 2 two-way switched virtual circuits.

Table 42: Data link datafill (Part 4 of 8)

Switch Table	Field	Value	Description
	ELECSPEC	RS232 or V35	Specifies the connection to be used. Use RS232 if the RS-232 connector is used. Use V35 if the V.35 connector is used.
	T1_10MS	150	Specifies the Ack timeout.
	T2_10MS	20	Specifies the send Ack guideline.
	L3WINDOW	7	Specifies that the packet window size is 7.
	THRUPUT	T48000	Specifies that the output throughput class is T48000.
	L3ACK	10	Specifies that the Level 3 Ack timer is 10. Note: Ignore the L3ACK switch warning when datafilling this parameter.
	SVCDNA	<i>nnnnnnnn</i>	Specify an eight digit X.121 address for this datalink.

Table 42: Data link datafill (Part 5 of 8)

Switch Table	Field	Value	Description
GDLADEV	APPLN	NOP	Specifies that NOP is used as the data transfer application.
	DEVICE	MPC	Specifies MPC as the device which can be associated with the data transfer application.
NOPADDR	INDEX	<i>n</i>	Assign a number from 0-63 to identify the ACD MIS data link from which the switch receives data.
	UNIT	<i>n</i>	Specify the MPC number previously assigned in the MPC table.
	LINK	<i>n</i>	Specify the MPC data link previously assigned in the MPCLINK table.
	ADDRESS	<i>nnnnnnnn</i>	Specify the Network Operations System Address of the data link. The address must match what was previously defined in the MPCLINK table.
	PROTOCOL	0 0 0 0	Valid protocol entry.

Table 42: Data link datafill (Part 6 of 8)

Switch Table	Field	Value	Description
NOPAPPLN	DNAKEY	xxxxxxx	The Data Network Address. Should be the same as what was previously defined in the NOPADDR table.
	APPLNS	ALL or ONLY	Enter ONLY if you want the Remote Operation service to restrict which applications a Data Network Address is authorized to access.
	APPLICATION_ID	ACDMIS_APPL	Enter ACDMIS_APPL only if APPLNS = ONLY.

Table 42: Data link datafill (Part 7 of 8)

Switch Table	Field	Value	Description
ACDMISPL	POOL	xxxxxxx	The ACD pool name. The name must match the value that is configured on the CC MIS for the switch link.
	PASSWORD	xxxxxxx	The ACD pool password. The password must match the value that is configured on the CC MIS for the switch link.
	PROTOCOL	BCS <i>nn</i>	Specifies which ACD MIS protocol to run. Supported protocols are BCS 35 and BCS 43. Nortel recommends BCS 43.
	OUTEVENT	200	Specifies the maximum number of events held in the outgoing buffer.
	BUNDLING	Y	Specifies whether messages are bundled together in outgoing packets for better performance.

Table 42: Data link datafill (Part 8 of 8)

Switch Table	Field	Value	Description
ACDMISSP	SUBPOOL	xxxxxxx	The ACD subpool name. The name must match the value that is configured on the CC MIS.
	PASSWORD	xxxxxxx	The ACD subpool password. The password must match the value that is configured on the CC MIS.
	POOL	xxxxxxx	ACD Pool. This value must match the value that was previously configured in the ACDMISPL table.

Standard datafill example

Table 43 shows an example of minimum datafill for a switch with the typical values specified. Table 43 is a duplication of Table 42 on page 336 with example values assigned to the various parameters.

This configuration set should assure that a valid set of parameters exist on the switch for operation with CC MIS. Some of the link tables (that is, MPC and MPCLINK) vary from switch to switch depending site-specific configuration.

Table 43: Data link datafill example (Part 1 of 7)

Switch Table	Field	Value	Description
MPC	MPCNO	6	MPC number The number is assigned sequentially in the table.
	MPCIOC	2	The IOC on which the MPC card resides.
	IOCCT	20	The bottom circuit number of the MPC card determined by the position in the IOC. Must be a multiple of four.
	EQ	1X89BB	1X89BB indicates EMPC type equipment.
	DLDFILE	MPC403AC	For EMPC card supporting the X2584 protocol.

Table 43: Data link datafill example (Part 2 of 7)

Switch Table	Field	Value	Description
MPCLINK	LINKKEY	6	MPC number and link number.
	MPCNO	6	The number assigned to the MPC card. This number must match the number assigned in the MPC table.
	LINKNO	2	Specify which of the two synchronous MPC links is used (2 or 3).
	LINKALM	Y	Turns on link alarms.
	PRTCLDAT	X2584	Specifies the 1984 version of the X.25 standard.
	LINKNABL	0	Specifies 0 as the number of minutes a link is allowed to remain in the enabling state before it is busied out and reset.
	CONVNABL	0	Specifies 0 as the number of minutes that data transmission on the link is allowed to remain enabling without restarting the link.
	L2WINDOW	7	Specifies the frame window size as 7.
	L3DATA	P256	Specifies the packet size as 256 bytes.

Table 43: Data link datafill example (Part 3 of 7)

Switch Table	Field	Value	Description
	NODETYPE	DTE	Specifies the datalink to act as a DTE.
	CLKSRCE	EXTERNAL	Specifies that external clocking is used.
	SVCS2WAY	2	Specifies that there is 2 two-way switched virtual circuits.
	ELECSPEC	RS232	Specifies that the connection is RS232.
	N2	20	Specifies the frame retransmission count is 20.
	T1_10MS	150	Specifies the Ack timeout is 1.5 seconds.
	T2_10MS	20	Specifies that the send Ack guideline is 20.
	T4_S	2	Specifies that the idle frame transmission time is 2.
	T3_S	10	Specifies that the idle link timer is 10.
	L3WINDOW	7	Specifies that the packet window size is 7.
	THRUPUT	T48000	Specifies that the output throughput class is T48000.

Table 43: Data link datafill example (Part 4 of 7)

Switch Table	Field	Value	Description
	L3ACK	10	Specifies the Level 3 Ack timer is 10.
	SVCDNA	23456789	Specify an eight digit X.121 address for this datalink.
GDLADEV	APPLN	NOP	Specifies NOP as the data transfer application that is used.
	DEVICE	MPC	Specifies MPC as the device which is associated with the data transfer application.

Table 43: Data link datafill example (Part 5 of 7)

Switch Table	Field	Value	Description
NOPADDR	INDEX	18	Assign the identify the ACD MIS data link from which the switch receives data.
	UNIT	6	Specify the MPC number previously assigned in the MPC table.
	LINK	2	Specify the MPC data link previously assigned in the MPCLINK table.
	ADDRESS	23456789	Specify the Network Operations System Address of the data link. This address must match what was previously defined in the MPCLINK table.
	PROTOCOL	0 0 0 0	Valid protocol entry.

Table 43: Data link datafill example (Part 6 of 7)

Switch Table	Field	Value	Description
NOPAPPLN	DNAKEY	98765432	The Data Network Address. Must be the same as what was previously defined in the NOPADDR table.
	APPLNS	ALL or ONLY	Enter ONLY if you wish the Remote Operation service to restrict which applications a Data Network Address is authorized to access.
	APPLICATION_ID	ACDMIS_APPL	Enter ACDMIS_APPL only if field APPLNS = ONLY.
ACDMISPL	POOL	ACDPOOL1	The ACD pool name.
	PASSWORD	ACDACD	The ACD pool password.
	PROTOCOL	BCS43	Set the ACDMIS protocol to BCS 43.
	OUTEVENT	200	Set the value representing the number of events held in the outgoing buffer.
	BUNDLING	Y	Enables message bundling.

Table 43: Data link datafill example (Part 7 of 7)

Switch Table	Field	Value	Description
ACDMISSP	SUBPOOL	ACDSUB1	The ACD subpool name.
	PASSWORD	ACDACD	The ACD subpool password.
	POOL	ACDPOOL1	Set the ACD pool.

Appendix B

TCP/X.25 bridge devices

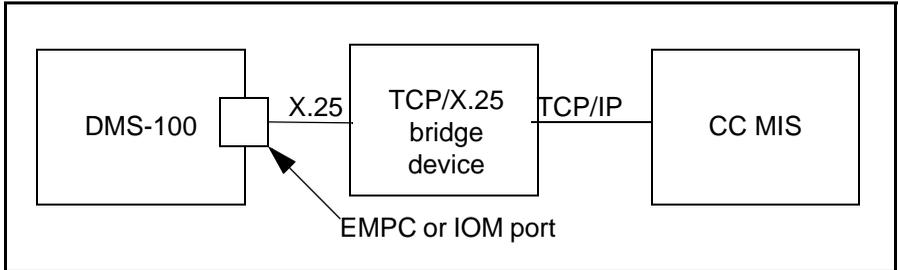
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Introduction

Where X.25 switch connectivity is required, you must use a TCP/IP bridge device, configured to bridge between an IP connection from the CC MIS server to an X.25 connection to the switch (see Figure 124).

Figure 124:



This appendix provides recommended solutions for the TCP/X.25 bridge device.

TCP/X.25 bridge solutions

Nortel ARN

The Nortel Advanced Remote Node (ARN) is legacy equipment that you can use to provide the IP to X.25 bridge between the CC MIS server and the DMS-ACD. The Nortel ARN retires August, 2007.

For more information about installing and configuring the ARN, see Appendix C, “TCP/IP switch links using ARN.”

Other tested solutions

Nortel has tested the following original manufacturer equipment (OEM) solutions for use as a TCP/X.25 bridge device with CC MIS:

- Develcon Athena Access
(www.develcon.com)
- FarSite Communications FarLinx TCP-X25 Gateway
(www.farsite.co.uk)

For more information about configuring the Develcon Athena Access or the FarSite Communications FarLinx TCP-X.25 Gateway, see the relevant Distributor Technical Reference (DTR) documents. DTRs are available on the Nortel Partner Information Center Web site at www.nortel.com/pic.

Appendix C

TCP/IP switch links using ARN

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Introduction

ATTENTION

As of June 30, 2007, the ARN portfolio, along with the associated hardware and cables, is no longer orderable as part of a CC MIS solution. For more information, see the Product Advisory Alert Bulletin *Announcing the Call Center Management Information System (CC MIS) Replacement Options for the Advanced Remote Node (ARN) Router* (PAA-2007-0045-Global). You can access this bulletin from the Nortel Partner Information Center Web site (www.nortel.com/pic).

This appendix is an installation tool intended to be used by Nortel personnel only. This appendix provides a guide for installing and configuring the Advanced Remote Node (ARN) router to provide X.25 connectivity to the DMS switch from the Ethernet interface on a CC MIS server machine.

This capability can be used with CC MIS Software Release 5.1 and later.

Regional requirements

USA requirements only

Federal Communications Commission (FCC) Compliance Notice: Radio Frequency Notice

This equipment generates, uses, and can radiate radio-frequency energy. If you do not install and use this equipment according to the instruction manual, this product may interfere with radio communications. This product has been tested and found to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Operating this equipment in a residential area is likely to interfere with radio communications; in which case, the user, at their own expense, must correct the interference. Shielded-compliant cables must be used with this unit to ensure compliance with the Class A limits.

European requirements only

EN 55 022 Declaration of Conformance

This is to certify that the Bay Networks products in this book are shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022:1987 Class A (CISPR 22:1985/BS 6527:1988). This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

EN 55 022 Declaration of Conformance

This is to certify that the Bay Networks products in this book are shielded against the generation of radio interference in accordance with the application of Council Directive 89/336/EEC, Article 4a. Conformity is declared by the application of EN 55 022:1987 Class B (CISPR 22:1985/BS 6527:1988).

Purpose

The purpose of this appendix is to communicate the method used to install and configure a DMS ACDMIS link using a Nortel Advanced Remote Node Router (formerly known as BayStack ARN) as an X.25 protocol converter. This protocol conversion allows the CC MIS server to communicate with the DMS switch using the native Ethernet interface on the server, rather than using an integrated X.25 communications module.

The CC MIS ability to communicate with the DMS switch using TCP/IP over Ethernet was introduced in Release 5.1 of the CC MIS product.

Feature definition

Background

The reliability of DMS X.25 MIS links can be affected by the serial communication equipment that composes the physical link (such as modems, DSUs, and cable connections). Failures in these transmission components results in loss of data. Reducing the complexity of these connections improves the reliability of the links.

Objective

The intent of the feature is to provide an alternative link configuration method by which X.25 is bridged to the TCP/IP protocol using an ARN router.

Note: The feature does not provide a direct TCP/IP connection to the DMS. The existing dedicated X.25 links are still required. However, the new router can be co-located with the DMS, allowing for the elimination of the data communication equipment (such as modems and DSUs) required due to the distance between the DMS and CC MIS server.

Hardware components

The hardware components are listed in the following tables:

- Table 44: "Router Component List"
- Table 45: "Power Cords" on page 362
- Table 46: "44-Pin Serial Cables" on page 362
- Table 47: "Field Replacement Components" on page 363

Table 44: Router Component List

Item	Part Number	Description	Notes
1	A0540168	CC MIS ARN Package, consisting of: <ul style="list-style-type: none"> ■ CV1001014 ARN 10/100M-TX UTP Base Unit (16M DRAM) ■ CV0008094-15.5 ARN IP Access Suite (16M PC Card) ■ AP0000023-15.5 Site Manager 15.5 CD-ROM 	Base Requirement
2	See Table 45 on page 362	Power cord Choose a power cord from Table 45 on page 362.	Base Requirement
3	CV0004001	ARN Serial Adapter Module Choose a cable for the X.25 link from Table 45 on page 362.	One Link. Maximum 2 per ARN.
4	CV0004011	ARN Tri Serial Expansion Module Choose a cable for each X.25 link from Table 46 on page 362.	Three Links. Maximum 1 per ARN.

Table 45: Power Cords

Part Number	Description
AA0020023	Power Cord 10A-110/120V North America
AA0020007	Power Cord 10A/220-230V Europe
AA0020019	Power Cord 10A/240V British
AA0020021	Power Cord 12A/100V Japan

Note: Other regional power cords are available.

Table 46: 44-Pin Serial Cables (Part 1 of 2)

Part Number	Description	Notes
DCE Cables (Direct Connection to Switch)		
AA0018064 (7943)	Female RS-232 SDLC Pass-Thru (15 ft)	For direct connection to any of: <ul style="list-style-type: none"> ■ IOC shelf NT1X61AD with cable NT0X26LY ■ IOC shelf NT1X61AG with cable NT0X96GS ■ IOM smart connector NTFX34AA
AA0018068 (7944)	Female V.35 SDLC Pass-Thru (15 ft)	For direct connection to any of: <ul style="list-style-type: none"> ■ IOC shelf NT1X61AD with cable NT0X96EF ■ IOC shelf NT1X61AG with cable NT0X96HG ■ IOM smart connector NTFX35AA

Table 46: 44-Pin Serial Cables (Part 2 of 2)

Part Number	Description	Notes
DTE Cables (Modem Connection to Switch)		
AA0018049 (7826)	Male RS-232 Standard DTE (15 ft)	For an RS-232 connection to a synchronous modem.
AA0018060 (7220)	Male V.35 Standard DTE (15 ft)	For a V.35 connection to a synchronous modem.

Note: A gender bender adaptor can be used if the opposite gender connector is required.

Table 47: Field Replacement Components

Part Number	Description	Replacement For
CV0011001	ARN Serial Adapter Module	CV0004001
CV0011011	ARN Tri Serial Expansion Module	CV0004011

Before you begin

Before using this appendix, you must coordinate with the CC MIS administrator and the network administrator for the site at which the router is being installed. You must do the following:

- Assign an IP address (and subnet mask) to the router.
- Determine the IP address of the PC to be used as the router site manager.
- Determine the first hop IP address of your network (default gateway).
- Determine if the router will be rack-mounted or sit on a shelf.
- Determine the distance between the DMS MPC/EMPC card and the router.
- Determine availability of 120 VAC power supply to the router.

Installing the Advanced Remote Node (ARN)

This section describes how to install the ARN. Topics include the following:

- preparing to install the ARN
- installing the ARN
- connecting communication cables
- connecting a management console
- connecting a modem
- connecting the power cable
- installing the Flash memory card

Note: The installation instructions in this appendix assume that wiring is already installed on the premises using common cable system practices. Your exact installation procedure can differ slightly, depending on your particular cable system.

Verify shipping contents

Verify that the items in the shipping container match those on the packing list.

Note: You can find the packing list affixed to the shipping container.

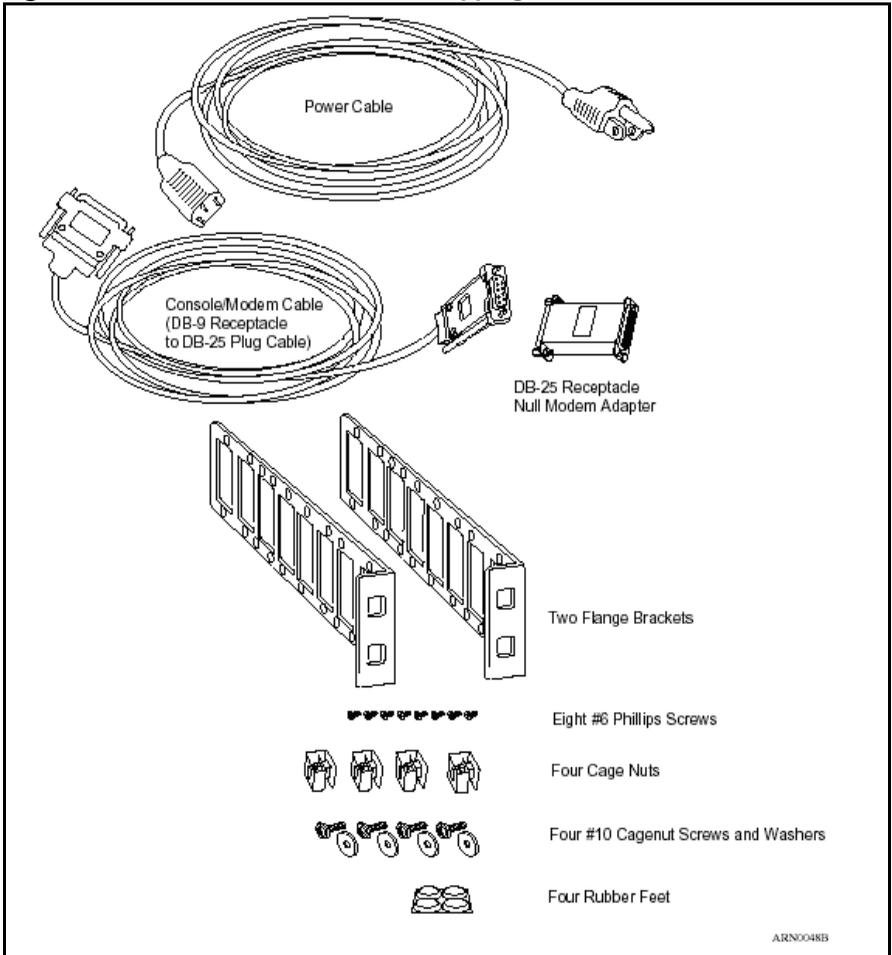
See the following checklist when verifying the contents of the shipping container (also see Figure 125 on page 366). This list is for the ARN only. Other items (that is, Serial Expansion Modules and cables) may be in separate shipping containers.

- One power cable for connecting the ARN to a wall outlet.
- One cable kit (Order No. 110310) for connecting an optional local console or modem. The console/modem cable kit contains one 15-foot

AT standard molded serial cable (with DB-9 receptacle to DB-25 plug connectors) and one null modem crossover adapter (with DB-25 to DB-25 receptacle connectors).

- Two flange brackets and eight #6 flathead screws.
- Four #10 cagenut screws and washers for rack-mounting the ARN.
- Four rubber feet (for table-top operation).

Figure 125: Accessories in the ARN shipping container



Supplying equipment

You may need items that are not part of the ARN accessory package. Before installing the ARN hardware, ensure that you have all the cables, tools, and other equipment that you need.

Cables

Unless they were specifically ordered, the cables necessary for your network configuration are not part of the ARN accessory package. If you do not have the proper cables, contact your network administrator.

Service console

You can attach an optional VT-100 console (or equivalent) to the ARN to monitor the results of startup diagnostics and perform manual boot configurations. Or you can attach any AT compatible modem to allow remote dial-in access to diagnostics and configuration.

Note: To use the Netboot, Directed Netboot, or Local Boot configuration options (see “Before you begin” on page 364), you must have a local terminal connected the first time the ARN powers up.

Mounting hardware

To rack-mount the ARN, you need a Phillips screwdriver and an electronic enclosure rack that meets the following specifications:

- heavy-duty steel construction
- Electronic Industries Association (EIA) standard hole-spacing
- width of 19 in. (48.26 cm) and depth of 24 in. (60.96 cm)

If the rack does not have threaded rail holes, you must use cagenuts (see Figure 125 on page 366) with the cagenut screws.

Verifying site requirements

The installation site must provide a certain amount of free space around the ARN to dissipate heat, as detailed in Table 48.

Table 48: Installation Space Requirements

Width	Depth (minimum)	Depth (for servicing)
22.5 in (57.2 cm)	15 in (38.1 cm)	25 in (63.5 cm)



CAUTION

Risk of electrical shock

You must use grounded electrical power outlets with the ARN.

Installing the ARN

When you are ready to install the ARN in its final location, you can:

- Position the ARN on a flat, sturdy, horizontal surface.
- Mount the ARN in an electronic enclosure rack.

Positioning the ARN on a flat surface

When positioning the ARN on a flat surface, make sure that the surface is:

- large enough for the ARN to operate properly
- sturdy enough to support the combined weight of the ARN and any cables that you connect

Nortel recommends that you place the self-adhesive, rubber feet on the bottom of the ARN chassis (shipped with the ARN). These feet not only protect the surface on which you position the ARN, they provide added friction against the weight of any cables that you attach to the device.

Rack-mounting the ARN

To rack-mount the ARN, follow the steps in Procedure 64. For this procedure, you need the following:

- four #10 cagenut screws and washers (shipped with the ARN)
- two flange brackets and eight #6 flathead screws (shipped with the ARN)
- a Phillips screwdriver
- an electronic enclosure rack

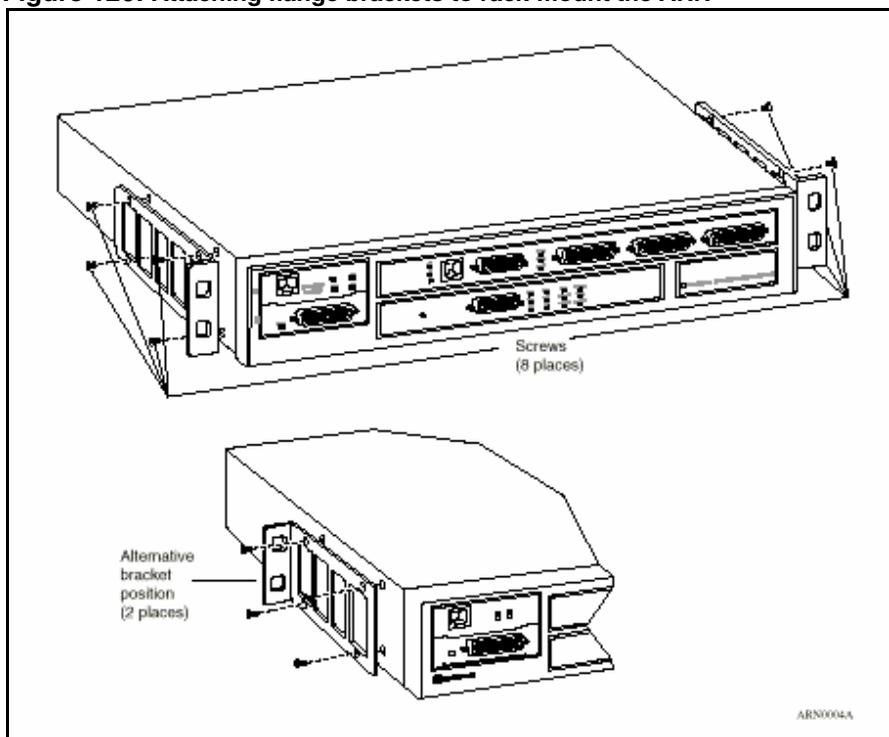
Note: If the rack does not have threaded rail holes, you must supply and attach four cagenuts.

Procedure 64: Rack-mounting the ARN

- 1 Attach a flange bracket to both sides of the ARN.

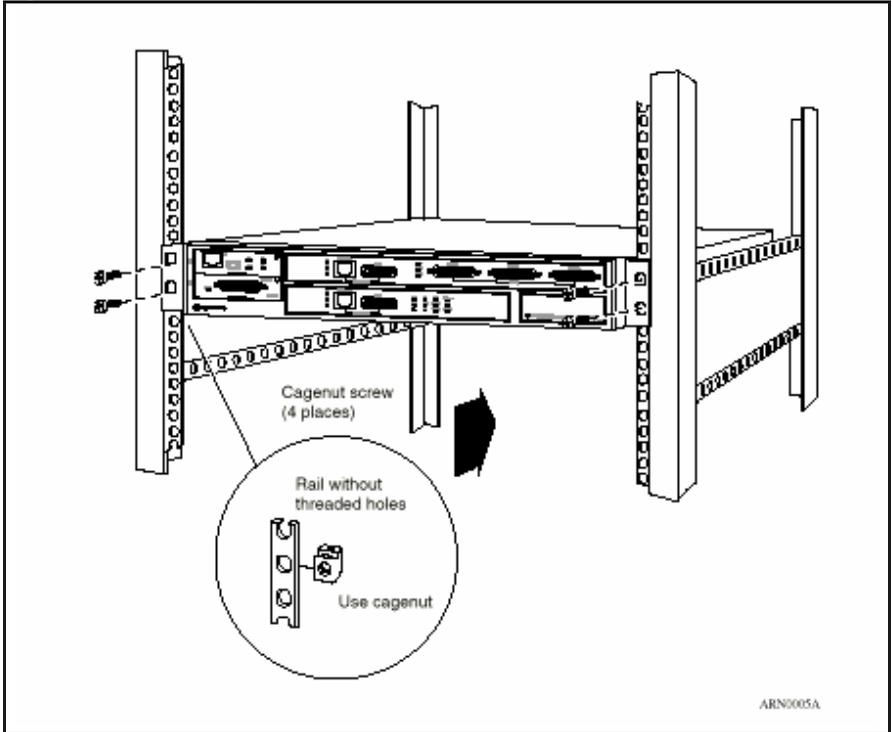
On each side of the chassis, do the following:

- a. Align the holes in the longer end of the flange bracket with the mounting holes near the front panel of the ARN (see Figure 126 on page 370).
- b. Insert a #6 flathead screw through each hole and into the ARN.
- c. Tighten the four screws with a Phillips screwdriver.

Figure 126: Attaching flange brackets to rack-mount the ARN

- 2 Align the holes in the shorter end of the flange bracket with the holes in the front vertical supports of the rack (see Figure 127).

Figure 127: Installing the ARN in an Electronic Enclosure Rack



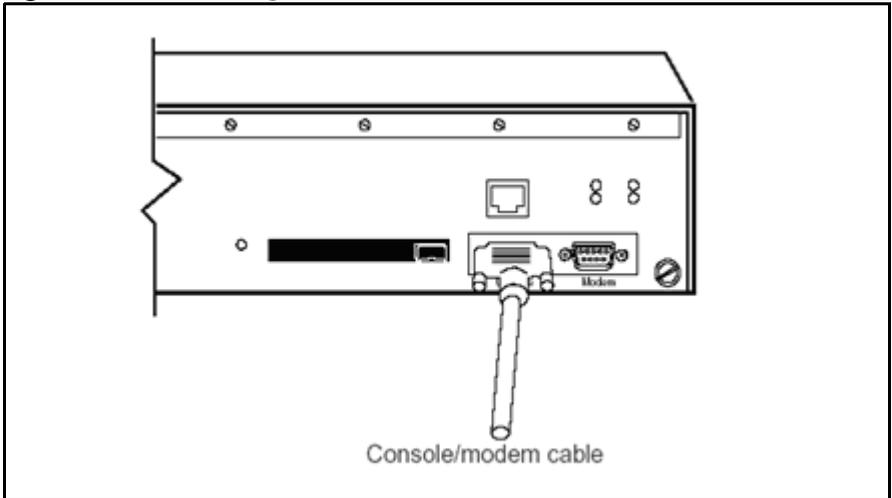
- 3 Insert a cagenut screw through each bracket hole and into the corresponding holes in the rack.
- 4 Tighten each cagenut screw with a Phillips screwdriver.

Connecting communications cables

Connecting a management console

The management console interface is a DB9 port on the back of the ARN labeled “console”. The console is used to perform initial setup of the ARN, including setup of the IP address of the ARN and related information.

Figure 128: Connecting a console cable



To connect a PC running terminal emulation software or a terminal to the console port, the following equipment is required:

- A serial cable with a female DB9 connector for the ARN end and an appropriate connector on the PC or terminal end depending on the requirements of the PC (or terminal).
- A null modem adaptor to be inserted in either end of the cable.

Perform the steps in Procedure 65 to connect the PC (or terminal) to the management console port:

Procedure 65: Connecting the PC (or terminal) to the management console port

- 1 Connect the cable from the console port of the ARN (see Figure 128 on page 372) to an available COM port on the PC (or terminal).
- 2 Use the terminal emulation software communications setup screen (or terminal setup screen) to configure the communications settings as follows:
 - 9600 baud
 - 8 data bits
 - 1 stop bit
 - no parity

Connecting to an Ethernet interface

You can connect an Ethernet cable to any ARN base or expansion module that contains an Ethernet interface option. Each Ethernet interface option offers two Ethernet interface types — an AUI transceiver interface or a 10Base-T interface.

Note: You can use only one Ethernet interface on an ARN base or expansion module at any time. For example, you can connect to either the AUI transceiver interface or the 10Base-T interface on a base module, but you cannot use both interfaces at the same time.

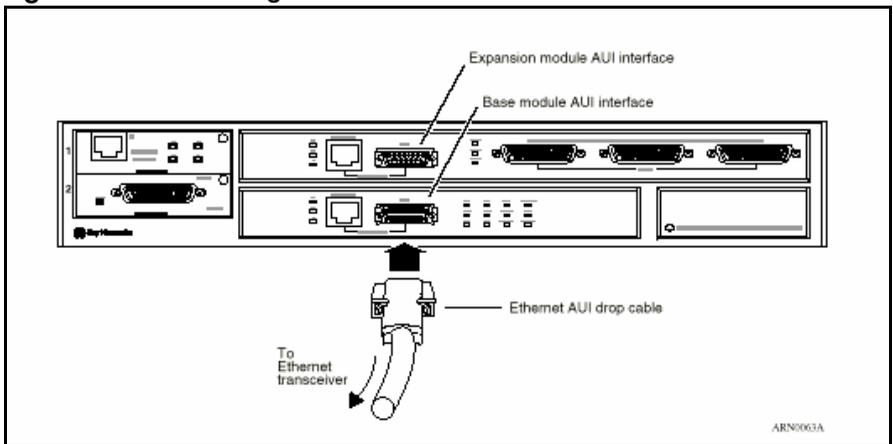
To connect an Ethernet AUI transceiver cable to an AUI interface use Procedure 66 on page 374.

To connect an Ethernet AUI transceiver cable to a 10Base-T interface use Procedure 67 on page 375.

Procedure 66: Connecting an AUI Interface**ATTENTION**

Connecting the ARN AUI interface directly to the AUI interface on an Ethernet station violates IEEE 802.3 standards. The AUI interface is designed only for connection to a transceiver. The cable must have a 15-position D-SUB receptacle.

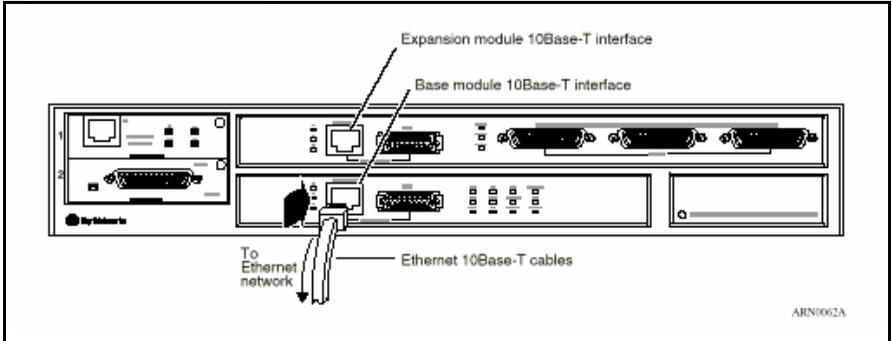
- 1 Connect an Ethernet AUI drop cable to the interface labeled AUI (see Figure 129).
- 2 Secure the AUI cable using the slide lock on the interface.
- 3 Connect the other end of the cable to an Ethernet transceiver.

Figure 129: Connecting an AUI cable

Procedure 67: Connecting a 10Base-T Interface

- 1 To connect an unshielded twisted-pair (UTP) cable to the base module or expansion module 10Base-T Ethernet interface, insert the UTP jack into the RJ-45 interface, as shown in Figure 130.

Figure 130: Connecting a 10Base-T Ethernet cable



Connecting to a serial interface

The ARN supports up to nine serial interfaces. You can connect:

- Up to seven 50-pin serial cables to an ARN that contains a 7-Serial Expansion Module.
- Up to three 44-pin serial cables to an ARN that contains a Tri-Serial Expansion Module.
- One 44-pin serial cable to each Serial Adapter Module (the ARN can support two).

Follow the steps in Procedure 68 to connect to a serial interface.

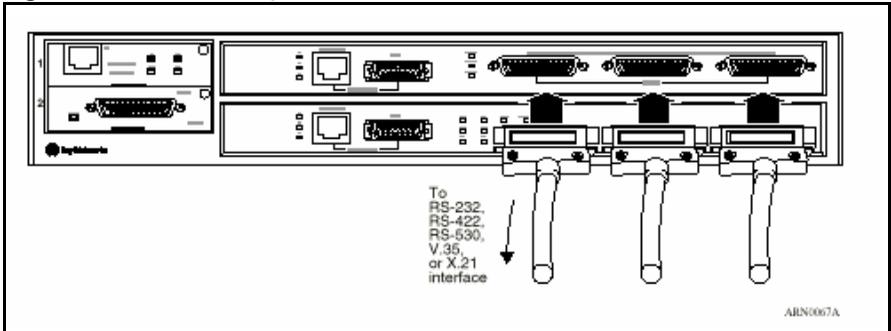
Procedure 68: Connecting to a serial interface

- 1 Locate the X.25 interface cable.

The cable has a 25-pin connector on one end and a 44- or 50-pin connector on the other. A gender changer can be required.

- 2 Connect the cable to a serial interface.

The serial interfaces on an ARN expansion module are labeled COM, or COM3, COM4, COM5, and so on (see Figure 131). The 44- or 50-pin connector is attached to the interface.

Figure 131: Connecting serial cables to an expansion module

- 3 Secure the cable to the interface using the capture screws on the cable.
- 4 Connect the 25-pin connector of each cable to the existing X.25 link.

Connecting the power cable

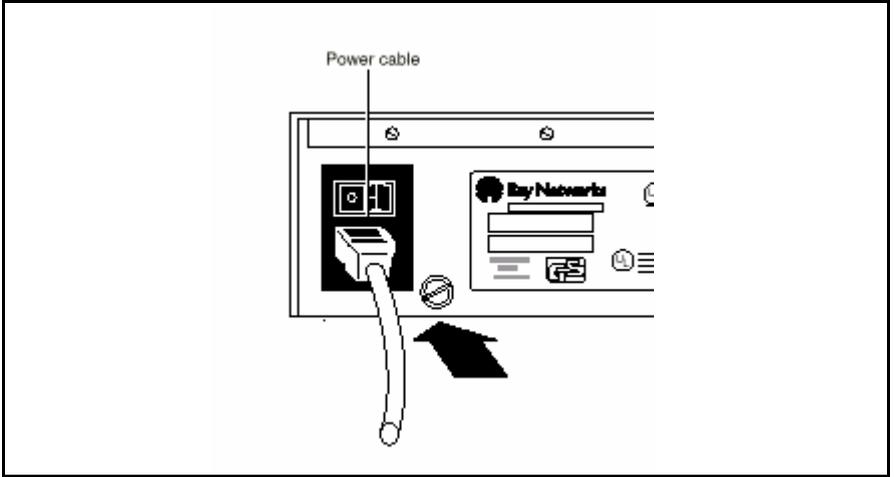
Use the steps Procedure 69 in to connect the power cable.

Procedure 69: Connecting the Power Cable

- 1 Connect the power cable to the power connector on the ARN back panel (see Figure 132 on page 377).
- 2 Connect the remote end of the power cable to a grounded outlet.

Attention: Ensure that the power switch is in the OFF (0) position before you connect the power cable.

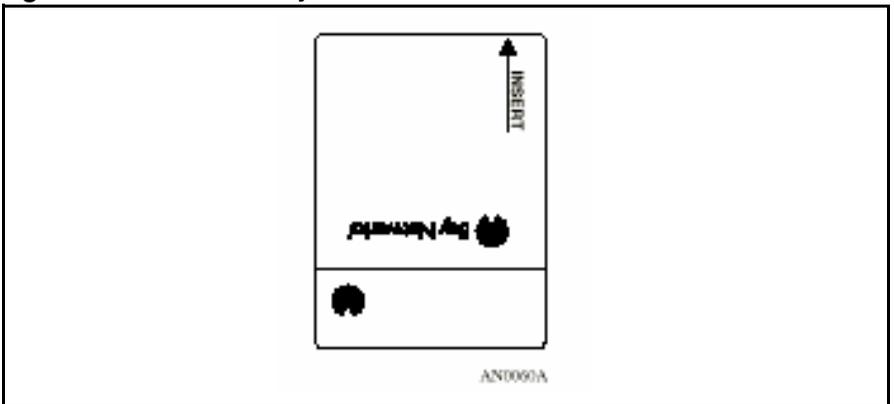
Figure 132: Connecting the power cable



Installing the Flash memory card

A Flash memory card (see Figure 133) provides storage capability for the Nonvolatile File System (NVFS) in the ARN. When you remove a formatted memory card, the NVFS automatically removes access to the card. When you insert and format a card or insert an already formatted card, the NVFS automatically provides access.

Figure 133: Flash memory card



Before starting the ARN, install the Flash memory card supplied with the router by following these steps in Procedure 70.

Procedure 70: Installing the Flash memory card

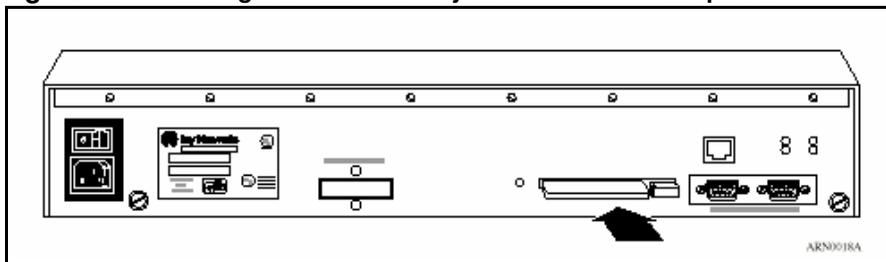
- 1 Position the card with the label facing up and the INSERT arrow pointing toward the card receptacle.
- 2 Insert the card into the receptacle.

Figure 134 shows how to insert the Flash memory card in an ARN.

- 3 Gently push the card until it fits snugly into place.

Note: If the card is new and you did not obtain it from Nortel, you must format the card before attempting to write to it. You can format the card using Site Manager or the format command available with the Bay Networks Technician Interface.

Figure 134: Inserting the Flash memory card in the ARN receptacle



Note: For instructions, see the *Using Technician Interface Software* manual for instructions. This manual can be found at the following web site:
<http://www25.nortelnetworks.com/library/tpubs/nav/router/soft1420.htm>

Configuring the Ethernet link on the ARN

When you are finished with the procedures in this section, the router can communicate with the network management station over the IP network. You are then ready to install the Site Manager software, as described in the next section.

Each procedure step requires you to do one of the following things:

- Enter **e** for Yes; **n** for No; **q** for Quit.
- Enter a word or phrase referred to as a “text string.”
- Press <Return> to accept default displayed in square brackets [].

You must press the Return key after entering one of the previous responses.

Connecting to the IP network

When you obtained your router, you also received a cable to connect the router to your IP network.

To connect the cable from the router to the IP network, follow the steps in Procedure 71.

Procedure 71: Connecting router cable

- 1 Connect the cable to a router connector.
- 2 Connect the cable to the network connector.

Note: Ensure the cable is connected to the 10Base-T or AUI Interface as instructed in “Connecting a management console” on page 372. The network connection depends on your LAN or WAN configuration.

Logging on to the Technician Interface

When you connect to a Nortel router and establish a terminal session, the Technician Interface Login prompt appears. The Technician Interface is a command-line interface provided with every Nortel router.

You use the Technician Interface to:

- View the router file system.
- Configure a new router to use the Local Boot option.
- Run the Quick-Start installation script (inst_arn.bat).
- Enter commands to manage your router and its MIB variables.

To use the Technician Interface, follow the steps in Procedure 72.

Procedure 72: Using the Technician Interface

- 1 Turn on power to the router and allow it to boot completely without interruption.

The boot process is complete when a login prompt appears on the console.

- 2 Log on to the Technician Interface, by typing **Manager** at the login prompt.

Note: The log in is case-sensitive; ensure that you type the uppercase letter M.

By default, there is no password on the Manager account so no password prompt appears.

The Technician Interface prompt consists of the slot and the console where it is physically connected followed by the dollar sign (\$). For example, if the Technician Interface is running on slot 2, console 1, the prompt is:

```
[2:1]$
```

Note: To log off the Technician Interface, type **logout** at the prompt.

Configuring the ARN router for local boot

When shipped from the factory, the ARN router is configured to run EZ-Install during the ARN router boot sequence. This procedure attempts to boot the ARN from the serial interfaces using various protocols. Because the this application of the ARN router always gets its configuration locally from the installed flash memory, you can significantly reduce boot time by configuring the ARN to use the local boot option.

At the Technician Interface prompt type:

```
bconfig config local
```

Configuring the Ethernet link

Start the Quick Start Installation script

At the Technician Interface prompt type:

```
inst_arn.bat
```

Note: The following screen information can differ from actual screen content depending on the components installed in the router.

Before you begin this procedure, you should gather the network information listed below:

You Need to Know This Information:	For Example:
Communication type and connector number	Ethernet XCVR1
IP address of initial IP network interface	192.32.10.189
Subnet mask of initial IP network interface	255.255.255.0
IP address of Site Manager workstation	192.32.10.100

```
Do you wish to continue? (y/n)[y]: y <return>
```

Select the module number that has the Ethernet port

Module	Module ID	Description
1	8728	10/100BASE-TX Ethernet on Base Module
2	8736	Serial on Adapter Module 1
3	0	on Adapter Module 2
4	8848	Tri-Serial on Expansion Module

Enter the module number [1]: 1 <return>

Configure RMON Data Collection

Enable the RMON Data Collection Module? [y]: n <return>

Enter circuit name

Recommended Circuit Name: E11

Enter circuit name [E11]: <return>

Accept the default circuit name.

IP configuration

Specify the IP configuration information for the network interface.

IP Configuration menu

IP address format: ###.###.###.###

IP subnetwork mask format: ###.###.###.###

Example: 255.255.255.0

Enter IP address in dotted decimal notation: ###.###.###.###
<return>

Enter IP subnetwork mask in dotted decimal notation:
###.###.###.### <return>

IP routing protocol configuration

Because the ARN router is typically not on the same network as the Site Manager workstation, you must configure an IP Routing Protocol to manage the ARN remotely. In most cases, a static route will be set up on the router, however in some cases RIP can be used. This section describes both methods.

If a default gateway (or route) was provided by the customer, choose the static route method, otherwise configure the RIP protocol. The last step in the configuration process is a test of the IP interface. If you configured RIP and the test fails, you must repeat the configuration using a static route.

Configuring IP routing using a static route

```
Is the router connected to the same local area network as
the Site Manager
```

```
workstation? (Y./n)[n]: n <return>
```

```
IP Routing Protocol Configuration Menu
```

```
-----
```

1. RIP
2. OSPF
3. Static Route to Site Manager.

```
Enter Routing Protocol Number [1]: 3 <return>
```

```
Destination Network [0.0.0.0]: <return>
```

```
Destination Network Mask[0.0.0.0]: <return>
```

```
Next Hop Address: ###.###.###.### <return>
```

Enter the IP address of the first portal into the network (that is, the first gateway into the routers on the corporate LAN). It must be on the same network as the router.

```
Follow the default route for unknown subnets? (y/n) [n]: y
<return>
```

```
Are the values specified correct? (y/n) [n]: y <return>
```

Answer y if the values scrolled across the screen are correct. Answer n if the values are incorrect.

Configuring IP routing using RIP

Is the router connected to the same local area network as the Site Manager

workstation? (y/n)[n]: n <return>

IP Routing Protocol Configuration Menu

1. RIP
2. OSPF
3. Static Route to Site Manager.

Enter Routing Protocol Number [1]: 1 <return>

RIP listens to a specific route to the network or subnet where Site Manager is located. If you also want RIP to listen to the default route (0.0.0.0) then answer y below. The default route is useful when no specific route is available in the RIP updates received by this router.

Should RIP listen to the default route? (y/n)[n]: y <return>

Follow the default route for unknown subnets? (y/n)[n]:y <return>

Specify the version of RIP. The default is to run RIP1. RIP2 runs RIP2 without the automatic aggregation of subnets that RIP1 provides.

RIP2_AGGR provides the automatic aggregation of subnets for RIP2.

1. RIP1
2. RIP2
3. RIP2_AGGR

Enter Routing Protocol Number [1]: 1 <return>

RIP Configuration Complete

SNMP community management

Setting up SNMP community management is optional.

It allows you to limit control of this router to a single Site Manager workstation at a given IP address. The default is to allow any Site Manager from any workstation to manage and to configure the router.

Note: You can later configure this using Site Manager.

```
Do you wish to set SNMP community management? (y/n) [n]: y
<return>
```

```
Enter IP address of Site Manager workstation:
###.###.###.### <return>
```

```
Enter SNMP management community name [public]: XXXXXX
<return>
```

Note: For security reasons, do not leave as public.

Disable the TFTP server

To improve security, Nortel recommends that you do not enable the TFTP server.

```
Do you want to enable TFTP? (y/n) [n]: n <return>
```

Disable the FTP server

To improve security, Nortel recommends that you do not enable the FTP server.

```
Do you want to enable FTP? (y/n) [n]: n <return>
```

Enable the Technician Interface using Telnet

Enabling the Technician Interface using Telnet allows router problems to be debugged from the CC MIS server. It is highly recommended that the Telnet interface be enabled, however it can be disabled if the customer prefers without impacting the functionality of the ARN router.

```
Do you want to enable TI TELNET? (y/n) [n]: y <return>
```

```
TI TELNET enabled.
```

Disable the HTTP (Web) server

To improve security, Nortel recommends that you do not enable the HTTP server.

```
Do you want to enable the HTTP (Web) server? (y/n)[n]: n
<return>
```

Save the configuration file

```
Configuration Summary
```

```
-----
Net Module:          ARN_TX_N100
Module Number:      1
Connector:          1
Slot:                1
Circuit Name:       E11
IP address:          ###.###.###.###
IP subnetwork mask: ###.###.###.###
Destination addr.:  0.0.0.0
Destination Mask:   0.0.0.0
Next Hop Address:   ###.###.###.###
TI TELNET:          Yes
Site Manager's IP:  ###.###.###.###
SNMP Community name: XXXXX
HTTP Server:        No
```

```
Press [RETURN] to continue: <return>
```

The Quick-Start configuration of the router is now complete and active.

```
Do you wish to save this configuration to a file? (y/n)[y]:
y <return>
```

Default file name is startup.cfg on the current volume.

NOTE: Do *NOT* name this file 'config'. Later, you may wish to rename this file 'config' after you perform a named boot and verify its operation.

```
Enter file name [startup.cfg]: ccmis.cfg <return>
```

Test IP Interface configuration

After entering the configuration file, the router tries to ping itself and the Site Manager.

```
IP Interface ###.###.###.### is up.
```

```
Testing local IP interface.
```

```
ping -IP ###.###.###.### -r5
```

```
IP ping: ###.###.###.### is alive (size = 16 bytes)
```

```
IP ping: ###.###.###.### is alive (size = 16 bytes)
```

```
IP ping: ###.###.###.### is alive (size = 16 bytes)
```

```
IP ping: ###.###.###.### is alive (size = 16 bytes)
```

```
IP ping: ###.###.###.### is alive (size = 16 bytes)
```

This test attempts to ping the Site Manager workstation.

NOTE: If routing has not yet converged, an attempt to ping the Site Manager workstation may fail. If this happens, you may either enter a new IP address or quit and wait a short period of time and try again from the TI command line.

```
Do you wish to setup another port/module? (y/n)[y]: n  
<return>
```

Note: If the router can ping itself but not the Site Manager, go through the configuration once again, this time using a static route instead of configuring the RIP routing protocol.

Installing Site Manager

A software management tool called Site Manager is used to configure, manage, and monitor the ARN.

Note: Site Manager communicates with the ARN using the SNMP protocol. Therefore, if there is a firewall between the PC running Site Manager and the ARN, the firewall must be configured to pass the SNMP protocol or Site Manager cannot communicate with the ARN.

Before it can operate, the ARN hardware must boot a software image. The software image is a group of executable files that operate the protocols that the network requires. This image is called `arn.exe`. The software image comprises the following executable startup files:

- A `krnl_arn.exe` (for the ARN) that contains the operating system kernel.
- Application files — executable files needed to perform the functions specified in the configuration file. All application files have `.exe` filename extensions. (For example, the router needs an `ipx.exe` executable file to run IPX.)
- String files — compressed ASCII files needed when you use the Technician Interface to display the event log or management information base (MIB) object names. Groups of string files remain in compressed format within the `an.exe` or `arn.exe` file until needed.

To bridge and route traffic, the ARN also needs a configuration file that is tailored to your network. A configuration file is a binary system file that contains hardware and software configuration data. The default configuration file is named `'config'`.

Inspecting the upgrade kit

Check your upgrade kit to ensure that it contains the following BayRS and Site Manager Version 15.xx components:

- CD containing BayRS and Site Manager software
- CD containing the online documentation library
- Printed versions of the following guides:
 - BayRS Release Notes and Site Manager Release Notes
 - Read Me First (if applicable)
 - Task Map
 - BCC Quick Reference
 - Known Anomalies
 - Document Change Notice (DCN) (if applicable)
 - BayRS and Site Manager Software Installation

Site Manager upgrade prerequisites

Site Manager is a graphical user interface (GUI) for performing router configuration and management over an IP network. To run Site Manager Version 15.xx, the PC on which it is installed must meet the hardware and software requirements listed in Table 49.

Table 49: Site Manager system requirements

Platform	Hardware and Software Requirements
PC, Windows 98	486 PC (Pentium recommended) Microsoft ® Windows ® 98 16 MB of RAM (minimum) 85 MB of free disk space Microsoft TCP/IP and compatible network adapters and driver CD-ROM drive VGA monitor (SuperVGA monitor recommended)
PC, Windows NT/2000/XP	486/100 (Pentium workstation recommended) Windows NT ® Version 4.0 16 MB of RAM (minimum) 85 MB of free disk space Microsoft TCP/IP and compatible network adapters and driver CD-ROM drive VGA monitor (SuperVGA monitor recommended)

Preinstallation procedures for a Windows 98 PC

Updating TCP/IP, network adapters, and drivers

Site Manager for Windows 98 requires the Microsoft TCP/IP protocol stack provided with Windows 98 and a compatible network adapter and driver. If you purchased a PC with Windows 98 and a network adapter installed, most likely you have the correct TCP/IP protocol stack, network adapter, and driver. Go to “Testing TCP/IP” on page 392.

To add or update a protocol, network adapter, or driver, see the appropriate documentation and support from Microsoft and the adapter manufacturer. Protocol and driver updates are added from the Network option of the Control Panel. New network adapters and their drivers are added from the Add New Hardware option of the Control Panel.

Windows 98 attempts to match a driver to the network adapter installed on your PC. If it cannot match a compatible driver, you must update the driver. Contact the adapter manufacturer for the latest drivers. Microsoft and other Windows 98 Web sites may also have updated drivers.

See the Resource Kit that came with your version of Windows for additional technical information about these issues. A hard copy is available from Microsoft Press.

Preparing the Network Control Panel

In addition to obtaining the supported TCP/IP protocol, network adapters, and drivers, you need to configure the Network option of the Control Panel with the required information for your network.

Choose Control Panel > Network > TCP/IP > Properties to display the TCP/IP properties menu, which contains tab windows for the following information:

- IP address
- WINS configuration
- Gateway
- Bindings

- Advanced
- DNS configuration

See your Windows 98 Help or documentation for information about setting the parameters in these windows.

Testing TCP/IP

Before installing Site Manager, use Procedure 73 to send a ping request to the router to ensure that your computer TCP/IP function is running.

Procedure 73: Testing TCP/IP

- 1 From the **Start** menu, choose **Programs > MS-DOS Prompt**.
- 2 Enter the following command to ping your router.

```
ping <ip_address>  
(where the <ip_address> is the IP address of your router)
```

Messages appear at the prompt indicating whether replies were received. Replies verify that your Microsoft TCP/IP protocol stack is functional.

Preinstallation procedures for a Windows NT/2000/XP PC

Preparing the Network Control Panel

Before installing Site Manager, send a ping request to the router to make sure that your computer TCP/IP function is running, using the same steps as in Procedure 73 on page 392.

Loading and starting Site Manager

ATTENTION

If you are installing a new version of Site Manager, be aware that the installation overwrites the `c:\windows\siteman.ini` file. If you plan to run more than one version of Site Manager on the same workstation, copy the existing `siteman.ini` file under a new name, then edit the newly installed `siteman.ini` file to include the information from the previous versions.

To install the Nortel Site Manager software from a CD, use the steps in Procedure 74

Procedure 74: Installing the Site Manager software

- 1 Insert the Nortel Site Manager CD into your CD-ROM drive.
- 2 Select **Start > Run** to access the Run window.
- 3 Type the CD-ROM drive, path, and executable file as follows:

```
<CD-ROM_drive>:\ms_win\setup.exe
```

Note: Drive D: is usually the CD-ROM drive. However, enter your drive letter if it is not D.

- 4 Click **OK**.

Note: You can also use the Browse button, Windows Explorer, or My Computer to select the CD-ROM drive and the path to the `ms_win` directory, and then click `setup.exe`.

- 5 If prompted to do so, enter the path to the directory where the TCP/IP services file is located.

Note: This prompt only occurs on Windows NT/2000/XP systems. The TCP/IP services file is different from the `services.exe` file. If the TCP/IP services file is not located in the default directory, (`C:\WINNT\system32\drivers\etc`), the installation script prompts you for the directory.

The installation script prompts you for the directory in which you want to install Site Manager.

- 6 Enter the name of the directory in which to install Site Manager, or accept the default directory (c:\WF).

The Site Manager files are installed in the chosen directory. When the installation is finished, the following prompt appears:

```
Create Windows program group/items automatically?
```

- 7 To add Site Manager as a selection on the Start > Programs menu, click **Yes**.

This option allows you to start Site Manager after installation by choosing **Start > Programs > Site Manager > PC_Site Manager**.

Note: If you do not want Site Manager to appear as a selection on the Start > Programs menu, click **No**.

The following prompt appears:

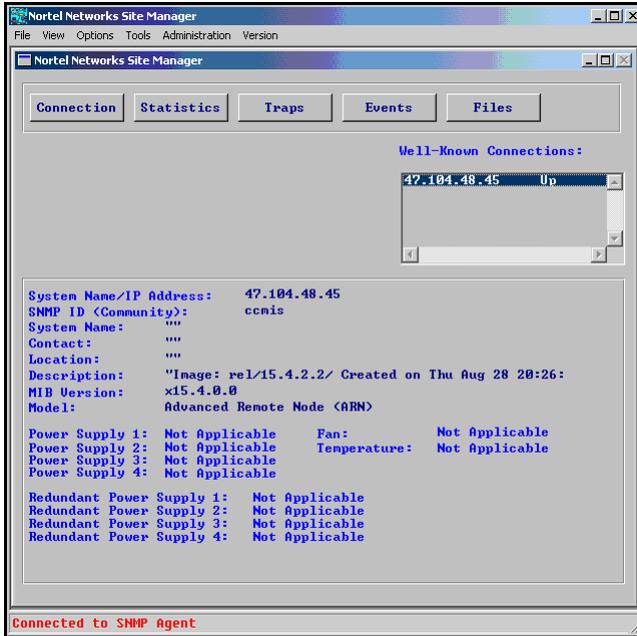
```
Do you want to start Site Manager now?
```

- 8 Click **Yes** to start Site Manager.

The Router Connection Options window appears.

- 9 Enter the **IP address** and **SNMP community** of the initial router interface created during the Quick-Start procedure.

- 10 Click **OK** to display the main Site Manager window (see Figure 135 on page 395).

Figure 135: Site Manager window

After you successfully install and start Site Manager, see *Configuring and Managing Routers with Site Manager* for more information. This document is available at the following web site:
<http://www25.nortelnetworks.com/library/tpubs/nav/router/soft1420.htm>

Configuring an X.25 link on the ARN

This section describes the procedure for configuring an X.25 link on the ARN router. After the link is configured on the ARN, the CC MIS system is able to connect to the DMS switch through the ARN.

Before starting this procedure, you need the following information:

- The COM port on the ARN router to be used for this link.
- The DNA of the NOP link on the DMS switch (an 8 digit X.121 address). It can be found in DMS tables MPCLINK and NOPADDR.
- The desired X.25 link speed (9600, 19200 or 56K baud).
- Whether the X.25 link to the switch uses a direct cable connection or synchronous modems.
- The TCP port number to be assigned to this link (in the range 12304 to 16399). CC MIS connects to this port to initiate a connection to the switch.

Starting Site Manager on the PC

To start Site Manager, use the steps in Procedure 75.

Procedure 75: Starting the Site Manager application

- 1** From the Windows desktop, click the **Start** button.
- 2** From the Start menu, choose **Programs > Site Manager > PC_Site Manager**.

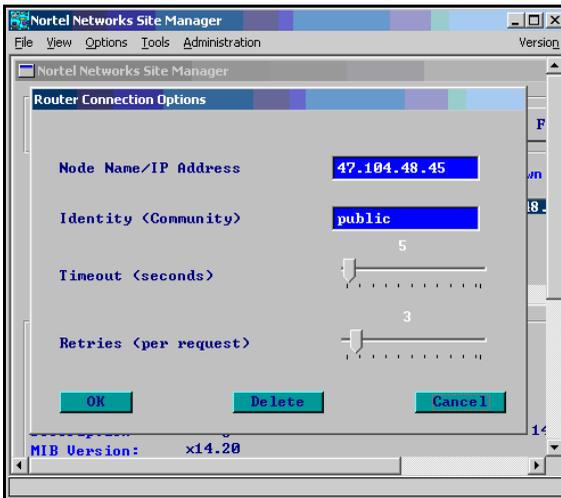
The main Site Manager window appears (see Figure 135 on page 395).

Adding the router to Site Manager

When Site Manager is started the first time (that is, no routers have been configured yet) the Router Connection Options window appears automatically allowing you to enter the IP address of the first router. If Site Manager is being used to manage multiple routers, you may have to open the Router Connection Options window manually to add the new router you wish to configure. To do this, select the Options > Connections menu.

If the router you wish to configure is already displayed in the Well-Known Connections list, there is no need to add it again and you can proceed to the next section. Otherwise, make sure the Router Connection Options window appears (see Figure 136).

Figure 136: Router Connection Options window



To add the router to Site Manager, follow the steps in Procedure 76.

Procedure 76: Adding a router to Site Manager

- 1 In the **Node Name/IP Address** field, type the **IP address** of the router.
- 2 Enter the **SNMP community name** you defined for the router in “SNMP community management” on page 385.
- 3 Accept the default values for the remaining fields in the window.

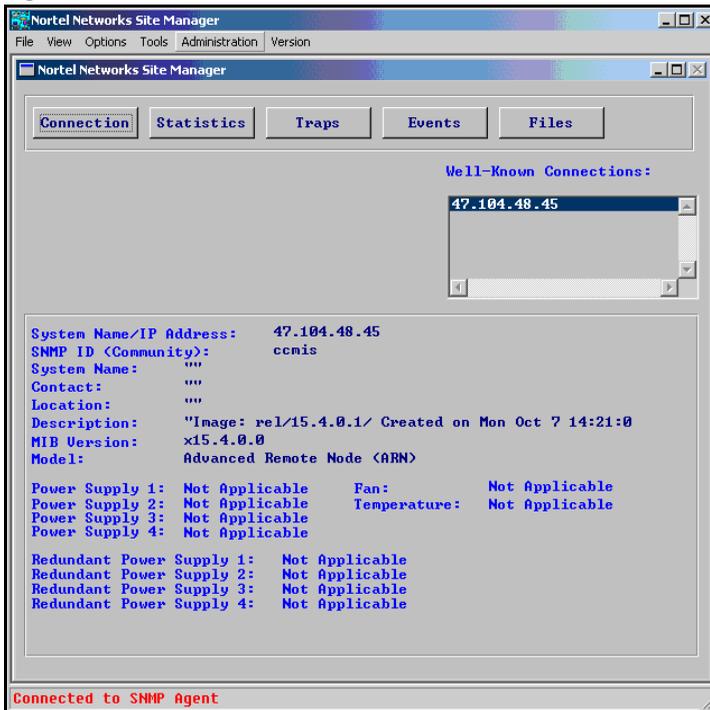
4 Click **OK**.

Site Manager connects to the router and opens the main Site Manager window (see Figure 137 on page 398). It also adds the router IP address to the Well-Known Connections list, on the main Site Manager window.

Connecting to the router

If the router you want to configure already appears in the Well-Known Connections list of the main Site Manager window (see Figure 137), click the desired router to connect to it. If it is not there, or you are automatically presented with the Router Connection Options window, use the procedure in “Adding the router to Site Manager” on page 397 to add it.

Figure 137: Site Manager main window



If the word Up appears beside the router in the connections list, then Site Manager is able to communicate with the router. If Down appears, you must check the router IP configuration or the router cabling or both to determine why Site Manager cannot communicate with the router.

About ARN configuration files

Router configuration information is stored in a file on the router itself. Several configurations can be saved on the router by creating different configuration files. When the router boots up from a power off condition, it looks for a configuration file named config and uses the information found in this file to configure the router. For this reason, it is best to avoid making changes to this file directly. The procedures described in this document always save the configuration to a file named ccmis.cfg while it is being created and tested. When the configuration is verified to work, it is copied to the config file so that if the ARN is power cycled, it boots the last tested version of the ccmis.cfg file.

A configuration file named ti_arn.cfg resides on the ARN that is a copy of the original config file as it was shipped from the factory. If you ever need to go back to a clean configuration, ti_arn.cfg can be booted or copied over config.

There are two ways to use Site Manager to modify a router configuration. The first method (Remote File method) allows you to select a particular configuration file on the router, make changes to it, and then save it back to the file. The router must then be rebooted to begin running the modified configuration. The second method (Dynamic method) modifies the running configuration and can be saved to a file when all necessary changes have been made. The Dynamic configuration method is used in this document to perform router configuration because the Remote File method requires that the Trivial File Transfer Protocol (TFTP) is used between the router and the Site Manager PC to transfer the configuration file to and from the router. Because many companies disable the TFTP protocol in their network because of its insecure nature, the Dynamic configuration option is a more universally available method.

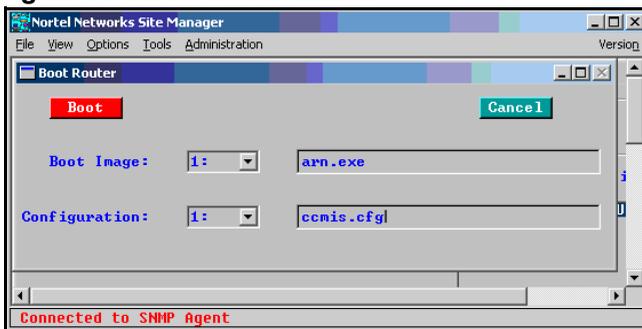
The steps in “Configuring the Ethernet link on the ARN” on page 379 have created a `ccmis.cfg` configuration file on the router, which the router should be running at this point if all the steps in this document have been followed sequentially. If you want to make sure that the router is running a particular configuration file (for example, `ccmis.cfg`), you can use Procedure 77 to boot the router using a specified configuration file.

Procedure 77: Booting the router

- 1 From the main Site Manager window, select **Administration > Boot Router**.

The Boot Router window appears (see Figure 138).

Figure 138: Boot Router window



- 2 Specify a **Boot Image** of `arn.exe`.
- 3 Specify the **Configuration** file as `ccmis.cfg`.
- 4 Click **Boot**.
- 5 When prompted, click **Yes** to proceed with boot.

The router boot process takes approximately 60 seconds. During this time, Site Manager cannot connect to the router.

Starting the Configuration Manager

When you connect to the router from the main Site Manager window, Site Manager displays administrative information in the main Site Manager window (see Figure 137). At this point you can use the Configuration Manager to change the configuration information for the router.

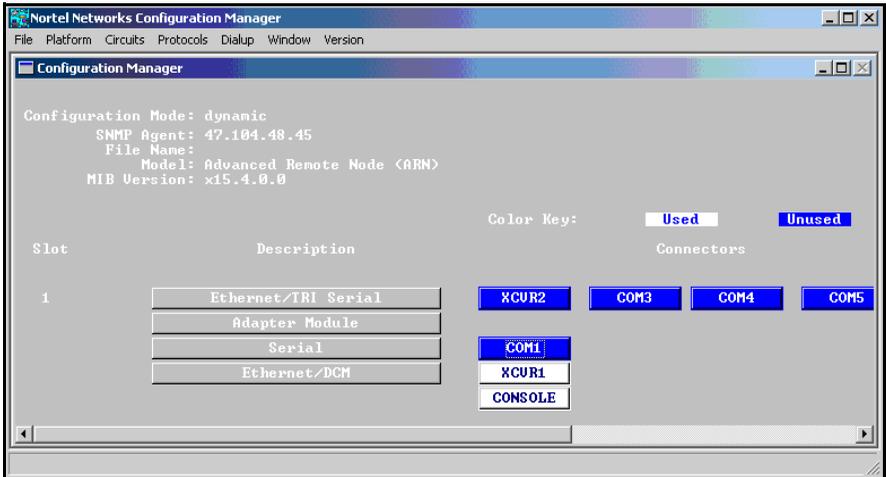
To begin making changes to the router configuration, use the steps in Procedure 78.

Procedure 78: Changing the router configuration

- 1 Select the **IP address** of the router in the **Well-Known Connections** list.
- 2 In the main Site Manager window, choose **Tools > Configuration Manager > Dynamic**.

The Configuration Manager window appears (see Figure 139). Use this window to change the configuration of the router.

Figure 139: Configuration Manager window



Adding a new X.25 link

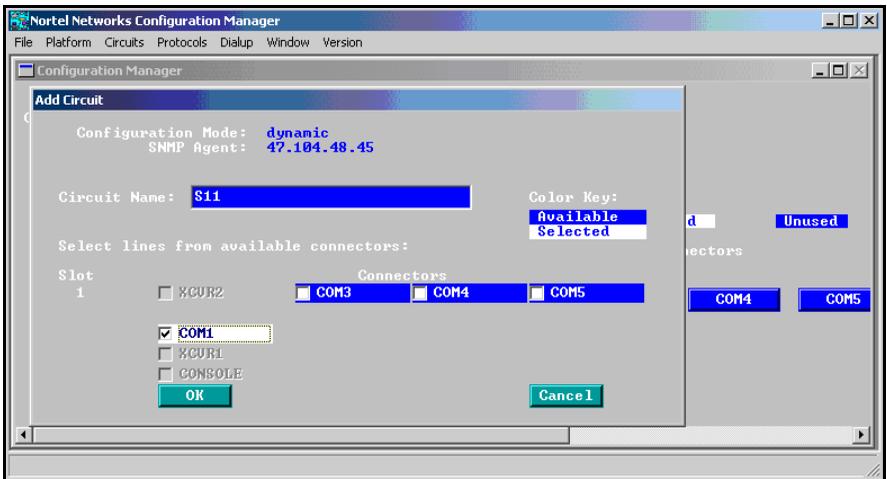
You can use the steps in Procedure 79 to configure the first X.25 link on the ARN router, as well as to configure additional links on an already operational ARN. The starting point is to identify the COM port on the ARN to which the cables for this link will be attached. This COM port should be marked as unused in the main Configuration Manager window.

Procedure 79: Adding a new X.25 link

- 1 In the Configuration Manager window, click the **COM port** to which the DMS link will be connected.

The **Add Circuit** window appears (see Figure 140 on page 402). This window provides a default name for the new circuit (for example, S11 for the COM1 port), which identifies the physical location of the port. Nortel recommends that you accept the default circuit name.

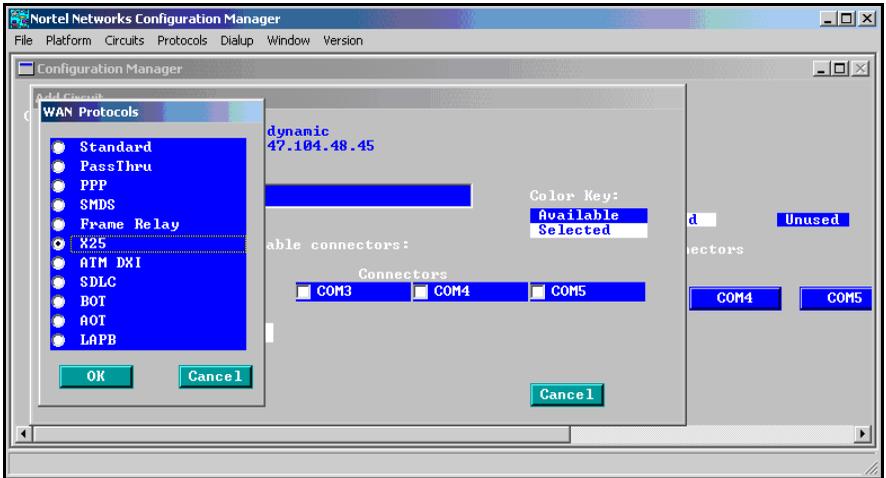
Figure 140: Add Circuit window



- 2 Click **OK**.

The WAN Protocols window appears (see Figure 141 on page 403).

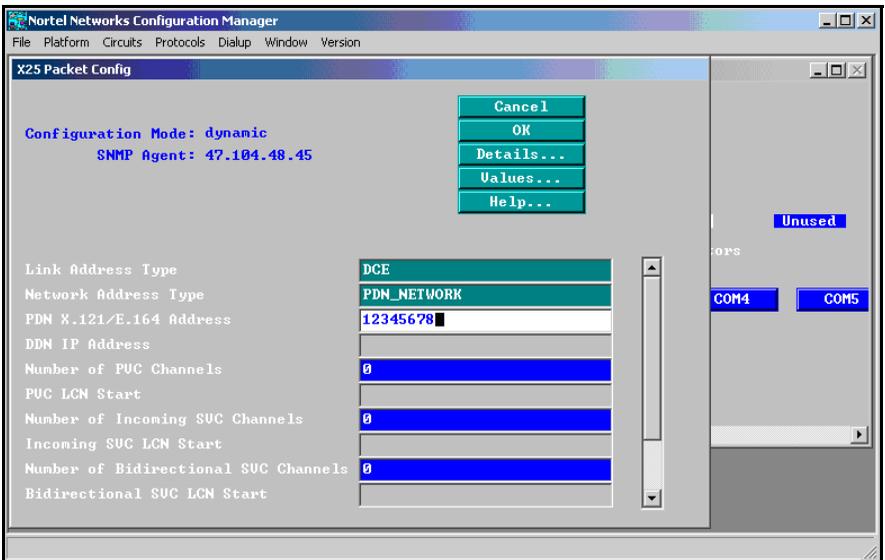
Figure 141: WAN Protocols window



3 Select X25, and then click OK.

The X25 Packet Config window appears (see Figure 142) with an initial set of parameters that must be configured before detailed configuration can be performed.

Figure 142: Initial X25 Packet Config window



- 4 Enter the 8-digit DNA of the switch in the **PDN X.121/E.164 Address** field.
- 5 Click **Details** to fill in the rest of the required X.25 packet parameters according to Table 50, “X.25 Packet Configuration Parameter Values,” on page 405.

Note: The X25 Packet Config window changes slightly to allow access to all X.25 packet parameters (see Figure 143 on page 404).

Figure 143: Detailed X25 Packet Config window

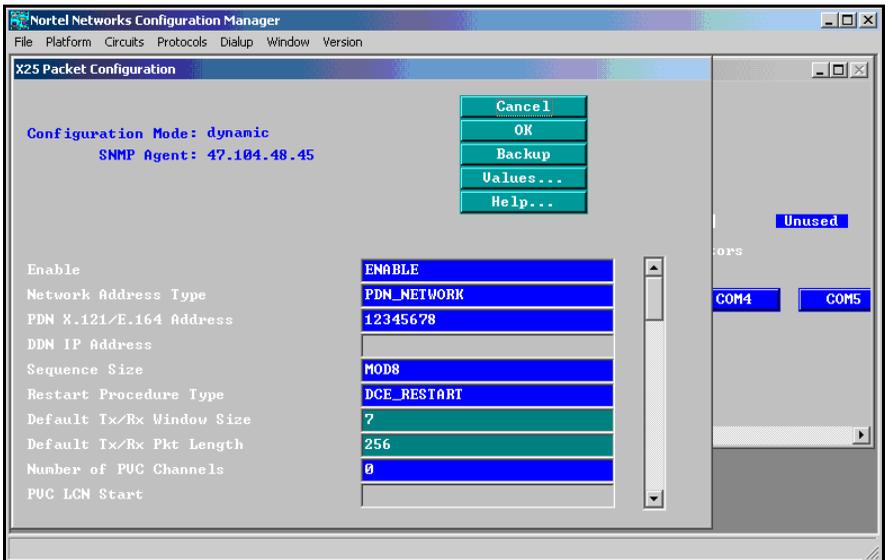


Table 50: X.25 Packet Configuration Parameter Values (Part 1 of 3)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Enable	Enable
Network Address Type	PDN_NETWORK
PDN X.121/E.164 Address	<DNA from the switch> (set in initial window)
Sequence Size	MOD8
Restart Procedure Type	DCE_RESTART
Default Tx/Rx Window Size	7
Default Tx/Rx Pkt Length	256
Number of PVC Channels	0
Number of Incoming SVC Channels	0
Number of Bidirectional SVC Channels	2
Bidirectional SVC LCN Start	1 (set automatically after changing field above)
Number of Outgoing SVC Channels	0
T1 Timer	60
T2 Timer	180
T3 Timer	200
T4 Timer	200

Table 50: X.25 Packet Configuration Parameter Values (Part 2 of 3)

Parameter Name	Value
Flow Control Negotiation	OFF
Max Window Size	7
Max Packet Length	256
Tx/Rx Throughput Class Negotiation	<depends on link speed> (see Table 51 on page 407)
Throughput Class Negotiation	OFF
Max Throughput Class	<depends on link speed> (see Table 51 on page 407)
Network User Identification	OFF
Incoming Calls Accept	ON
Outgoing Calls Accept	ON
Fast Select Accept	OFF
Reverse Charge Accept	OFF
Fast Select	OFF
Reverse Charging	OFF
CUG Selection	OFF
CUG Outgoing Access	OFF
CUG Bilateral Selection	OFF
RPOA Selection	OFF
Charging Information	OFF
Transit Delay	OFF

Table 50: X.25 Packet Configuration Parameter Values (Part 3 of 3)

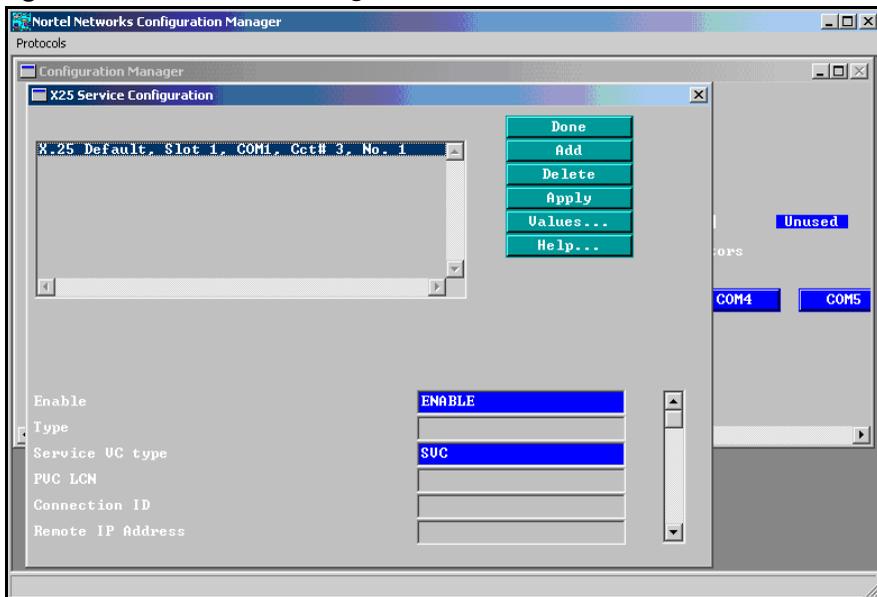
Parameter Name	Value
Full Addressing	ON
Acceptance Format	BASIC
Release Format	BASIC
CCITT Conformance	DXE1984
Network Standard	NONE
Statistics Computation	DISABLE
Client Response Timer	120
Client PDU Size	4096

Table 51: X.25 Link Speed Packet Parameters

Link Speed	Tx/Rx Throughput Class Negotiation	Max Throughput Class
9600	THRCLASS9600	9600
19200	THRCLASS19200	19200
56000	THRCLASS48K	48K

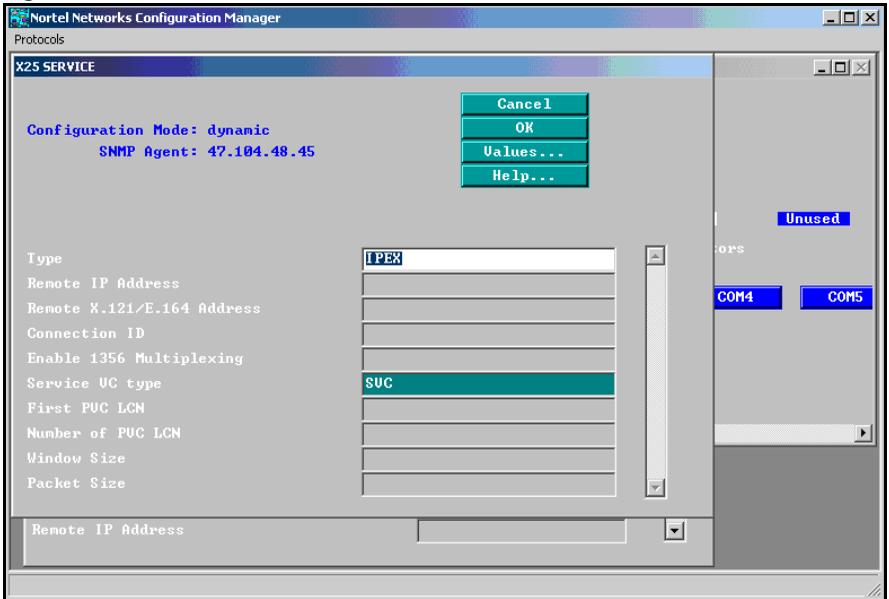
6 Click OK.

The X25 Service Configuration window appears (see Figure 144 on page 408).

Figure 144: X25 Service Configuration window**7 Click Add.**

The X25 Service window appears (see Figure 145 on page 409).

Figure 145: X25 Service window



8 Configure the parameters in the X25 Service window according to Table 52.

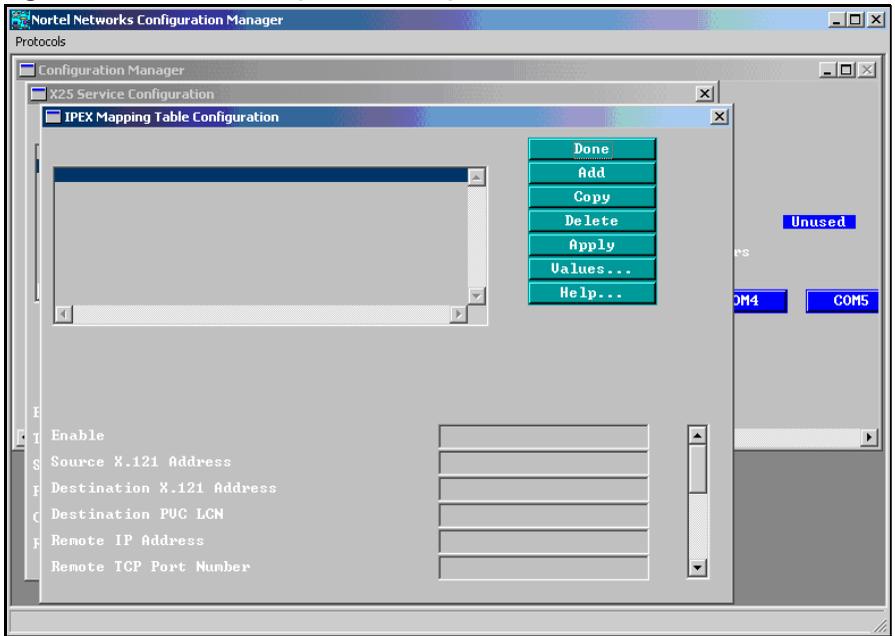
Table 52: X.25 Service Parameter Values

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Type	IPEX
Service VC Type	SVC

9 Click **OK**.

The IPEX Mapping Table Configuration window appears (see Figure 146 on page 410).

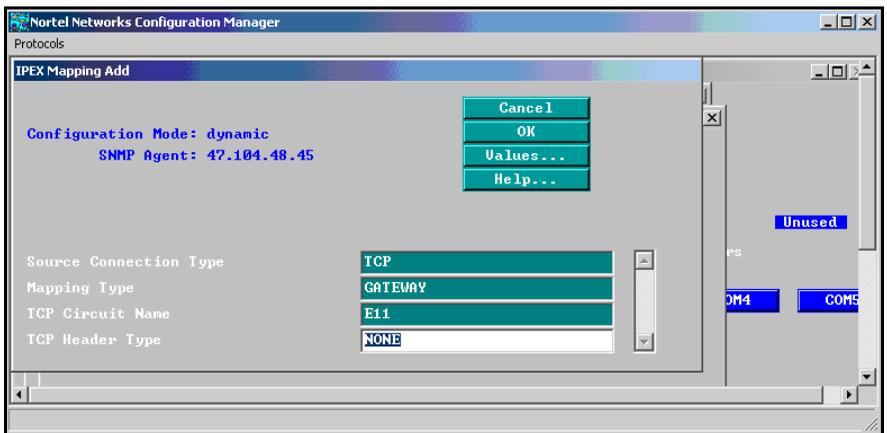
Figure 146: IPEX Mapping Table Configuration window



10 Click **Add**.

The IPEX Mapping Add window appears (see Figure 147).

Figure 147: IPEX Mapping Add window



11 Configure the parameters in this window according to Figure 53.

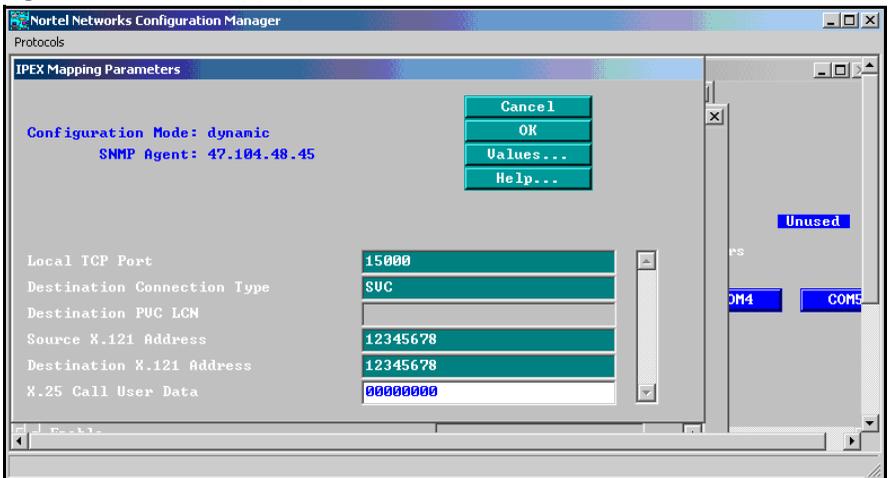
Table 53: IPEX Mapping Add window parameters

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Source Connection Type	TCP
Mapping Type	GATEWAY
TCP Circuit Name	<used the same circuit name from “Enter circuit name” on page 382> (for example, E11)
TCP Header Type	NONE

12 Click **OK**.

The IPEX Mapping Parameters window appears (see Figure 148).

Figure 148: IPEX Mapping Parameters window



13 Configure the parameters in this window according to Table 54.

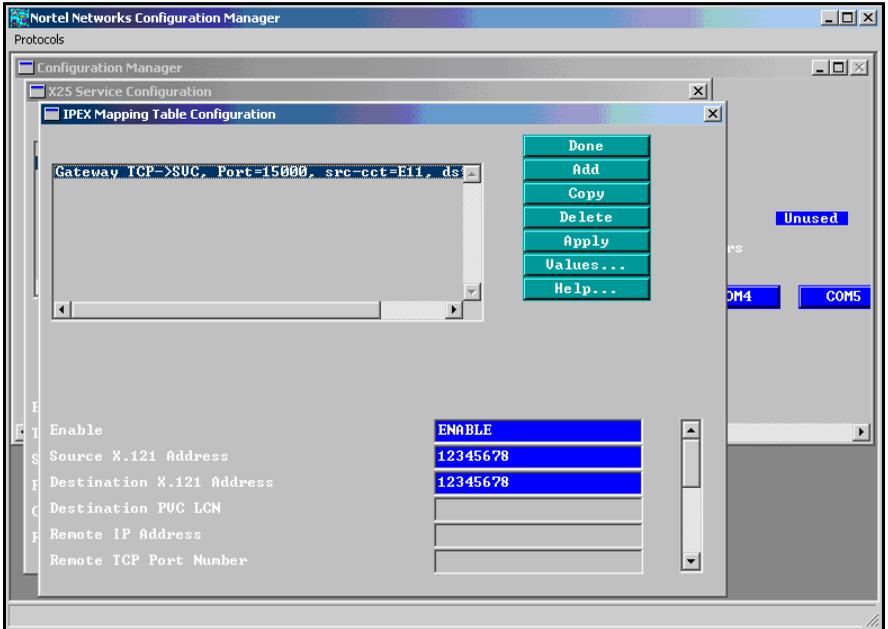
Table 54: IPEX Mapping Parameters

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Local TCP Port	<TCP port number that CC MIS will connect to> (must be in the range 12304 – 16399)
Destination Connection Type	SVC
Source X.121 Address	<the DNA from the switch>
Destination X.121 Address	<the same DNA from the switch>
X.25 Call User Data	00000000 (eight zeros)

14 Click **OK**.

The IPEX Mapping Table Configuration window (see Figure 149 on page 413) reappears.

Figure 149: IPEX Mapping Table Configuration window (after IPEX mapping added)



15 Configure the parameters in this window according to Table 55.

Table 55: IPEX Mapping Table Configuration parameters

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Enable	Enable
Source X.121 Address	<DNA from switch> (set in previous step)
Destination X.121 Address	<DNA from switch> (set in previous step)
Client Queue Size	8192

Table 55: IPEX Mapping Table Configuration parameters

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
X.25 Call User Data	00000000 (set in previous step)
Idle Session Timer	120
Keep Alive Retransmit Timer	3
Keep Alive Retransmit Count	5
Header Type	NONE
Translate Calling X.121 Address	<leave blank>

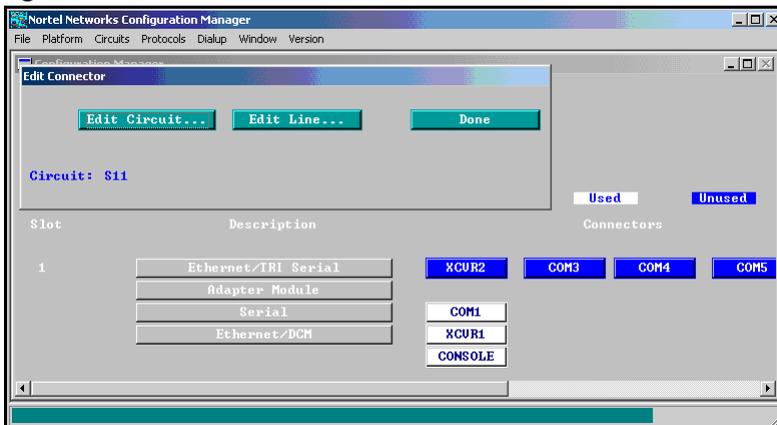
16 Click Done.

You are returned to Configuration Manager window, where the COM port just configured should now be white (used) instead of blue.

17 Click the COM port again.

The Edit Connector window appears (see Figure 150).

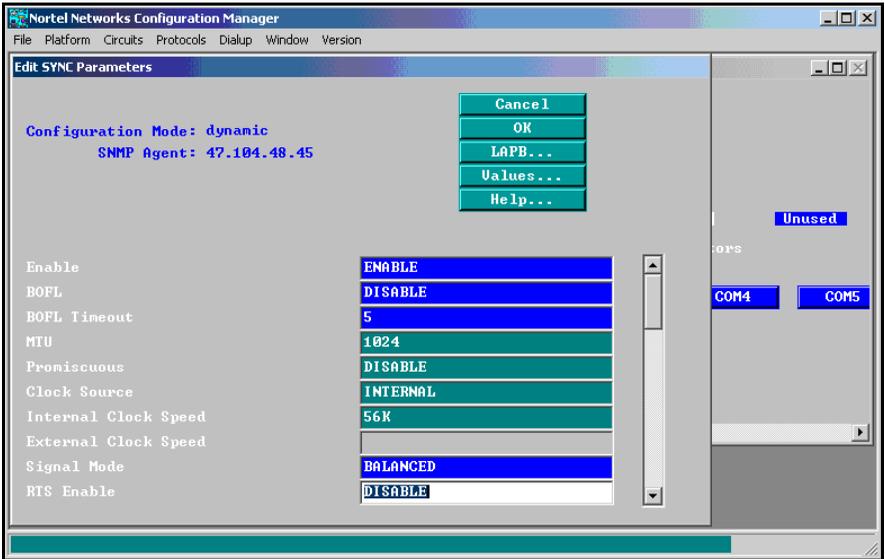
Figure 150: Edit Connector window



18 Click Edit Line.

The Edit SYNC Parameters window appears (see Figure 151).

Figure 151: Edit SYNC Parameters window



19 Configure the parameters in this window according to Table 56.

Table 56: Edit SYNC Parameters (Part 1 of 3)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Enable	ENABLE
BOFL	DISABLE
BOFL Timeout	5
MTU	1024
Promiscuous	DISABLE

Table 56: Edit SYNC Parameters (Part 2 of 3)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Clock Source	<depends on connection type> (see Table 57 on page 417)
Internal Clock Speed	<depends on connection type> (see Table 57 on page 417)
External Clock Speed	<depends on connection type> (see Table 57 on page 417)
Signal Mode	BALANCED
RTS Enable	DISABLE
Service	LAPB
Min Frame Spacing	1
Local Address	1
Remote Address	3
WAN Protocol	LAPB
CRC Size	16 BIT
Sync Media Type	DEFAULT
Sync Polling	ENABLE
Sync Line Coding	NRZ
Cable Type	NULL
Extended Address	DISABLE

Table 56: Edit SYNC Parameters (Part 3 of 3)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Remote Loopback Detection	DISABLE
Sync B Channel Override	DEFAULT
Hold Down Time	0
WAN Serial Interface Type	SYNC

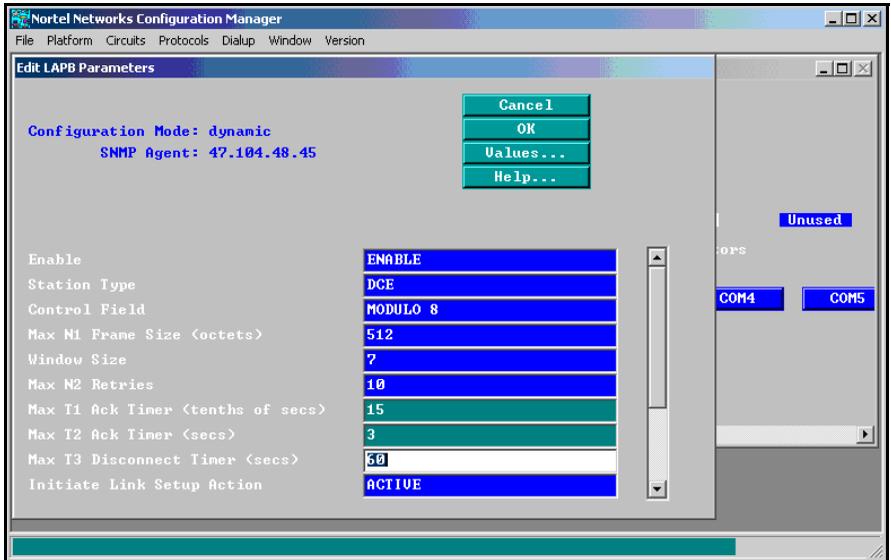
Table 57: SYNC Parameters Dependent on Connection Type

Parameter	Direct Connection (ARN co-located with switch)	Modem Connection (ARN co-located with CC MIS)
Clock Source	INTERNAL	EXTERNAL
Internal Clock Speed	9600, 19200 or 56K depending on desired link speed	<blank>
External Clock Speed	<blank>	Enter link speed (for example < 9600, 19200 or 56000)

20 Select LAPB.

The Edit LAPB Parameters window appears (see Figure 152 on page 418).

Figure 152: Edit LAPB Parameters window



21 Configure the parameters in this window according to the following table.

Table 58: Edit LAPB Parameters (Part 1 of 2)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Enable	ENABLE
Station Type	DCE
Control Field	MODULO 8
Max N1 Frame Size <octets>	512
Window Size	7
Max N2 Retries	10
Max T1 Ack Timer (tenths of secs)	15

Table 58: Edit LAPB Parameters (Part 2 of 2)

Parameter Name	Value
Note: Parameter values shown in bold must be changed from the default values.	
Max T2 Ack Timer (secs)	3
Max T3 Disconnect Timer (secs)	60
Initial Link Setup Action	ACTIVE
Enable Rx/TX of XID Frames	DISABLE
Idle RR Frames	ON
Command/Response	DCE
Wan Protocol	X25
Network Link Type	NET2

22 Click **OK**, and then click **Done** in the Edit Connector window.

23 Select **File > Save As** and enter **ccmis.cfg** as the file name, then click **Save**.

24 Click **OK** in the warning dialog box that appears regarding overwriting an existing file.

25 Select **File > Exit** from the Configuration Manager menu.

The router configuration process is now complete.

Activating the configuration

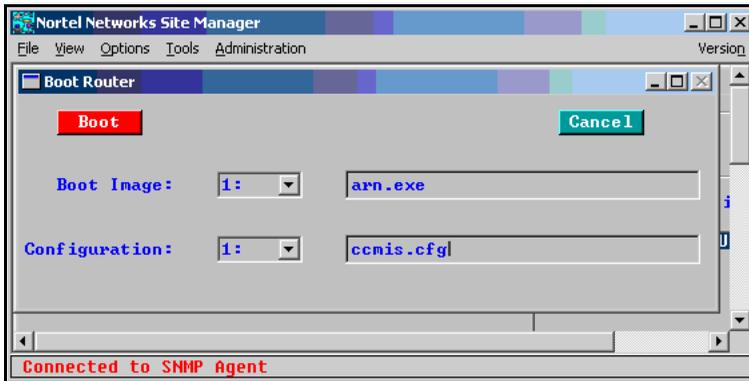
To activate the new configuration, you must reboot the router. Procedure 80 boots the router using the new `ccmis.cfg` configuration file created previously, allowing the configuration to be tested before it is made permanent.

Procedure 80: Rebooting the router to activate the router configuration

- 1 From the main Site Manager window, select **Administration > Boot Router**.

The Boot Router window appears (see Figure 153).

Figure 153: Boot Router window



- 2 Specify a **Boot Image** of `arn.exe`.
- 3 Specify the **Configuration** file as `ccmis.cfg`.
- 4 Click **Boot**.
- 5 When prompted, click **Yes** to proceed with boot.

The router boot process takes approximately 60 seconds. During this time, Site Manager cannot connect to the router.

Making the configuration permanent

To make the configuration changes permanent, you must rename the `ccmis.cfg` file to `config` (using Procedure 81). This allows the router to automatically boot with the new configuration in the event of a power failure. Make this change only after you complete the steps in “CC MIS TCP/IP switch link configuration” on page 422 and verify that the configuration is correct. The File Manager Tool in Site Manager does not provide a rename function, but you can use the Copy command to make this change.

Procedure 81: Renaming the `ccmis.cfg` file to `config`

- 1 Make a backup of the **config** file using Commands/Copy (F6).
- 2 Copy **ccmis.cfg** to **config**.

CC MIS TCP/IP switch link configuration

DMS message bundling

The DMS side of the link must be configured according to existing configuration guidelines with one important exception. Any link which is to be made using an ARN must have message bundling enabled on the switch side to achieve the proper performance levels. This option bundles individual messages together into a single X.25 packet during periods of high message traffic, resulting in fewer packets being delivered to the ARN.

To enable the message bundling option on the link, you must set the **BUNDLING** option to “Y” for the ACD pool in table **ACDMISPL** (see the following example).

Example:

```
TABLE: ACDMISPL
>add

ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
>y
POOL:
>pool3
PASSWORD:
>ccmis
PROTOCOL:
>bcs43
OUTEVENT: 200
>200
BUNDLING:
>y
TUPLE TO BE ADDED:
POOL3      CCMIS      BCS43      200      Y
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
>y
WARNING! CCMIS RELEASE 2.0 OR ABOVE REQUIRED.
TUPLE ADDED
```

TABLE: ACDMISPL

>lis all

TOP

POOL	PASSWORD	PROTOCOL	OUTEVENT	BUNDLING
POOL1	ACDMIS	BCS43	200	N
POOL2	NACDMIS	BCS32	200	N
POOL3	CCMIS	BCS43	200	Y

CC MIS switch link definition

Using the CC MIS Maintenance interface, enter the Switch Link Configuration screen (Configuration > Switch Link Configuration). Figure 154 shows the Configuration menu.

Figure 154: CC MIS Configuration menu

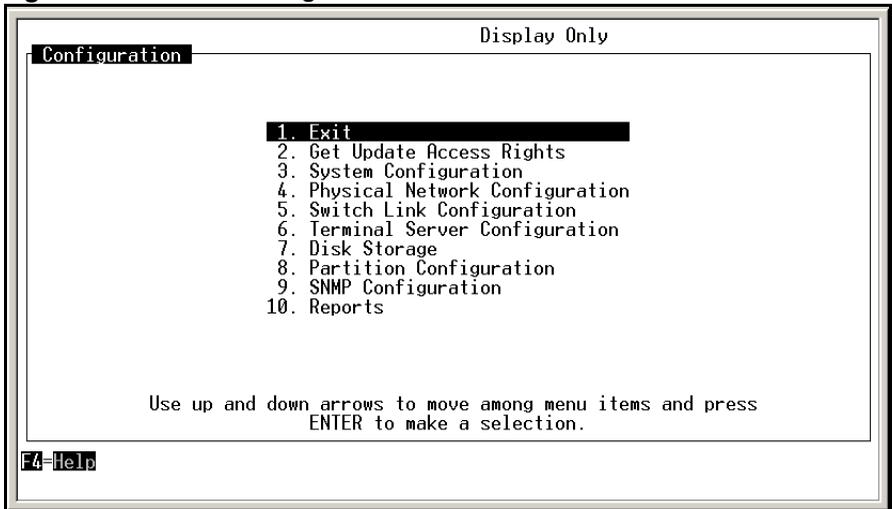


Figure 155: CC MIS Switch Link Configuration screen

```

Switch Link Configuration
Updates Allowed

Link Number.....
Link Type..... Live TCP/IP
Enabled..... Yes
ACD User ID.....
ACD User Password.....
ACD Pool Name.....
ACD Pool Password.....
Reinit Time.....
Synchronize to Switch Time.. No
Timezone Adjustment.....
Switch Code.....

--- TCP/IP LINK CONFIGURATION PARAMETERS ---
link      IP Address      Port
Primary.....
Secondary.....

F4=Help  F1=Commands  F2=Options

```

Use the Switch Link Configuration screen (shown in Figure 155) to create a Live TCP/IP switch link definition. The switch link configuration parameter values can be set as needed (use the Help soft key to get a description of the various fields in the link definition).

Note: The link IP Address should be set to the IP address of the router and the port should be the same as the Local TCP Port value provisioned in the IPEX Mapping Parameters screen (see Figure 148 on page 411).

Upon successful creation of the link definition, the connection to the DMS through the ARN router should be established. To verify this, access the CC MIS system logs and look for informational logs that indicate that the CC MIS was able to connect to the switch. Sample logs are shown in the next section.

Sample CC MIS switch link connection logs

CC MIS generates the following system logs when the link definition is successfully created and connection to the switch is established.

```
EVENT at 02/11/12 14:36:07 CST
Connected to switch <47.104.48.45:15000>
Process: dmslink (1930) Partition: 0 Instance: Link 5
(ACDPOOL1)
Source: dms_lan.c, handle_lan_events, 258
```

```
EVENT at 02/11/12 14:36:09 CST
Successfully logged onto switch
Process: dmslink (1930) Partition: 0 Instance: Link 5
(ACDPOOL1)
Source: dms_in.c, handle_return_result, 458
```

```
EVENT at 02/11/12 14:36:09 CST
Requesting start of call data transfer...
Process: dmslink (1930) Partition: 0 Instance: Link 5
(ACDPOOL1)
Source: dms_out.c, encode_R0, 259
```

```
EVENT at 02/11/12 14:36:09 CST
Call data transfer beginning...
Process: dmslink (1930) Partition: 0 Instance: Link 5
(ACDPOOL1)
Source: dms_in.c, handle_return_result, 757
```

Post-installation activities

After the configuration of the ARN is complete, there are some optional activities that you can perform to enhance the security of the router or debug problems.

Setting passwords

Passwords must be set on all ARN router accounts to prevent access from unauthorized users. The ARN contains two user accounts: User and Manager. The Technician Interface is used to set passwords on these accounts.

Procedure 82: Setting/changing passwords

- 1 Log on to the Technician Interface using the Manager account.
- 2 At the Technician Interface prompt, type **password** to change the password for the Manager account.

You are prompted for the old and new passwords as follows:

```
password <enter>
Changing password for Manager
Old password: (just press return if no password has been
set)
New Password: XXXXXXXXX <enter>
Retype new password: XXXXXXXXX <enter>
Manager password changed.
```

- 3 If there was no password previously set on the Manager account, press **<enter>** at the old password prompt.
- 4 Change the password on the User account as follows:

```
password User <enter>
Changing password for User

New Password: XXXXXXXXX <enter>
Retype new password: XXXXXXXXX <enter>
User password changed.
```

Setting the date and time

Having a correct date and time set on the ARN is useful if the router logs ever need to be consulted. The date and time (and time zone) can be set from the Technician Interface. The time zone setting is the number of hours offset from Greenwich Mean Time (GMT), with offsets west of GMT expressed as negative values.

To check the current date, time and time zone settings:

```
date <return>
Dec 10, 2004 12:23:45 [GMT]
```

To set a new date and time (leaving the time zone setting unchanged):

```
Date 12/11/03 10:15 <return>
Dec 11, 2004 10:15:03 [GMT]
```

To set a new date, time and time zone:

```
Date 12/11/04 10:15 -6 <return>
Dec 11, 2004 10:15:03 [GMT-6]
```

Useful debugging commands

This section briefly describes some useful debugging commands. All commands are available from the Technician Interface. More complete and detailed information can be found in the *Using Technician Interface Software* document, which can be found at the following web site: <http://www25.nortelnetworks.com/library/tpubs/nav/router/soft1420.htm>

Displaying the events log file

To view all events in the current log file:

```
log
```

To view only events related to the CC MIS switch link setup (the -e parameter sets entities you are interested in seeing logs for):

```
log -eTCP -eIPEX -eX25
```

To view additional debug logs (the -f parameter sets a filter for the severity of events to be viewed, where f=fault, t=trace, w=warning, i=informational, and d=debug):

```
log -fftwid -eTCP -eIPEX -eX25
```

Clearing the events log file

To debug a current problem it is often useful to clear the current log file so that only new events appear in the log.

To clear the current log file:

```
clearlog <return>
clearlog: Slot 1 confirmed.
```

Displaying X.25 status information

To debug the X.25 side of the router connection, several variations of the “show sync” command can be used to display X.25 status information.

To display general status information:

```
show sync stats <return>
                Receive Receive Transmit Transmit Total
Slot Conn Circuit Bytes  Frames  Bytes  Frames  Errors
-----
1     1     S11      0      0      0      0      0
1 entry(s) found
```

To display cable lead status:

```
show sync eia_status <return>
Slot Conn Circuit  RTS  CTS  DSR  DCD  DTR
-----
1     1     S11    H*  H*  H*  L   H*
1 entry(s) found
```

To display receive errors:

```
show sync rx_errors <return>
                Bad      Runt      Frame      Frames      Overflow
Slot Conn Circuit Frames  Frames  Rejects    Too Long  Frames
-----
1     1   S11      0       0       0         0         0
1 entry(s) found
```

Displaying TCP connection information

To debug the TCP side of the router connection, you can use the show tcp command as follows:

```
show tcp connections <return>
The current TCP connections :
```

```
Local          Remote
Local IP      Port      Remote IP    Port      State
-----
0.0.0.0       23        0.0.0.0      0         Listen
0.0.0.0      15000     0.0.0.0      0         Listen
```

References

The following documents are references for the information presented in this appendix:

- *Installing and Operating BayStack ARN Routers*

Note: This document can be found at the following web site: <http://www25.nortelnetworks.com/library/tpubs/nav/router/baystack.htm#arn>

- *Configuring BayStack Remote Access*
- *Quick-Starting Routers*
- *Configuring and Managing Routers with Site Manager*
- *Cable Guide*
- *Using Technician Interface Software*

Note: This document can be found at the following web site: <http://www25.nortelnetworks.com/library/tpubs/nav/router/soft1420.htm>

Appendix D

System Configuration reports

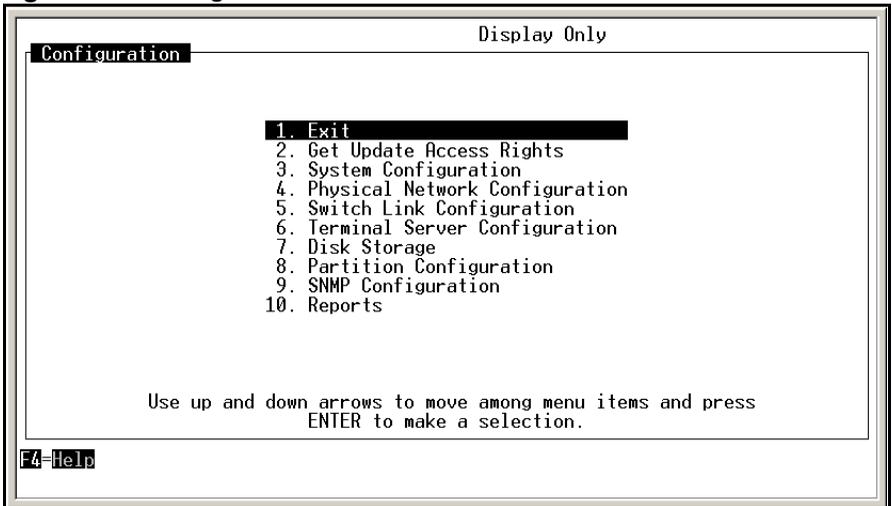
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Introduction	432
Available reports	433

Introduction

System Configuration reports provide a record of system configuration changes and setup. You can access the System Configuration reports through the Maintenance interface by selecting the Reports option from the Configuration menu (see Figure 156).

Figure 156: Configuration menu



Available reports

The following reports are available:

- System Configuration Report
- Port Allocation Report
- Switch Link Configuration Report
- Partition Configuration Report
- Disk Allocation Report
- Connection Parameters Report
- Partition Options Report
- Terminal Server Report
- Static LAN Terminal Configuration Report
- Serial Terminal Configuration Report
- Wallboard Configuration Report
- Storage Parameters Report
- Simulator Configuration Report
- SNMP Configuration Report
- Interval Configuration Report
- Physical Network Configuration (Network)
- Virtual Network Configuration (Network)
- Master Privilege Definition
- Master Privilege Override
- All Reports

Notes:

1. The SNMP Configuration report is available only if the SNMP option is enabled for the system.
2. The Virtual Network Configuration and Physical Network Configuration reports are available only when the Networking option is enabled.

System Configuration report

The System Configuration report provides information regarding the system name, backup directory, and IP address.

Note: If the node is in a network node, the Network Name field is included in the report.

SYSTEM CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

System Name: LINUX

CC MIS Network Name: CCMISNET

Backup Directory: /mis/backup

Port Allocation report

The Port Allocation report provides information regarding the node ports, partition assignments, modem access, baud, and device type. This information was entered by means of the maintenance configuration screen for system configuration.

PORT ALLOCATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

PORT	PARTITION	DEVICE TYPE
mists1-0	Training 1	Supervisor Terminal
mists1-1		
mists1-2		
mists1-3		
mists1-4		
mists1-5		
mists1-6		
mists1-7		
mists1-8		
mists1-9		
mists1-10		
mists1-11		
mists1-12		
mists1-13		
mists1-14		
mists1-15		

Switch Link Configuration report

The Switch Link Configuration report provides information regarding the node switch link definitions, link types, X.121 address, pool assignments, passwords, and reinitialization time. This information was entered by means of the maintenance configuration screen for switch link configuration.

SWITCH LINK CONFIGURATION REPORT Page 1

LINUX Date: 03/28/05 Time: 16:31:54

=====

Link Number..... 1
Link Type..... Simulator
Enabled..... Yes

Simulator Configuration.... Small, overflow, 2 subpool
(5Kcph)

=====

Link Number..... 2
Link Type..... Live TCP/IP
Enabled..... No
ACD User ID..... ACDMIS
ACD User Password..... ACDMIS
ACD Pool Name..... ACDPOOL0
ACD Pool Password..... ACDPOOL0
Reinit Time.....
Synchronize to Switch Time..... No
Timezone Adjustment..... 0:00
Switch Code.....

--- TCP/IP LINK CONFIGURATION PARAMETERS ---

Link	IP Address	Port
-----	-----	-----
Primary.....	bpvev003	10003

=====

Link Number..... 3
Link Type..... Live TCP/IP
Enabled..... No
ACD User ID..... ACDMIS
ACD User Password..... ACDMIS
ACD Pool Name..... ACDPOOL1
ACD Pool Password..... ACDPOOL1
Reinit Time.....
Synchronize to Switch Time..... No
Timezone Adjustment..... 0:00
Switch Code.....

--- TCP/IP LINK CONFIGURATION PARAMETERS ---

Link	IP Address	Port
-----	-----	-----
Primary.....	bpvev003	10003

Partition Configuration report

The Partition Configuration report provides information regarding the node's logical partitions, partition assignments, modes and current state. This information was entered by means of the maintenance configuration screen for partition configuration.

PARTITION CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

SWITCH LINK

PARTITION NAME	MODE	STATE	ID	DISK	NUMBER/TYPE/POOL
Training 1	Training	Running	1	1	1/Simulator
Dallas	Product	Running	2	1	2/Live/ACDPOOL0
Training 2	Training	Running	3	1	1/Simulator
Fort Worth	Product	Running	4	1	2/Live/ACDPOOL0
Metroplex	Product	Running	5	1	(NAP)

Disk Allocation report

The Disk Allocation report provides information regarding the system disk resources, partition allocations, and disk usage. This information was entered by means of the maintenance configuration screen for partition configuration.

DISK ALLOCATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

PARTITION NAME	SIZE LIMIT	SPACE IN USE	% IN USE	DISK NO.	% DISKALLOC
Training 1	700M	69M	10	1	36
Dallas	800M	51M	6	1	41
Training 2	70M	56M	80	1	4
Fort Worth	100M	51M	51	1	5
Metroplex	50M	50M	100	1	3

DISK USAGE STATISTICS

Page 2

DISK NUM	MOUNT	DIRECTORY	DISK SIZE	AVAIL SPACE	% FULL	NO. PARTITIONS
1	/mis/data/fs1		1968M	248M	87	5

Connection Parameters report

The Connection Parameters report provides information regarding a partition's logical connection to a switch link pool, subpool (and their names), and password information. Only local partitions are listed because NAPs do not have switch connections. This information was entered by means of the maintenance configuration screen for partition configuration.

CONNECTION PARAMETERS REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

PARTITION NAME	SWITCH LINK ID	NUMBER/ TYPE/ POOL	ACD SUBPOOL NAME	ACD SUBPOOL PASSWORD
Training 1	1	1/Simulator	ACDSP0	
Dallas	2	2/Live/ACDPOOL0	ACDSP1	ACDSP1
Training 2	3	1/Simulator	ACDSP1	
Fort Worth	4	2/Live/ACDPOOL0	ACDSP0	ACDSP0
Metroplex	5	(NAP Partition)		

Partition Options report

The Partition Options report provides information regarding options that are specified for a particular partition. This information was entered by means of the maintenance configuration screen for partition configuration.

PARTITION OPTIONS REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====

Training 1

Data Export	:	ENABLED
Language Support	:	ENABLED
Nightly Backups	:	ENABLED
Automatic Position Reassignment	:	ENABLED
SNMP Support	:	ENABLED
Flexible Intervals	:	ENABLED
Host Email Support	:	DISABLED
Maximum ACD Groups	:	10
Maximum Positions	:	100
Maximum Wallboard Chains	:	4
Maximum Supervisor Connections	:	4
Maximum Logins	:	4
Dynamic LAN Terminal Access	:	ENABLED
Custom Time Zone Specification	:	

Terminal Server Configuration report

The Terminal Server Configuration report provides information regarding configured terminal servers. This information was entered by means of the maintenance configuration screen for terminal server configuration.

TERMINAL SERVER CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

IP ADDRESS	NAME BASE	TCP PORT	#PORTS
47.104.48.30	mists1	8000	16

Static LAN Terminals report

The Static LAN Terminals report provides information regarding static LAN ports (and their partition assignments), IP addresses, and comments. This information was entered by means of the maintenance configuration screen for partition configuration.

STATIC LAN TERMINALS REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====

Training 1

IP ADDRESS (OR RANGE)

COMMENT

=====

Dallas

IP ADDRESS (OR RANGE)

COMMENT

47.102.112.198

johndoe

Serial Terminal report

The Serial Terminal report provides information regarding serial ports, connectivity, and comments for a partition. This information was entered by means of the maintenance configuration screen for partition configuration.

SERIAL TERMINAL CONFIGURATION REPORT Page 1

LINUX Date: 03/28/05 Time: 16:31:54

=====

Training 1

PORT	CONNECTIVITY	COMMENT
mists1-0	TERM-SERVER	This is a test.

=====

Dallas

PORT	CONNECTIVITY	COMMENT
------	--------------	---------

Wallboard Configuration report

The Wallboard Configuration report provides information regarding wallboards (and their port assignments) and device information for a partition. This information was entered by means of the maintenance configuration screen for partition configuration.

WALLBOARD CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====
Training 1

PORT	CONNECTIVITY	MODEL	ADDRESS	NAME	
m337_c0d15	DIRECT	9600	Daktronics	004343	Dak Wallboard
m337_c0d20	MODEM	9600	Generic	1	Wallboard Gen

=====
Dallas

PORT	CONNECTIVITY	MODEL	ADDRESS	NAME	
m337_c0d26	DIRECT	9600	Spectrum	22	RDJR_Cube _WB

Storage Parameters report

The Storage Parameters report provides information regarding data storage sizing and durations for a local partition. This information was entered by means of the maintenance configuration screen for partition configuration. (This report does not apply to NAPs.)

STORAGE PARAMETERS REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====

Training 1

SIZING PARAMETERS

STORAGE DURATION

Number of ACD groups.....10 Interval data.....30 DAYS

Avg source ACD-DNs/group.....42 Daily data.....180 DAYS

Avg active positions.....100 Weekly data.....53 WEEKS

Avg agents per day.....100 Monthly data.....13 MONTHS

Avg agent events/agent/day...32 Agent Event data.....14 DAYS

Avg LOB codes/group.....3 Agent Trace data.....14 DAYS

Avg walk codes/group.....3

Avg source groups/dest group...3 HOURS OF OPERATION

Position moves per day.....5%

ACD-DN reassigns per day.....5% Number of Shifts.....3

Disk space for Agent Trace...7MB Days per week.....7

OPTIONAL STATISTICS GROUPS DISK SPACE

Walkaway Statistics.....By Agent Disk Available.....948 MB

ACD-DN Statistics.....By Agent Size Limit.....700 MB

LOB Statistics.....By Agent Disk Required.....624 MB

Interval Configuration Report

The Interval Configuration Report provides information that was entered through the Interval Configuration screen through the Maintenance interface.

INTERVAL CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====

Time	Interval Length	Time	Interval Length
------	-----------------	------	-----------------

Training 1

00:00	30	12:00	30
01:00	30	13:00	30
02:00	30	14:00	30
03:00	30	15:00	30
04:00	30	16:00	30
05:00	30	17:00	30
06:00	30	18:00	30
07:00	30	19:00	30
08:00	30	20:00	30
09:00	30	21:00	30
10:00	30	22:00	30
11:00	30	23:00	30

Simulator Configuration report

The Simulator Configuration report provides information regarding simulator subpools and their defined switch configurations. The information for this report is derived from the parameters supplied on the system tape for the simulator.

SIMULATOR CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

=====
Simulator Configuration: 8 mixed size subpools with overflow (5Kcph)

Number of Subpools:	8
Number of ACD Groups:	60
Number of Positions:	500
Calls per hour:	5000

=====
Simulator Configuration: Small, overflow, 2 subpool (5Kcph)

Number of Subpools:	2
Number of ACD Groups:	10
Number of Positions:	100
Calls per hour:	5000

=====
Simulator Configuration: Small, overflow, 1 subpool (manual)

Number of Subpools:	1
Number of ACD Groups:	5
Number of Positions:	50
Calls per hour:	0

SNMP Configuration report

The SNMP Configuration report provides a hardcopy of the contents of the SNMP Configuration screen.

Note: The SNMP report is only available if the SNMP option is enabled for the system.

SNMP CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

Link Traps: Disabled

COMMUNITY NAME

COMMUNITY MEMBERS

public

0.0.0.0

secure

traps

Physical Network Configuration report

The Physical Network Configuration report provides a hardcopy of the contents of the Physical Network Configuration screen.

PHYSICAL NETWORK CONFIGURATION REPORT

Page 1

LINUX

Date: 03/28/05

Time: 16:31:54

PHYSICAL NODE NAME

NODE ID

ADDRESS

LINUX

0

47.104.48.33

LNK1750

1

47.104.48.34

Virtual Network Configuration report

The Virtual Network Configuration report provides a hardcopy of the contents of the virtual network configuration screen.

VIRTUAL NETWORK CONFIGURATION REPORT Page 1

LINUX Date: 03/28/05 Time: 16:31:54

=====
 Metroplex

PHYSICAL NODE NAME	NODE ID	LOCAL PARTITION NAME	PTN ID	PTN CODE
LINUX	0	Fort Worth	4	0
LNx1750	1	Ptn-Live	2	1

Master Privilege Override report

The Master Privilege Override report provides a hardcopy of the contents of the master privilege override screen.

MASTER PRIVILEGE OVER-RIDE REPORT Page 1

LINUX Date: 03/28/05 Time: 16:31:55

=====

Training 1

SUPERVISOR NAME	ID	MASTER OVER-RIDE?
Supervisor 1	1	No
Supervisor 2	2	No
Administrator 11	11	No
Administrator 22	22	No
Bill Smith	100	No
Mary Matthew	102	No

Master Privilege Definition report

The Master Privilege Definition report provides a hardcopy of the contents of the master privilege definition screen.

MASTER PRIVILEGE DEFINITION REPORT Page 1

LINUX Date: 03/28/05 Time: 16:31:55

=====
Training 1

DISPLAY OPTIONS CONFIG CONTROL OPTIONSADMINISTRATION OPTIONS

DISPLAYS.....YES BASIC.....YES SUPERVISORS/PRIVS. .YES

PERSONAL FORMATS..YES POSITIONS REASSIGNS..YES SCOPES.....YES

PUBLIC FORMATS...YES AGENT SET PARAMS....YES DEFAULT COLORS.....YES

FORMULAS.....YES QUEUE SIZES.....YES TIME FRAMES.....YES

WALLBOARDS.....YES TIME OVERFLOW.....YES THRESHOLDS.....YES

GLOBAL VIEW.....YES OVERFLOW TARGETS.....YES ACD GROUPS.....YES

MONITOR.....YES ANNOUNCEMENTS.....YES ACD-DNS.....YES

ALARMS.....YES SPECIAL ROUTING.....YES AGENTS.....YES

NETWORK PARAMS.....YESWALKAWAY CODES.....YES

REPORT OPTIONS ACD-DN REASSIGNS.....YESLOB CODES.....YES

PERSONAL REPORTS..YES NETWORK TARGETS.....YESCHEDULES.....YES

PUBLIC REPORTS...YES CHANGE ORDERS.....YESLISTS.....YES

PERSONAL FORMATS..YES CUSTOMER OPTIONS...YES

PUBLIC FORMATS...YES CLIENT MANAGEMENT...YES

SUPERVISOR OPTIONS

FORMULAS.....YES

SPECTRUMS.....YES PROFILE.....YES DATA ACCESS OPTIONS

SYSTEM REPORTS...YES COLORS.....YES AGENT IDENTITY.....YES

GLOBAL VIEW.....YES MESSAGING.....YES AGENT PERFORMANCE..YES
MONITOR.....YES

NOTE: Privileges listed as NO* are not available for this partition.

Appendix E

System Log messages

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Standard error messages

Introduction

This section contains a list of standard error messages generated by the CC MIS product. These messages can be generated by any of the subsystems of the CC MIS product. The messages can be any of the following, depending on the conditions under which these errors are generated:

- informational messages
- warning messages
- fatal messages

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Log actions

The following log actions are the possible actions that you should perform when a log message is generated. Each log message specification indicates one or more action codes. Perform the actions in the order listed. If an action fails to resolve or determine the problem, perform the next action on the list.

The actions are:

- A Possible installation problem. If the system was installed recently, reinstall system. Otherwise, contact TAS - supply complete log messages.
- B Contact TAS - supply complete log messages.
- C Use database Storage Calculator to readjust database storage parameters. The Storage Calculator is accessed through the Maintenance interface by selecting the configuration then data storage menu items. Additionally, the hours of operation parameters can require adjustment.

- D Potential hardware or operating system failure. Contact hardware vendor with system error message and port name.
- E Contact design support prior to reboot of system. Supply complete log messages.
- F Possible connectivity problem to switch. Verify all connections and communication equipment between CC MIS and switch.
- G Re-enable link in Maintenance Interface through Diagnostics > Switch Link Definition.
- H Verify switch datafill parameters.
- I Check/verify switch datafill and status of MPC/EMPC.
- J No action required; normal operation of system. If problems are evident, check for other log messages.
- K Check/verify MIS session status on switch.
- L Potential problem only. Check other log messages carefully. If this log message occurs frequently, contact design support and supply all log messages.
- M Verify consistency of Network Operation Services (NOS) logon parameters and switch datafill.
- N Verify that all CC MIS partitions are configured with a valid subpool name.
- O Verify that switch datafill parameters do not exceed CC MIS limits.
- P Verify switch datafill parameters do not exceed database storage calculator parameters.
- Q Verify switch datafill. Contact switch support.
- R May be caused by excessive switch or MIS activity. Monitor for other log messages.
- S Check/verify switch hardware components (IOC, MPC/EMPC).

- T Potential synchronization problem between switch and MIS. If switch datafill has been altered since last MIS re-initialization, then re-initialize MIS using the “Update Switch Configuration Data” command from the “Run State Utilities” maintenance menu.
- U Check/verify report parameters.
- V Verify system default printer has been defined. Verify settings in the CC MIS Supervisor Interface for customer and/or supervisor default printers.
- W Consult the backup log.
- X Adjust report parameters.
- Y Check connectivity between CC MIS server and client software.
- Z Check for compatibility of Windows interface software and CC MIS server software.
- AA Consult the restore log.
- AB Check CC MIS configuration.
- AC Check Agent Definitions for valid APR configuration.
- AD Discontinue use of the Call Park feature.
- AE Verify that switch datafill uses only one login ID partition per subpool.
- AF The backup did not complete and may need to be restarted and monitored.
- AG The restore did not complete and the system may be in an unknown state. The restore may need to be restarted and closely monitored.
- AH Deselect translation of unneeded messages and retry.
- AI Check/verify configuration.

Standard log format

All log messages use the following format (note that portions within square brackets [] appear only when appropriate):

```
<message type> at <date> <time>
<message text>
Process: <process>
(<pid>)[Partition:<partition>][Instance:<instance>]
Source: <module>, <function>, <line>
[<other info>]
[<other info>]
```

where:

- <message type> = FATAL, WARNING, EVENT
- <date> = current date (MM/DD/YY)
- <time> = current time (HH:MM:SS)
- <message text> = see list that follows
- <process> = link_read, display, hdc, and so on
- <pid> = UNIX process ID of the process calling log function
- <partition> = partition number in which the process is running
- <instance> = indicates which instance of a process (for processes which may have multiple invocations)
- <module> = module that generated the log message
- <function> = function that generated the log message
- <line> = line number within module at which error occurred
- <other info> = can include items such as an operating system code for operating system errors

The error message text may contain [XX], 'YYYY', or both, which denote any numeric or string, respectively.

General messages

The following messages can be generated by any process within CC MIS.

Database read failure [xx] — table: yyyy

An error occurred while reading data from the table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database write failure [xx] — table: yyyy

An error occurred while writing data to the table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database deletion failure [xx] — table: yyyy

An error occurred while trying to delete a record from the table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database connect failure [xx]

An error occurred while trying to connect to the database server process to perform a database operation. “xx” gives the database error code. (Action Code: B)

Database table lookup failure [xx] — table: yyyy

An error occurred while trying to obtain database structure information for the table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database record lookup failure [xx] — rectype: yyyy

An error occurred while trying to obtain database structure information for the record type specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database record lookup failure [xx] — table: yyyy

An error occurred while trying to obtain database structure information for the record type used in the database table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database record count failure [xx] — table: yyyy

An error occurred while trying to obtain the count of records in the database table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database record enumeration failure [xx] — table: yyyy

An error occurred while trying to enumerate the records in the database table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Database record parse failure [xx] — table: yyyy

An error occurred while trying to parse a record in the database table specified in the “yyyy” field. “xx” gives the database error code. (Action Code: B)

Connection to database server not established

An attempt was made to perform a database request when no connection to the database server had been established. (Action Code: B)

Failed to send request to database server

An error occurred when attempting to send a database request message to the database server. (Action Code: B)

Failed to receive response from database server

An error occurred when attempting to read a database response message from the database server. (Action Code: B)

Unexpected message received from database server

The program received a message from the database server that it did not expect. (Action Code: B)

File mapping failure — file: xxxxx

Following a database enumeration request in which the resulting records were to be sorted, the program experienced an error attempting to map the results file named in the “xxxxx” field into its address space.

(Action Code: B)

File unmapping failure — file: xxxxx

Following a database enumeration request in which the resulting records were to be sorted, the program experienced an error attempting to unmap the results file named in the “xxxxx” field from its address space.

(Action Code: B)

Language record parse error — type: xxxxx

The program encountered a language record that it was unable to parse. The type of the record being parsed is named in the “xxxxx” field.

(Action Code: B)

Main record parse error — type: xxxxx, field: nn

The program encountered a main database record that it was unable to parse. The type of the record being parsed is named in the “xxxxx” field, and the field number which could not be parsed is given in the “nn” field.

(Action Code: B)

Poll failed

The “poll” system call returned an error code. (Action Code: B)

I/O port open error - port: yyyy

Indicates that the program was unable to open the I/O port identified by “yyyy”. The “system error” description should provide additional information as to the reason for the error. (Action Code: D)

I/O port setup error

Indicates that the program was unable to properly set the communications parameters for its I/O port. The “system error” description should provide additional information as to the reason for the error. (Action Code: D)

I/O port read error

Indicates that the program was unable to read from its associated I/O port. The “system error” description should provide additional information as to the reason for the error. (Action Code: D)

I/O port write error

Indicates that the program was unable to write to its associated I/O port. The “system error” description should provide additional information as to the reason for the error. (Action Code: D)

File open error - file: yyyy

Indicates that the program was unable to open the file specified by “yyyy”. (Action Code: B)

Freopen error - file: yyyy

Indicates that the program was unable to reopen the file specified by “yyyy”. (Action Code: B)

File create error - file: yyyy

Indicates that the program was unable to create the file specified by “yyyy”. (Action Code: B)

File write error - file: yyyy

Indicates that the program was unable to write to the file specified by “yyyy”. (Action Code: B)

Pipe creation error - pipe: yyyy

Indicates that the program was unable to create the named pipe specified by “yyyy”. Named pipes are used for communicating between programs. (Action Code: B)

Pipe open error - pipe: yyyy

Indicates that the program was unable to open the named pipe specified by “yyyy”. Named pipes are used for communicating between programs. (Action Code: B)

Pipe write error - pipe: yyyy

The program was unable to write to the named pipe specified by “yyyy”.
(Action Code: B)

Pipe read error - pipe: yyyy

The program was unable to read from the named pipe specified by “yyyy”.
(Action Code: B)

Memory allocation failure

The program was unable to allocate any additional memory.
(Action Code: B)

Unable to create a new process

The program was unable to create a new process. This could indicate that there are a large number of defunct or runaway processes in the system. A system reboot may alleviate the problem. (Action Code: E)

Unable to start “yyyy” program

The program was unable to start the specified program. The “system error” description should provide additional information as to the reason for the error. (Action Code: B)

yyyy environment variable not found

The specified environment variable was not found. This indicates that the program encountering the error is being run in the wrong environment. This is a design error which should only occur during software development.
(Action Code: B)

SIGHUP: Hang-up signal received

The process received a hang-up signal. This log message should never occur.
(Action Code: B)

SIGINT: Interrupt signal received

The process received an interrupt signal. This log message should never occur. (Action Code: B)

SIGILL: Illegal instruction

An illegal instruction was executed by the process. This log message should never occur. However, it could be associated with memory problems, potential disk failure, or installation errors. (Action Code: A, E)

SIGFPE: Floating-point exception

An invalid floating point operation occurred. (Action Code: B)

SIGEMT: Unexpected signal

A process received an unexpected emulation trap signal. (Action Code: B)

SIGBUS: Bus error

A bus error occurred. This is typically generated by an invalid memory pointer but may also be generated by faulty memory. (Action Code: B)

SIGSYS: Bad argument to system call

A system call was executed with invalid parameters. (Action Code: B)

SIGPIPE: Write to pipe with no read process

A write was issued to a IPC pipe but the reader process is no longer active. (Action Code: L)

SIGQUIT: Unexpected signal

A process received an unexpected signal to quit. (Action Code: L)

SIGTERM: Process terminated

This message is normally generated by processes as they are terminating. (Action Code: J)

SIGSEGV: Segmentation violation

This message may be generated due to an invalid memory pointer. It may also be generated due to hardware problems. (Action Code: B)

SIGIOT: IOT trap

An I/O trap was received on an input or output operation. (Action Code: B)

SIGTRAP: Trace trap

This message is generated if processes are being traced. This signal should never occur. (Action Code: B)

Socket creation failed - type: AF_UNIX/STREAM

Indicates that the program was unable to create a new socket. The “other info” line may include additional information. (Action Code: B)

Socket bind failed - socket: yyyy

Indicates that the program was unable to bind the socket to the file specified by “yyyy”. (Action Code: B)

Socket listen failed - socket: yyyy

Indicates that the program was unable to set the socket up as a listen socket. The “yyyy” field specifies the name of the socket. (Action Code: B)

Socket connect failed - socket: yyyy

Indicates that the program was unable to connect to the listen socket specified by “yyyy”. (Action Code: B)

Socket accept failed - socket: yyyy

Indicates that the program was unable to accept a connection to the listen socket specified by “yyyy”. (Action Code: B)

Lock error (nn) - lock: yyyy

An error occurred (specified by the “nn” field) getting the lock specified by “yyyy”. (Action Code: B)

File stat error - file: yyyy

An error occurred retrieving file status information on the file specified by “yyyy”. (Action Code: B)

Unexpected signal: nn

An unexpected signal was received by the process. The signal value is specified by “nn”. (Action Code: B)

MAPA messages

Introduction

This section contains the error messages generated by the MAPA subsystem of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Informational messages

This section lists the informational messages that may be generated by the master “ccmis” process. These messages are produced as part of normal system operation to indicate the occurrence of significant events.

Clock has been synchronized to network time

MAPA has completed synchronizing the time on the local node with the network time. (Action Code: J)

Node nnn (xxxxxx) is UP

The remote node whose ID and name are given by “nnn” and “xxxxxx” respectively is now operational. (Action Code: J)

Starting network time synchronization...

MAPA is starting to synchronize the time on the local node with the network time. This log only appears during system start-up. (Action Code: J)

System shutdown completed

MAPA has completed the orderly shutdown of the system and is exiting without error. This occurs when the system is shut down. (Action Code: J)

System startup initiated

MAPA is starting the orderly startup of the system. (Action Code: J)

Warning messages

This section lists the warning messages that may be generated by the MAPA process. These messages usually indicate an unusual condition that can be appropriately handled by the MAPA process, and which does not prevent the MAPA process from continuing operation.

Accept failed on connection socket - type: xxxxxx

MAPA was unable to accept a connection request as part of the startup of a connection-oriented service. The “xxxxxx” field indicates either AF_UNIX or AF_INET depending on whether the connection request was internal or external respectively. (Action Code: B)

Accept failed on socket for “xxxxxx” port

MAPA was unable to accept a connection request on the TCP port whose logical name is given by the “xxxxxx” field. Currently, these ports are used for establishing connections from LAN connected supervisor workstations but their use may be expanded in future releases. The name of the port gives an indication of the type of service that is provided by that port. MAPA will attempt to correct the problem by re-creating the socket for this port. (Action Code: L)

Asked to add client xxxxxx to unknown partition “nnn”

The system attempted to register the LAN-connected PC whose IP address is given by “xxxxxx” against the partition whose ID is given by “nnn”. (Action Code: B)

Asked to add client xxxxxx to unknown port “xxxxxx”

The system attempted to register the LAN-connected PC whose IP address is given by “xxxxxx” against an unknown TCP port named “xxxxxx”. (Action Code: B)

Asked to add duplicate node ID “nnn”

A request was made to add a network node to the system using a node ID that is already in use. (Action Code: L)

Asked to add duplicate node address “xxxxxx”

A request was made to add a network node to the system using a node address that is already in use. (Action Code: L)

Asked to add service for unknown program “xxxxxx”

MAPA was requested to begin monitoring a program whose name (given by “xxxxxx”) is unknown to MAPA. (Action Code: B)

Asked to change maximum on lock in unknown partition “nnn”

A request was received to change the maximum for a lock in a unknown partition. The unknown partition ID is given by “nnn” in the log message. (Action Code: B)

Asked to change maximum on unknown lock “nnn:xxxxxx”

A request was received to change the maximum for an unknown partition/lock combination. The “nnn:xxxxxx” field in the log message specifies the partition ID and lock name. (Action Code: B)

Asked to delete all clients in unknown partition “nnn”

A request was received to delete all IP address registrations against the partition whose ID is given by “nnn”. (Action Code: B)

Asked to delete local node

A network node deletion request was received which specified the local node as the node to be deleted. (Action Code: B)

Asked to delete unknown node ID “nnn”

A network node deletion request was received which specified an unknown node to be deleted. (Action Code: L)

Asked to delete unknown partition “nnn”

A partition deletion request was received for a unknown partition. (Action Code: L)

Asked to disable networking for unknown partition “nnn”

A request was received to disable networking for an unknown partition.
(Action Code: B)

Asked to enable networking for unknown partition “nnn”

A request was received to enable networking for an unknown partition.
(Action Code: B)

Asked to lock “xxxxxx” in unknown partition “nnn”

A lock request was received to lock the “xxxxxx” resource in an unknown partition whose ID is given by “nnn”. (Action Code: B)

Asked to register xxxxxx “nnn” against unknown partition “ppp”

A request was received to register an IPC object against an unknown partition. The IPC object being registered is identified by:

xxxxxx — Specifies the type of IPC object, where SHMID identifies a shared memory segment, SEMID identifies a semaphore, and MSGID identifies a message queue.

nnn — Specifies the ID number of the IPC object.

(Action Code: B)

Asked to run “xxxxxx” in inactive partition “nnn”

A request was received to run program “xxxxxx” in a partition which is currently in the stopped state. (Action Code: L)

Asked to run “xxxxxx” in unknown partition “nnn”

A request was received to run program “xxxxxx” in a partition which is unknown. (Action Code: L)

Asked to run “xxxxxx” on unknown node “nnn”

A request was received to run program “xxxxxx” on a node which is unknown. (Action Code: L)

Asked to set environment for unknown partition “nnn”

A request was received to set an environment variable in a unknown partition. (Action Code: B)

Asked to set process limit for unknown class “xxxxxx”

A request was received to change the process limit for an unknown transient program class. (Action Code: L)

Asked to set process limit for unknown partition “nnn”

A request was received to change a transient process limit for an unknown partition. (Action Code: L)

Asked to start unknown partition “nnn”

A request was received to start an unknown partition. (Action Code: L)

Asked to start unknown program “xxxxxx”

A request was received to start an unknown program. The name of the program is identified by “xxxxxx”. (Action Code: L)

Asked to stop unknown partition “nnn”

A request was received to stop an unknown partition. (Action Code: L)

Asked to unlock “xxxxxx” in unknown partition “nnn”

A request was received to unlock the resource identified by “xxxxxx” in an unknown partition. (Action Code: L)

Clock synchronization failed

MAPA was unable to set the local system clock to the average network time. (Action Code: B)

Connection timeout expired

A timeout occurred while creating the connection for a connection-oriented service. (Action Code: B)

Dependent program “nnn” not found for program “xxxxxx”

The program description for the program named “xxxxxx” specifies that it is dependent on an unknown program whose program number is given by “nnn”. (Action Code: B)

Environment space exhausted for partition “nnn”

There is no more space available for storing private environment variables for the partition whose number is “nnn”. (Action Code: B)

Error reading service ID from connection socket - bytes=n

A request for a connection-oriented service has failed because the complete service ID (4 bytes long) could not be read from the connection socket. MAPA was able to read only “n” bytes of the service ID. (Action Code: B)

Failed to kill program xxxxxx (nnn)

MAPA was unable to kill the program named “xxxxxx” and process ID is “nnn”. (Action Code: L)

Failed to set RT priority - pid: ppp, priority: nnn

MAPA was unable to set a real-time priority for the process whose process ID is given by “ppp”. The requested real-time priority value was “nnn”. (Action Code: B)

Failed to set TS priority - pid: nnn, priority: nnn

MAPA was unable to set a time-sharing priority for the process whose process ID is given by “ppp”. The requested time-sharing priority value was “nnn”. (Action Code: B)

Halt request received - shutdown starting

A halt request was received. MAPA is proceeding with graceful system shutdown. (Action Code: J)

Lock “nnn:xxxxxx” is unknown

A lock request was received for an unknown lock. “nnn:xxxxxx” is the partition number and name of the unknown lock. (Action Code: B)

MAPA message queue found in IPC registry

Indicates that MAPA found its own message queue identifier in the list of message queues to be deleted upon program or partition termination. MAPA automatically removes this object from the list.

(Action Code: L)

MAPA shared memory found in IPC registry

Indicates that MAPA found its own shared memory segment identifier in the list of shared memory segments to be deleted upon program or partition termination. MAPA automatically removes this object from the list.

(Action Code: L)

Network response timeout - message type: xxxxxx

No response was received within the allotted timeout period for a message sent to a remote node. The type of message is “xxxxxx”. (Action Code: B)

No network time available - using nodal time

Indicates that MAPA was unable to find any other nodes on the network during system startup and is therefore using the current time of the system instead of setting the system time to the average time of all other nodes on the network. (Action Code: J)

No object type in IPC register request from process nnn

The type of Inter-Process Communication (IPC) object was not specified in an IPC object registration request. “nnn” is the process ID of the program which sent the request. (Action Code: B)

Nodal time adjustment failed

MAPA was unable to make an adjustment to the nodal time to bring it in line with the network time. (Action Code: B)

Node nnn (xxxxxx) not responding

A node in the network is not responding to messages sent to it. “nnn” is the node ID number and “xxxxxx” is the node name. (Action Code: L)

Node table is full

No more node table slots are available for a new node. (Action Code: B)

Partition “nnn” already exists

A request was received to create a partition which already exists.
(Action Code: L)

Program “nnn (xxxxxx)” asked to kill unknown service “[nnn.]PPP.ppppp”

MAPA received a request to kill a program that it does not know about. The program is identified by a two- or three-part identifier as follows:

nnn — Specifies the node ID on which the program is running. This part of the identifier does not appear if the program is on the local node.

PPP — Identifies the partition ID in which the program is running.

ppppp — Identifies the Unix process ID of the program.

(Action Code: B)

Program “nnn (xxxxxx)” attempted to register MAPA message queue

The identified program asked MAPA to register MAPA’s own message queue for deletion upon program or partition termination. “xxxxxx” and “nnn” is the name and process ID of the program making the request.

(Action Code: L)

Program “nnn (xxxxxx)” attempted to register MAPA shared memory

The identified program asked MAPA to register MAPA’s own shared memory segment for deletion upon program or partition termination. “xxxxxx” and “nnn” is the name and process ID of the program making the request. (Action Code: L)

Partition table is full

No more partition table slots are available for a new partition.
(Action Code: B)

Partition type “xxxxxx” not found

A request was received to create a partition of a type that is not known. “xxxxxx” is the invalid partition type. (Action Code: B)

Program xxxxxx (nnn) aborted: dddddddddddddddd

The program specified has aborted abnormally. “xxxxxx” and “nnn” is the name and process ID of the aborted program, and “ddddddddddddddd” is the description of the abort cause. (Action Code: B)

Program xxxxxx (nnn) is dead

The program specified has died. xxxxxx= program name, (nnn)= programs process ID. (Action Code: B)

Program xxxxxx (nnn) is insane

The program specified was declared insane and will be killed by MAPA. xxxxxx= program name, (nnn)= programs process ID. (Action Code: B)

Program table is full

No more program table slots are available for a new program instance. (Action Code: B)

Received “xxxxxx” from unrecognized program “nnn (pppppp)”

The message xxxxxx was received from an unrecognized program with process ID of (nnn) and program name of (pppppp). (Action Code: L)

Remote program xxxxxx (nnn.PPP.ppppp) is insane

A program started on a remote node in the network has been declared insane and will be killed by MAPA. “xxxxxx” is the name of the program and “nnn.PPP.ppppp” is the program service ID as follows:

nnn — Specifies the node ID on which the program is running.

PPP — Identifies the partition ID in which the program is running.

ppppp — Identifies the Unix process ID of the program.

(Action Code: B)

Service addition request from unknown program “nnn”

A request was received to register an already running process with MAPA but the process sending the request is unknown to MAPA. (Action Code: B)

Socket receive failed

MAPA was unable to receive a message from a remote node. (Action Code: B)

Socket send failed

MAPA was unable to send a message to a remote node. (Action Code: B)

Unable to bind address for xxxxxx stream socket

MAPA was unable to bind an address to the stream socket whose type is given by “xxxxxx”. The “xxxxxx” field indicates either AF_UNIX or AF_INET depending on whether the socket is for internal or external communication respectively. (Action Code: B)

Unable to bind address for message socket

MAPA was unable to bind an address to the message socket used to communicate with other nodes in the network. (Action Code: B)

Unable to create xxxxxx stream socket

MAPA was unable to create a stream socket whose type is given by “xxxxxx”. The “xxxxxx” field indicates either AF_UNIX or AF_INET depending on whether the socket is for internal or external communication respectively. (Action Code: B)

Unable to create listen queue for stream socket

The queue used to listen for requests on a stream socket could not be created. (Action Code: B)

Unable to create message socket

MAPA was unable to create the message socket used to communicate with other nodes in the network. (Action Code: B)

Unable to determine ID of priority class “xx”

MAPA was unable to determine the numeric ID of the priority class given by “xx”. “xx” is either “TS” for the time-sharing priority class, or “RT” for the real-time priority class. (Action Code: B)

Unable to set system time

A failure occurred trying to set a new system time. (Action Code: B)

Unauthorized connection attempt on port “xxxxxx” from nnn.nnn.nnn.nnn

A connection attempt was received on the TCP port whose name is given by “xxxxxx” from an IP address which is not authorized to connect to this system. The IP address of the unauthorized user is given by “nnn.nnn.nnn.nnn”. (Action Code: AB)

Unexpected acknowledgment for message type nnn, txid=xxx

An acknowledgment message was received which was not expected. The type and transaction ID of the message being acknowledged is given by the “nnn” and “xxx” fields respectively. (Action Code: B)

Unknown message type “xxx” received from “nnn”

Mapa received a message which it is not able to parse. (Action Code: B)

Unknown service ID “xxxxxx” in SRVC_BEGUN message

A remote node has indicated that it has started a service on behalf of the local node that the local node is not aware of. (Action Code: B)

Unknown service ID “xxxxxx” in connection request

A request for a connection-oriented service has failed because the service ID read from the connection socket could not be found in the program table. (Action Code: B)

Fatal error messages

Fatal error messages are generated by MAPA in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Directory “xxxxxx” does not exist

A change directory command failed to find the specified directory.
(Action Code: B)

Entry nnn in LOCKS section has invalid lock type

The file which describes the software configuration of the system contains an invalid instruction. Specifically, an invalid lock type was specified for item number “nnn” in the LOCKS section of the file. (Action Code: B)

Entry nnn in LOCKS section is invalid

The file which describes the software configuration of the system contains an invalid instruction. Specifically, item number “nnn” in the LOCKS section of the file could not be parsed. (Action Code: B)

Entry nnn in PARTITIONS section is invalid

The file which describes the software configuration of the system contains an invalid instruction. Specifically, item number “nnn” in the PARTITIONS section of the file could not be parsed. (Action Code: B)

Entry nnn in PORTS section is invalid

The file which describes the software configuration of the system contains an invalid instruction. Specifically, item number “nnn” in the PORTS section of the file could not be parsed. (Action Code: B)

Entry nnn in PROGRAMS section has invalid class

The file which describes the software configuration of the system contains an invalid instruction. Specifically, an invalid program class was specified in item number “nnn” in the PROGRAMS section of the file. (Action Code: B)

Entry nnn in PROGRAMS section has invalid transient program class

The file which describes the software configuration of the system contains an invalid instruction. Specifically, an invalid transient program class was specified in item number “nnn” in the PROGRAMS section of the file.

(Action Code: B)

Entry nnn in PROGRAMS section is invalid

The file which describes the software configuration of the system contains an invalid instruction. Specifically, item number “nnn” in the PROGRAMS section of the file could not be parsed. (Action Code: B)

Entry nnn in XPROG_CLASSES section is invalid

The file which describes the software configuration of the system contains an invalid instruction. Specifically, item number “nnn” in the XPROG_CLASSES section of the file could not be parsed.

(Action Code: B)

Failed to re-create connection socket - type: xxxxxx

The attempt to recreate a connection socket in an attempt to recover from an earlier “Socket accept failure” has failed. (Action Code: B)

Invalid tag “xxxxxx” in GENERAL section of config file

The file which describes the software configuration of the system contains an invalid instruction. Specifically, an invalid parameter name was found in the GENERAL section of the file. (Action Code: B)

Invalid section name “xxxxxx” in configuration file

The file which describes the software configuration of the system contains an invalid instruction. Specifically, an invalid section was found in the file.

(Action Code: B)

Lock table is full

The lock table has become full. No more locks could be created.

(Action Code: B)

Message receive failed - queue ID: nnn

Message queue read failed for some reason other than no messages in queue. “nnn” is the message queue identifier of the MAPA message queue.

(Action Code: B)

Message send failed - queue ID: nnn, msgtype: ttt, pid: ppp

Message queue send failed for some reason other than message queue was full. The message queue identifier on which the send was attempted is given by “nnn”. The type of message being sent was “ttt” and the process to which it was being sent was “ppp”. (Action Code: B)

Missing -c <configuration file> argument

MAPA was invoked without the -c argument which tells it the file name of its configuration file. (Action Code: B)

Missing section in configuration file

The file which describes the software configuration of the system is missing a required section. (Action Code: B)

No partitions defined

No partitions were defined in the software configuration file.

(Action Code: B)

No programs defined

No programs were defined in the software configuration file.

(Action Code: B)

Partition table is full

Too many partition types were specified in the software configuration file.

(Action Code: B)

Port table is full

Too many TCP ports were specified in the software configuration file.

(Action Code: B)

Program table is full

Too many programs were specified in the software configuration file.
(Action Code: B)

Record nnn in physical node table is invalid

Record number “nnn” in the physical node table which describes the nodes in the network could not be parsed. (Action Code: B)

Transient program class table is full

The file which describes the software configuration of the system contains an invalid instruction. Specifically, too many transient program classes were defined. (Action Code: B)

Unknown program “xxxxxx” associated with TCP port pppppp

The file which describes the software configuration of the system contains an invalid instruction. Specifically, the program used to service a request on the TCP port named “pppppp” was not described in the PROGRAMS section of the configuration file. (Action Code: B)

DMSLINK messages

Introduction

This section contains the error message generated by the DMSLINK subsystem of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Informational messages

The following messages do not indicate an error condition but are used as notification of significant events which occur as part of normal operation.

Call data transfer beginning...

The switch has acknowledged the request to begin transferring call event data. (Action Code: J)

Connected to switch <ip_addr:port>

The CC MIS system has successfully connected to the switch identified by the given IP address and port number. (Action Code: J)

End of initialization data download...

The switch has completed the initialization data download. (Action Code: J)

Initialization data download beginning...

The switch has responded to the request to send initialization data and is about to start the initialization data download. (Action Code: J)

Initiating a nosLogon...

DMSLINK is sending a nosLogon request to the switch. (Action Code: J)

Initiating a nosLogout...

DMSLINK is sending a nosLogout request to the switch. (Action Code: J)

LINK TRACING IS NOW OFF

Link messages in both directions are now being logged to the link data trace file. (Action Code: J)

LINK TRACING IS NOW ON

Link message tracing has been turned off and the trace file has been closed. (Action Code: J)

Requesting initialization...

DMSLINK is requesting initialization data from the switch. (Action Code: J)

Requesting start of call data transfer...

DMSLINK is requesting the switch to begin sending call event data. (Action Code: J)

Warning messages

This section lists the warning messages that may be generated by the DMSLINK process. These messages usually indicate an unusual condition that can be appropriately handled by the DMSLINK process, and which does not prevent the DMSLINK process from continuing execution.

<ro type> is not a valid operation at this time

A Remote Operation (RO) of type <ro type> was received from the switch at a time that was not appropriate (for example, an initialization data RO was received when no dspRequestInit request has been issued).

(Action Code: F, K, B)

ACD group <primary dn> associated with unknown subpool number nn

A switchSendAcqGroupData message was received from the switch that referenced a subpool for which CC MIS has not received a switchSendSubPoolData message for. (Action Code: F, R)

ACD group configuration overflow error

The merging of newly received initialization data with configuration information obtained from a previous initialization sequence has resulted in too many ACD groups in the configuration. This indicates a software problem in the CC MIS system. (Action Code: B)

ACD-DN configuration overflow error

The merging of newly received initialization data with configuration information obtained from a previous initialization sequence has resulted in too many ACD-DNs in the configuration. This indicates a software problem in the CC MIS system. (Action Code: B)

Accept failed

A request to accept a new application connection to this DMSLINK process has failed.
(Action Code: B)

Already Logged on - Logging off

In attempting to log on to the switch, it was discovered that the switch believes the DSP is already logged on. The DSP now requests a logoff and restarts the logon sequence. (Action Code: L)

Application resource shortage error - type: nnn

The switch is reporting an application resource shortage error of a type that is not recognized by the DSP. 'nn' gives the unrecognized reason code contained in the error message. No action is taken by DMSLINK other than reporting the error. (Action Code: Q)

Associate request received for unknown subpool “<subpool name>”

DMSLINK received a request from another process to associate itself with a subpool that is not in the configuration information received from the switch. (Action Code: N)

Bad value in RO: rrrrrr, field: fffff, value: vvvvv

An illegal value has been detected in an RO received from the switch. “rrrrr” identifies the type of RO, “fffff” gives the field within the RO, and “vvvvv” gives the illegal value. DMSLINK attempts to continue regardless of the error. (Action Code: S, B)

Data receive local failure on <LAN>

An error occurred while attempting to read data from the TCP/IP switch link. (Action Code: AC, F, B)

Dump in progress - LM request denied

This error indicates that a DMS image is currently being taken and all load management requests will be rejected. This error condition is passed back to the CCLINK process in the response to its request. (Action Code: J)

Error message received for unknown invoke ID nnn

DMSLINK received a ReturnError message from the switch for an Invoke message that DMSLINK does not believe to be outstanding to the switch. (Action Code: L)

Hard limit of nnn ACD groups reached

Indicates that more than “nnn” unique ACD groups exist in the ACD pool to which the CC MIS has been associated. All further ACD groups will be silently discarded. The ACD group limit is determined from the options configured on the software load tape. (Action Code: O)

Hard limit of nnnn ACD-DNs reached

Indicates that more than “nnnn” unique ACD-DNs exist in the ACD pool to which the CC MIS has been associated. All further ACD-DNs are silently discarded. The ACD-DN limit is determined from the options configured on the software load tape (17 x number of ACD groups configured). (Action Code: O)

Hard limit of nnnn positions reached

Indicates that more than “nnnn” unique position IDs exist in the ACD pool to which the CC MIS has been associated. All further position IDs will be silently discarded. The position limit is determined from the options configured on the software load tape. (Action Code: O)

Hard limit of nnnn subgroups reached

Indicates that more than “nnnn” unique subgroups exist in the ACD pool to which the CC MIS has been associated. All further subgroups will be silently discarded. The subgroup limit is determined from the options configured on the software load tape (number of positions configured / 2). (Action Code: O)

Hard limit of nnn subpools reached

Indicates that more than “nnn” unique subpools exist in the ACD pool to which the CC MIS has been associated. All further subpools will be silently discarded. The subgroup limit is currently set to 128. (Action Code: O)

Illegal message type xx received on OOB pipe

DMSLINK received an unrecognized message on the out-of-band events pipe from the simulator. The illegal message type is given by the 'xx' field in the error message. This message is simply ignored. (Action Code: L)

Illegal message type [nn] received from application

An illegal message type was received by DMSLINK from another CC MIS application. The message will be ignored. (Action Code: B)

Invalid argument error - type: nn

The switch is reporting an invalid argument error of a type that is not recognized by the DSP. 'nn' gives the unrecognized reason code contained in the error message. No action is taken by DMSLINK other than reporting the error. (Action Code: L)

Invalid arguments passed - ignored

The DMSLINK process has been invoked with invalid arguments. The invalid arguments have been ignored. (Action Code: B)

Invalid NOP protocol version

The switch has rejected a log on request because the NOP protocol version requested by the DSP is invalid. (Action Code: I)

Invalid line in initialization file

At least one invalid line was found in the initialization file. (Action Code: B)

Invalid subpool password - LM request denied

A load management request has been denied because the subpool password as read from the configuration database does not match the password datafiled on the switch for the specified subpool. This error condition is passed back to the CCLINK process in the response to its request. (Action Code: M)

LINK TRACE FILE SIZE LIMIT REACHED

The link trace data file for this link has reached its maximum file size. Link data tracing has been terminated. (Action Code: J)

Lost connection to switch

DMSLINK has lost communication with the switch. (Action Code: L, F)

Lost synchronization on input data stream

DMSLINK has lost synchronization on the input data stream and will attempt to resynchronize. (Action Code: L)

No Remote Load Management process

The switch could not create the Remote Load Management process to service a load management request from the DSP. This error condition is passed back to the CCLINK process in the response to its request.

(Action Code: Q)

No buffers available

The switch has run out of buffer space for ACD-MIS ROs. No action is taken by DMSLINK other than reporting the error. (Action Code: Q)

Non-control message received on unassociated socket

An application program has sent a non-control message on a socket connection to DMSLINK before it has associated itself with a particular subpool. (Action Code: B)

Operation sequence error - type: nn

The switch is reporting an operation sequence error of a type that is not recognized by the DSP. 'nn' gives the unrecognized reason code contained in the error message. No action is taken by DMSLINK other than reporting the error. (Action Code: L)

Pool already associated - Logging off

The pool with which the DSP is attempting to associate itself is already associated with another DSP. DMSLINK will initiate a logoff sequence before terminating itself. (Action Code: M, Q)

Position nnnn unexpectedly moved to another ACD group

An event message was received for position "nnnn" which indicates that it is now in an ACD group which is different from the ACD group that the CC MIS system believes it to be in. This could be caused by lost messages on the X.25 link. (Action Code: F)

Position configuration overflow error

The merging of newly received initialization data with configuration information obtained from a previous initialization sequence has resulted in too many positions in the configuration. This indicates a software problem in the CC MIS system. (Action Code: B)

Posn nnnn moved with call active: ssssssssss -> dddddddddd

The CC MIS system has determined that position “nnnn” was moved via load management with an ACD call active. The ACD group in which the call was answered is given by “ssssssssss” and the new ACD group is given by “ddddddddd”. Call timings will be split between the two ACD groups with all call time after the time of the error message being logged against the new ACD group. (Action Code: J)

Posn nnnn moved with call presented: ssssssssss -> dddddddddd

The CC MIS system has determined that position “nnnn” was moved via load management with an ACD call presented to the agent. The ACD group in which the call was originally received is given by “ssssssssss” and the new ACD group is given by “ddddddddd”. All statistics for this call will be logged against the new ACD group. (Action Code: J)

RO rejected by DSP - type: tttttt, code: cccccc

A badly formatted RO was received by the DSP and has been rejected. The “ttttt” field identifies the type problem encountered (General, Invoke, ReturnResult, or ReturnError) and the “ccccc” field provides the specific problem code. The hexadecimal dump of the received message will follow in the error log. (Action Code: M, B, Q)

RO rejected by switch - type: tttttt, code: cccccc

The switch rejected an RO sent by DMSLINK. The “ttttt” field identifies the type problem encountered (General, Invoke, ReturnResult, or ReturnError) and the “ccccc” field provides the specific problem code. (Action Code: M, B)

Reject message received for unknown invoke ID nnn

DMSLINK received a Reject message from the switch for an Invoke message that DMSLINK does not believe to be outstanding to the switch. (Action Code: L)

Response timeout on <ro type> request - retrying...

DMSLINK has not received a response from the switch for the message whose type is given by <ro type>. DMSLINK will retry the request up to three times before giving up and re-establishing the link. (Action Code: L)

Result message received for unknown invoke ID nnn

DMSLINK received a return result for an invoke message numbered “nnn” which does not appear to have been generated by CC MIS. (Action Code: Q)

Searching for a link...

Connection attempts have failed on all links to the switch. DMSLINK continues to attempt to establish a connection. (Action Code: F, I, S)

Simulator process has died

The simulator process for this link has died. DMSLINK will automatically restart it. (Action Code: B)

Subgroup configuration overflow error

The merging of newly received initialization data with configuration information obtained from a previous initialization sequence has resulted in too many subgroups in the configuration. This indicates a software problem in the CC MIS system. (Action Code: B)

Subpool nnn is using the “Call Park” feature

DMSLINK has determined that the “Call Park” feature is being used in subpool number “nnn”. Use of this feature is not supported by CC MIS and causes invalid statistics to be gathered. (Action Code: AD)

Subpool nnn uses multiple (mmm) login ID partitions

DMSLINK has determined that the multiple login ID partitions are being used in subpool number “nnn”. This will cause statistics for the same agent IDs in different login ID partitions to be accumulated under the same agent ID in the CC MIS historical database. (Action Code: AD)

Subpool configuration overflow error

The merging of newly received initialization data with configuration information obtained from a previous initialization sequence has resulted in too many subpools in the configuration. This indicates a software problem in the CC MIS system. (Action Code: B)

Switch is running a different NOP protocol version (xxxxx)

The switch is running a protocol version than is that being used by DMSLINK. Some messages may fail when DMSLINK attempts to decode them. (Action Code: M)

Switch not responding...terminating session

Indicates that a message has been retransmitted to the switch the maximum number of times without receiving a response. DMSLINK is now terminating the existing session with the switch and will attempt to re-establish it. (Action Code: F)

Synchronization regained after skipping nnn bytes

DMSLINK has regained synchronization on the input data stream from the switch after skipping over “nnn” bytes of data. Some data has been lost. (Action Code: F)

System problem error - type: nn

The switch is reporting a system problem error of a type that is not recognized by the DSP. 'nn' gives the unrecognized reason code contained in the error message. No action is taken by DMSLINK other than reporting the error. (Action Code: Q)

Time changed backwards

The system clock has been changed backwards. Historical data accumulated around the time of this error log should not be trusted. (Action Code: B)

Too many ROs outstanding from DSP

The switch has indicated that it currently has too many unprocessed Remote Operations outstanding to be able to process the one just sent by the DMSLINK process. This error would indicate a problem with the switch because DMSLINK does not allow more outstanding ROs to be sent to the switch than can be handled by the switch according to the ACD-MIS protocol specification. No action is taken by DMSLINK other than reporting the error. (Action Code: Q)

Updating physical link configuration

DMSLINK has been notified of a potential change in the status of its X.25 port. This log appears when the “X.25 Diagnostics” screen is used to disable or enable an X.25 link. (Action Code: J)

Value range error in non-LM request

The switch is reporting a value range error in a request that is not a load management request. No action is taken by DMSLINK other than reporting this error. For LM request messages encountering a value range error, this error condition is passed back to the CCLINK process for appropriate handling. (Action Code: L)

Fatal error messages

Fatal error messages are generated by DMSLINK in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

ACD pool protocol “xxxxx” is not supported

The ACD pool protocol datafiled on the switch for this link is invalid. (Action Code: Q)

Data transmit local failure on <LAN>

An error occurred while attempting to write data to the switch link. (Action Code: F, B)

Invalid parameter [c] in initialization file

An invalid parameter was found in the initialization file. The invalid parameter is identified by “[c]” in the error message. (Action Code: B)

Invalid pool password

The password for the pool as read from the system database does not match the password datafilled on the switch for the pool. (Action Code: M)

Invalid pool protocol

The switch is not running the correct protocol version. (Action Code: M)

Maximum logons exceeded

The switch has disallowed the DSP's request to log on because it already has the maximum number of simultaneous logons in progress.
(Action Code: K, S)

Missing parameter in initialization file

At least one parameter is missing from the initialization file specified by the “-f” option used to invoke the DMSLINK process. (Action Code: B)

Unable to open startup file: xxxxxx

DMSLINK was unable to open the startup configuration file specified by the “-f” option used to invoke the DMSLINK process. (Action Code: B)

Unable to start ACDMIS application on switch

The switch is returning an invalid argument error stating that it does not recognize the application ID. (Action Code: Q)

Unable to start simulator process

DMSLINK was unable to start the simulator process for a simulated link.
(Action Code: B)

Undefined pool name

The pool name as read from the system database does not match any ACD pool datafiled on the switch. (Action Code: M)

User ID or password is invalid

The user ID or password as read from the system database does not agree with any user ID/password combination programmed on the switch. The request for the start-up of the ACD-MIS application has been denied. (Action Code: M)

Wrong switch state for request

The switch is indicating that it is in the wrong state to accept a request from the DSP. To re-synchronize the switch and the DSP, DMSLINK will initiate a logoff/logon sequence followed by a re-initialization. (Action Code: Q)

CCLINK messages

Introduction

This section lists the error/warning messages that may be generated by CCLINK. These messages usually indicate an unusual condition that has occurred within CC MIS software.

Warning error messages

This section lists the warning messages that may be generated by the CCLINK process. These messages usually indicate an unusual condition that can be appropriately handled by the CCLINK process, and which does not prevent the CCLINK process from continuing execution.

Invalid CC message received

CCLINK received an unknown message. (Action Code: B)

Configuration Control transaction log is corrupted

The Configuration Control transaction log has become corrupted.
(Action Code: B)

Switch connection aborted

The switch aborted its connection. (Action Code: B)

Switch connection has aborted; retrying...

The switch has aborted its connection, CCLink is attempting to reconnect.
(Action Code: B)

Unable to send LM command to switch

The switch did not accept the load management command. (Action Code: B)

Fatal error messages

Fatal error messages are generated by CCLINK in response to conditions which prevent the process from continuing normal execution. This section lists the error message.

Subpool yyyy on link nnnn does not exist

The subpool yyyy does not exist on link nnnn. (Action Code: H)

RPTGEN messages

Introduction

This section contains the error message generated by the RPTGEN subsystem of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Warning messages

This section lists the warning messages that may be generated by the RPTGEN process. These messages usually indicate an unusual condition that can be appropriately handled by the RPTGEN process, and which does not prevent the RPTGEN process from continuing execution.

Unable to print: rptgen tabular output

A failure was received from the call to print_job. (Action Code: L)

Unable to print: rptgen eventlog output

A failure was returned by the call to print_job. (Action Code: L)

Unable to lock DATA database

RPTGEN was unable to obtain a lock on the data database. (Action Code: L)

Unable to unlock DATA database

RPTGEN was unable to release the lock on the data database.
(Action Code: L)

The following errors are all warning messages dealing with file close and file unlink errors. These errors occur when the system calls `fclose` and `unlink` return bad return codes. (Action Code: B)

- Unable to close file: `stdout`.
- Unable to unlink graphic report intermediate file.
- Unable to close file: graphic preview file.
- Unable to close graphic report intermediate file.

Fatal error messages

Fatal error messages are generated by RPTGEN in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Unable to read file: graphic report intermediate file

A system call to `fgets` returned a bad return code. (Action Code: B)

Invalid report number requested

A report was requested that doesn't exist. (Action Code: U)

Unable to find delimiter character

Display was unable to find the delimiter character, and is therefore unable to print the report. (Action Code: B)

CFGDB messages

Introduction

This section contains the error messages generated by the CFGDB subsystem of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Warning messages

This section lists the warning messages that may be generated by the CFGDB process. These messages usually indicate an unusual condition that can be appropriately handled by the CFGDB process, and which does not prevent the CFGDB process from continuing execution. Although not fatal, many of these warnings indicate a serious condition that may require attention.

Unable to lock configuration database

An error occurred trying to lock the configuration database.

(Action Code: B)

Unable to obtain CONFDB read lock

An error occurred trying to obtain a read lock on the configuration database.

(Action Code: B)

Unable to obtain CONFDB write lock

An error occurred trying to obtain a write lock on the configuration database. (Action Code: B)

Unable to unlock configuration database

An error occurred trying to unlock the configuration database.

(Action Code: B)

Fatal error messages

Fatal error messages are generated by CFGDB in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Options file read error

An error occurred trying to read the global options file. (Action Code: B)

Unable to determine my customer ID number

An error occurred trying to determine the partition ID from the environment. (Action Code: B)

Error parsing record in yyyy

An error occurred trying to parse a record in the specified file. (Action Code: B)

File seek error - file: yyyy

An error occurred trying to seek to a location in the specified file. (Action Code: B)

File stat failure - file: yyyy

An error occurred trying to stat the specified file. (Action Code: B)

File tell error - file: yyyy

An error occurred trying to perform an ftell on the specified file. (Action Code: B)

CFGMGR messages

Introduction

This section contains the error messages generated by the CFGMGR subsystem of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

Warning messages

This section lists the warning messages that may be generated by the CFGMGR process. These messages usually indicate an unusual condition that can be appropriately handled by the CFGMGR process, and which does not prevent the CFGMGR process from continuing execution. Although not fatal, many of these warnings indicate a serious condition that may require attention.

Could not flush message buffer

An error occurred trying to flush the message buffer. (Action Code: B)

Could not make socket non-blocking

An error occurred trying to make a socket non-blocking. (Action Code: B)

Could not write message to cfgmgr

An error occurred trying to write a message to the cfgmgr. (Action Code: B)

COMPORTS table access failure (rc = xxxx)

An error occurred trying to access the COMPORTS database table. (Action Code: B)

CUST_INFO table access failed for custID xxxx (rc = xxxx)

An error occurred trying to access the CUST_INFO database table. (Action Code: B)

CUST_INFO table access failed for partition xxxx

An error occurred trying to access the CUST_INFO database table.
(Action Code: B)

CUST_INFO table access failure (rc = xxxx)

An error occurred trying to access the CUST_INFO database table.
(Action Code: B)

CUST_INFO update fails for partition xxxx after move (rc = xxxx)

An error occurred trying to access the COMPORTS database table.
(Action Code: B)

Cannot use link number xxxx (max is xxxx)

The specified link number is greater than the maximum number of links allowed. (Action Code: B)

Could not add partition xxxx

An error occurred trying to add the specified partition. (Action Code: B)

Could not allocate disk xxxx for partition xxxx

An error occurred trying to add the specified disk for the specified partition.
(Action Code: B)

Could not calculate free space on disk xxxx

An error occurred trying to calculate the free space on the specified disk.
(Action Code: B)

Could not determine move completion status for partition xxxx

An error occurred trying to determine the move completion status for the specified partition. (Action Code: B)

Could not reset reinit time for link xxxx

An error occurred trying to reset the reinitialization time for the specified partition. (Action Code: B)

Could not restart partition xxxx after the move

An error occurred trying to restart the specified partition after it was moved. (Action Code: B)

Could not transition partition xxxx to correct mode

An error occurred trying to transition the specified partition to the correct mode. (Action Code: B)

Failed to remove data database for partition xxxx

An error occurred trying to remove the data database for the specified partition. (Action Code: B)

Failed to send move acknowledgment to PID xxxx

An error occurred trying to send the move acknowledgment to the specified process ID. (Action Code: B)

Failed to set up system database for partition xxxx

An error occurred trying to set up the system database for the specified partition. (Action Code: B)

Insufficient space on disk to change partition size to xxxx megs

An error occurred trying to set up the system database for the specified partition. (Action Code: B)

Insufficient space to add partition xxxx to diskNum xxxx

There is insufficient space to add the specified partition to the specified disk. (Action Code: B)

Invalid message type (xxxx)

An invalid message was received. (Action Code: B)

LANCONNECTS table access failure (rc = xxxx)

Unable to access record in the LANCONNECTS table. (Action Code: B)

LINK_DEF Table access failure (rc = xxxx)

Unable to access record in the LINK_DEF table. (Action Code: B)

No further move processing will be performed for partition xxxx

No further move processing will occur for the specified partition due to an error trying to determine the move completion status. (Action Code: B)

Port xxxx not found in PortTbl

The specified port was not found in the port table. (Action Code: B)

Service execution for “age -c” fails (rc = xxxx)

An error occurred trying to execute “age -c”. (Action Code: B)

cfgmgr socket interface not initialized

The cfgmgr socket interface is not initialized. (Action Code: B)

client_add fails for partition xxxx, IP yyyy, mistext (rc = xxxx)

An error occurred trying to add a text based LAN client. (Action Code: B)

client_add fails for partition xxxx, IP yyyy, miswindows (rc = xxxx)

An error occurred trying to add a windows based LAN client.
(Action Code: B)

client_delete fails for IP yyyy, mistext (rc = xxxx)

An error occurred trying to delete a text based LAN client. (Action Code: B)

client_delete fails for IP yyyy, miswindows (rc = xxxx)

An error occurred trying to delete a windows based LAN client.
(Action Code: B)

could not de-register yyyy shared memory segment with MAPA (rc = xxxx)

An error occurred trying to de-register a shared memory segment with MAPA. (Action Code: B)

could not register yyyy shared memory segment with MAPA (rc = xxxx)

An error occurred trying to register a shared memory segment with MAPA. (Action Code: B)

could no restart partition xxxx after mode change

An error occurred trying to restart the specified partition after a mode change. (Action Code: B)

could not stop partition xxxx to change modes

An error occurred trying to stop the specified partition so that a mode change could be performed. (Action Code: B)

partition xxxx must be assigned a disk to change modes

The partition must be assigned a disk before changing modem. (Action Code: AI)

partition ID xxxx out of range [1..xxxx]

The specified partition ID is out of range. (Action Code: B)

partition_delete fails for partition xxxx (rc = xxxx)

An error occurred trying to delete the specified partition. (Action Code: B)

received delete message for unknown partition "xxxx"

A delete message was received for an unknown partition. (Action Code: B)

request_service fails for program yyyy (rc = xxxx)

A request_service failed for the specified program. (Action Code: B)

CUST_INFO access failure (partition=xxxx; rc=xxxx)

Unable to access record in the CUST_INFO table. (Action Code: B)

Cannot start partition xxxx in SETUP mode

Cannot start a partition in SETUP mode. (Action Code: AI)

DBSTORAGE table access failure (rc = xxxx)

Unable to access record in the DBSTORAGE table. (Action Code: B)

DBSTORAGE table not initialized for partition xxxx

The DBSTORAGE table is not initialized for the specified partition.
(Action Code: B)

LINK_DEF table access failure (linkNum=xxxx; rc=xxxx)

Unable to access record in the LINK_DEF table. (Action Code: B)

Link number xxxx not found

The specified link number was not found. (Action Code: B)

Live type link required to start partition xxxx in product mode

You must have a live link to start a partition in product mode.
(Action Code: AI)

No more partitions using a live link may be started (max = xxxx)

The maximum number of live partitions has already been reached.
(Action Code: AI)

No subpool name defined for partition xxxx

There is no subpool name defined for the specified partition.
(Action Code: AI)

No subpool password defined for partition xxxx

There is no subpool password defined for the specified partition.
(Action Code: AI)

STOREPARMS table access failure (custID = xxxx, rc = xxxx)

Unable to access record in the STOREPARMS table. (Action Code: B)

Simulator type link required to start partition xxxx in training mode

You must have a simulator link to start a partition in training mode.
(Action Code: AI)

invalid partition mode (partition=xxxx; mode=xxxx)

The partition has an invalid mode. (Action Code: B)

no disk selected for partition xxxx

There is no disk selected for the specified partition. (Action Code: B)

no link selected for partition xxxx

There is no link selected for the specified partition. (Action Code: B)

partition number xxx out of range

The partition number is out of range. (Action Code: B)

Could not flush message buffer

An error occurred trying to flush the message buffer. (Action Code: B)

Could not make socket non-blocking

An error occurred trying to make the socket non-blocking. (Action Code: B)

Unrecognized message xxxx received from xxxx

An unrecognized message is received. (Action Code: B)

cfgmgr closing socket to cfgutil (cfgutil PID = xxxx)

An error occurred closing the socket to the cfgutil process. (Action Code: B)

completion acknowledgment fails (type = xxxx, sequence = xxxx)

An error occurred trying to send a completion acknowledgment.
(Action Code: B)

lost connection with client

The connection was lost with the client. (Action Code: B)

message acknowledgment fails (type = xxxx, sequence = xxxx)

An error occurred trying to send a message acknowledgment.
(Action Code: B)

socket read error

A socket read error occurred. (Action Code: B)

COMPORTS table access failure

Unable to access record in the COMPORTS table. (Action Code: B)

CUST_INFO table access failure (custID = xxxx; rc = xxxx)

Unable to access record in the CUST_INFO table. (Action Code: B)

Could not create ager signal file “yyyy”

An error occurred trying to create the ager signal file. (Action Code: B)

DBSTORAGE table access failure

Unable to access record in the DBSTORAGE table. (Action Code: B)

DISKS table access failure (diskNum = xxxx; rc = xxxx)

Unable to access record in the DISKS table. (Action Code: B)

Error xxxx deleting from DBSTORAGE table

The specified error occurred trying to delete a record from the DBSTORAGE table. (Action Code: B)

Error xxxx deleting record yyyy from LANCONNECTS table

The specified error occurred trying to delete a record from the LANCONNECTS table. (Action Code: B)

Error xxxx deleting record (key xxxx) from CUST_INFO table

The specified error occurred trying to delete a record from the CUST_INFO table. (Action Code: B)

Error xxxx deleting record (key xxxx) from CUST_OPTIONS table

The specified error occurred trying to delete a record from the CUST_OPTIONS table. (Action Code: B)

Error xxxx deleting record (key xxxx) from STOREPARMS table

The specified error occurred trying to delete a record from the STOREPARMS table. (Action Code: B)

Error xxxx deleting record (key xxxx) from WALLBOARDS table

The specified error occurred trying to delete a record from the WALLBOARDS table. (Action Code: B)

LANCONNECTS table access failure

Unable to access record in the LANCONNECTS table. (Action Code: B)

PRINTERS table access failure

Unable to access record in the PRINTERS table. (Action Code: B)

WALLBOARDS table access failure

Unable to access record in the WALLBOARDS table. (Action Code: B)

COMPORTS table access failure (rc = xxxx)

Unable to access record in the COMPORTS table. (Action Code: B)

CUST_INFO table access failure (custID = xxxx; rc = xxxx)

Unable to access record in the CUST_INFO table. (Action Code: B)

CUST_OPTIONS table access failure (custID = xxxx; rc = xxxx)

Unable to access record in the CUST_OPTIONS table. (Action Code: B)

Cannot initialize partition xxxx

Unable to initialize the specified partition. (Action Code: B)

Creation of partition xxxx fails (rc = xxxx)

Unable to create the specified partition. (Action Code: B)

DISKS table access failure (diskNum = xxxx; rc = xxxx)

Unable to access record in the DISKS table. (Action Code: B)

Failed to set partition limit for partition xxxx (rc = xxxx)

An error occurred trying to set the limits for the specified partition.
(Action Code: B)

LANCONNECTS table access failure (rc = xxxx)

Unable to access record in the LANCONNECTS table. (Action Code: B)

LINK_DEF table access failure (rc = xxxx)

Unable to access record in the LINK_DEF table. (Action Code: B)

client_add fails (yyyy, xxxx, mistext)

Unable to add a text based LAN client. (Action Code: B)

client_add fails (yyyy, xxxx, miswindows)

Unable to add a windows based LAN client. (Action Code: B)

get_partition_state fails for partition xxxx

Unable to determine the state of the specified partition. (Action Code: B)

Error occurred communicating with MAPA

Unable to report initialization to MAPA. (Action Code: B)

STDTbl entry not found

Unable to find the service ID entry in the service ID table. (Action Code: B)

Cannot start partition xxxx

Error trying to start the specified partition. (Action code: B)

Configuration problem for partition xxxx

There is a configuration problem with the specified partition.
(Action Code: B)

**Failed to retrieve CUST_INFO record for partition xxxx
(rc = xxxx)**

Error trying to retrieve a record from the CUST_INFO table for the
specified partition. (Action Code: B)

Failed to retrieve LINK_DEF record (xxxx) for partition xxxx (rc = xxxx)

Error trying to retrieve a record from the LINK_DEF table for the specified partition. (Action Code: B)

Unable to start partition xxxx

Error trying to start the specified partition. (Action Code: B)

Unable to stop partition xxxx

Error trying to stop the specified partition. (Action Code: B)

request_service fails for “yyyy” (rc = xxxx)

Request service failed for the specified service. (Action Code: B)

SID table size consistency error

There is an inconsistency in the size of the service ID table.
(Action Code: B)

lan clients table size consistency error

There is an inconsistency in the size of the lan clients table.
(Action Code: B)

link table size consistency error

There is an inconsistency in the size of the link table. (Action Code: B)

Caught SIGCHLD from death of unknown process (PID = xxxx)

The SIGCHLD signal was received from the death of an unknown process.
(Action Code: B)

Could not create ager signal file “yyyy”

Error trying to create the ager signal file. (Action Code: B)

Could not make directory “yyyy”

Error trying to create the specified directory. (Action Code: B)

More than xxxx wallboards defined on port xxxx

There are more than the specified number of wallboards defined on the port.
(Action Code: B)

Re-initialization response error occurred for link xxxx

A re-initialization response error occurred for the specified link.
(Action Code: B)

SIGTERM: process terminated

The SIGTERM signal was received. (Action Code: J)

Unable to connect to link xxxx

Error trying to connect to the specified link. (Action Code: B)

cfgdb: error xxxx reading yyyy table

An error occurred trying to read the specified table. (Action Code: B)

non-implemented error message class (xxxx)

An unrecognized error return value was received. (Action Code: B)

Unknown hard ID (xxxx) received on wallboard commands pipe

An unknown wallboard hard ID was received. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events that occur as part of normal operation.

caught SIGUSR1: updating internal state tables

Received the SIGUSR1 signal after a backup occurred indicating that the internal state tables will be updated. (Action Code: L)

caught SIGUSR2: reinitialization static language shared memory

CFGMGR received a signal to reload the static language shared memory segment. (Action Code: L)

Move of partition xxxx beginning

The move of the specified partition has started. (Action Code: J)

Move of partition xxxx failed

The move of the specified partition has failed. (Action Code: B)

Move of partition xxxx successful

The move of the specified partition was successful. (Action Code: J)

Fatal error messages

Fatal error messages are generated by CFGMGR in response to conditions which prevent the process from continuing normal execution. This section lists the error message.

Unable to communicate with MAPA

Error trying to communicate with MAPA while trying to (re)start programs. (Action Code: B)

USRIF messages

Introduction

This section contains the error messages generated by the USRIF subsystem of the CC MIS product. USRIF writes the messages to its 'Standard Error' device. The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

Warning messages

This section lists the warning messages that may be generated by the USRIF subsystem. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Too many help screens. Help will appear out of sync with current screen.

Help screens have nested too deeply (beyond MAX_STACK_TAGS-1). When this occurs, the additional levels are ignored. The visible effect of this is help text that does not match the screen where help is being sought. (Action Code: B)

No '=' found in keyboard description entry

Entry in <term>.KD file is improperly formatted. (Action Code: B)

No terminating '\ ' found for keyboard label

A key translation specification in the <term>.KD file contains only the name of the key. (Action Code: B)

Keystroke sequence missing

The sequence of characters sent from the keyboard for this key is missing from the <term>.KD file. (Action Code: B)

Logical function key definition is missing

The key translation sequence for a required key is missing. (Action Code: B)

Periodic function list is full

An attempt to add another function to the list of functions periodically activated while awaiting keyboard input has failed because the list is full. (Action Code: B)

Invalid window number

A request was made to redraw a non-existent window. (Action Code: B)

Window does not correspond to a menu

Request made to redraw a window that is not a menu. (Action Code: B)

Failed to determine spool pipe status

Was unable to determine status of the pipe serving the print spooler. (Action Code: B)

Bad ACDTERMCAP parameter: missing '#' for numeric parameter

The specification for a numeric parameter in the ACDTERMCAP file is missing a required number sign (#). (Action Code: B)

Bad ACDTERMCAP parameter: string parameter lacks '='

The specification for a string parameter in the ACDTERMCAP file is missing a required equal sign (=). (Action Code: B)

Bad ACDTERMCAP parameter: Illegal escape character

Only a character from the set Ee\l\rtbfs^\,;01234567 can be escaped using the backslash. (Action Code: B)

No '=' found in video attribute entry

The entry in the <term>.VA file is improperly formatted. (Action Code: B)

Invalid attribute name in video attribute file

Unknown attribute name specified in <term>.VA file. (Action Code: B)

Duplicate video attribute

Video specification has already been defined in <term>.VA file.

(Action Code: B)

Logical video attribute definition is missing

One of the video attributes was not defined for the selected terminal type.

(Action Code: B)

No '=' found in special character entry

The entry in the <term>.SC file is improperly formatted. (Action Code: B)

Logical character code is invalid

The internal character code is not within the range of 1 to 254.

(Action Code: B)

Physical character code is invalid

The external character code is not within the range of 1 to 254.

(Action Code: B)

Unable to open special character file

Either the <term>.SC file couldn't be located or its access rights prohibited read access. (Action Code: B)

Table form has not yet been created

Attempt to animate a table form that has not been created. (Action Code: B)

Invalid character following '^'

In <term>.VA file, character being control-shifted is not in the set of @, A-Z, a-z, [, \,], ^, or _.

(Action Code: B)

Invalid token

Token being converted is not an octal number. (Action Code: B)

Value of token exceeds 377 octal

The token's value as specified in the <term>.VA file exceeds 377 octal.

(Action Code: B)

Missing definition for video attribute

A definition for a video attribute is missing. (Action Code: AI)

Invalid monochrome attribute specification

An invalid monochrome attribute was specified. (Action Code: AI)

Missing foreground color specification

A foreground color specification is missing. (Action Code: AI)

Missing background color specification

A background color specification is missing. (Action Code: AI)

Invalid foreground color specification

An invalid foreground color was specified. (Action Code: AI)

Invalid background color specification

An invalid background color was specified. (Action Code: AI)

Fatal error messages

Fatal error messages are generated by USRIF in response to conditions that prevent the process from continuing normal execution. This section lists these error messages.

Cannot acquire memory from system

There exists an insufficient amount of system memory to create the key handling information tables. (Action Code: B)

Invalid logical key name in keyboard file

In initializing key translation specifications in the <term>.KD file, an unknown key name has been encountered. (Action Code: B)

Pathname of keyboard description file is unknown

No kF entry, usually in the form of kF=<term>.KD, was specified in the product termcap file. (Action Code: B)

Unable to open keyboard description file

Either the <term>.KD file could not be found or read access was not allowed. (Action Code: B)

Error reading keyboard description file

Though the <term>.KD file was found and read access was available, an error occurred while reading the file. (Action Code: B)

Unable to create error message virtual screen

Attempt to create the one-line error dialog window on the bottom of the screen was unsuccessful. (Action Code: B)

Keyboard description file is empty

The <term>.KD file contained no properly formatted key translation specifications. (Action Code: B)

Menu does not contain any menu items

Request was made to create a menu that has no items defined. (Action Code: B)

Unable to open ACD-MIS termcap file

The file defined by environment variable ACDTERMCAP could not be found or its access rights prohibited reading it. (Action Code: B)

Pathname of video attributes file is unknown

The aF entry in the ACDTERMCAP file was not specified. (Action Code: B)

Unable to open video attributes file

The aF entry in the ACDTERMCAP file was given incorrectly such that the video attributes file can not be found. (Action Code: B)

Error reading video attributes file

Though the <term>.VA file could be found and had read access rights available, an error occurred in reading the file. (Action Code: B)

Error reading special characters file

Though the <term>.SC file was located and allowed read access, an error occurred during reading it. (Action Code: B)

Could not set terminal into raw mode

Attempt to reset standard input parameters failed. (Action Code: B)

Non-contiguous CELL array

This error indicates that the DSP's memory allocation for c types char and byte are not equal. (Action Code: B)

Too many virtual screens

The number of defined virtual screens has reached its maximum number. (Action Code: B)

Too many windows

The number of defined windows has reached its maximum number. (Action Code: B)

Number of windows is inconsistent

The window counter indicates that at least one window slot should be available, but the window number array is full. (Action Code: B)

No entry found in ACDTERMCAP file for yyyy

The specified term setting is not valid, or is not supported. (Action Code: AI)

Memory allocation failure

The process was unable to allocate enough memory. (Action Code: B)

STSMGR messages

Introduction

This section contains the error messages generated by the STSMGR subsystem of the CC MIS product.

The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

Warning messages

This section lists the warning messages that may be generated by the STSMGR process. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Maximum number of ACD groups (nnn) exceeded

Initialization data has been received for more than the maximum number of ACD groups. “nnn” specifies the current maximum. (Action Code: O)

Maximum number of positions (nnn) exceeded

Initialization data has been received for more than the maximum number of agent positions. “nnn” specifies the current maximum. (Action Code: O)

Maximum number of supervisors (nnn) exceeded

Initialization data has been received for more than the maximum number of supervisor positions. “nnn” specifies the current maximum.
(Action Code: O)

Can't get Database Lock

STSMGR Manager was unable to acquire the database lock.
(Action Code: L)

Database is full. No further records are being saved.

The database has reached its maximum size, and can no longer save data.
(Action Code: C)

Database open error: “yyyy” : yyyy

The STSMGR process was unable to open the ACDDN statistics interval file. File name “yyyy” with database error yyyy. (Action Code: B)

Errors dumping to “yyyy” : xxxx OK, XXXX BAD

When dumping yyyy, STSMGR was able to write xxxx records, and was unable to write XXXX records. (Action Code: B)

Request for AGE -c failed

STSMGR was unable to call age -c. (Action Code: B)

Request for aging failed

The request for database aging failed. (Action Code: B)

Unable to lock data database for writing

STSMGR was unable to establish a lock on the data database to enable writing. (Action Code: B)

Unable to unlock data database

STSMGR was unable to unlock the data database. (Action Code: B)

VFG xxxx is used in xxxx ACD groups

The VFG entry xxxx is used in more than one ACD groups.
(Action Code: B)

Connection to link has been terminated

The DMSLINK process that STSMGR was connected to died.
(Action Code: L)

Invalid command line argument - ignored

An invalid command line argument was specified. (Action Code: B)

Request for aging failed

The STSMGR request for aging failed. (Action Code: B)

*****Call duration less than zero**

The call duration time was less than zero. (Action Code:)

Error [xxxx] moving agent [xxxx] into assigned APR subgroup [xxxx]

An error occurred while trying to move an agent into their assigned APR subgroup. (Action Code: I)

Error [xxxx] returning position [xxxx] to prior subgroup [xxxx]

An error occurred trying to return position xxxx to its prior subgroup xxxx. (Action Code: I)

Error [xxxx] sending request assign agent [xxxx] to assigned APR subgroup [xxxx]

An error occurred while attempting to request a move agent. (Action Code: I)

Error [xxxx] sending request to return position [xxxx] to prior subgroup [xxxx]

An error occurred. (Action Code: I)

Sample duration [xxxx seconds] exceeds sample interval

The calculated duration of a real-time statistics sample exceeds the configured sample interval of 2 seconds (possibly due to a performance bottleneck on the server). (Action Code: R)

Error reading partition options

An error occurred while trying to read the partition options. (Action Code: B)

ACD stat duration less than zero

The ACD stat duration is less than zero. (Action Code: R)

DN Call duration less than zero

A DN call duration was less than zero. (Action Code: R)

Invalid APR subgroup [xxxx] configured for agent [xxxx]

An invalid APR subgroup is configured for agent xxxx. (Action Code: AC)

Fatal error messages

Fatal error messages are generated by STSMGR in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Can't get database storage limit

STSMGR was unable to determine the database storage limit.

(Action Code: B)

Subpool yyyy on link xxxx does not exist

The subpool yyyy on link xxxx does not exist. (Action Code: AI)

STOREPARMS table access failed (rc = xxxx)

STSMGR encountered an error while trying to access the storage parameters. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events which occur as part of normal operation.

Transitioning to Daylight Savings Time

The STSMGR process has switched to Daylight Savings Time.

(Action Code: J)

Transitioning to Standard Time

The STSMGR process has switched to standard time. (Action Code: J)

AGE request has been issued

An AGE request has been issued. (Action Code: J)

AGE -c request has been issued

An AGE -c request has been issued. (Action Code: J)

Closing ACDDN statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Closing LOB statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Closing Walkaway statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Database is no longer full. Records will now be saved

The Database now has space to add new records. (Action Code: J)

Opening ACDDN statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Opening LOB statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Opening Walkaway statistics interval file

Occurs when the storage parameters are updated. (Action Code: J)

Storing LOB data by group

Occurs when data is changed from store by agent to store by group.
(Action Code: J)

CFGUTIL messages

Introduction

This section contains the error messages generated by the CFGUTIL subsystem of the CC MIS product. The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

Warning messages

This section lists the warning messages that may be generated by the CFGUTIL process. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

CUST_OPTS table access failure (custID=xx; rc=xx)

Error reading CUST_OPTS database table. (Action Code: B)

DBSTORAGE table access failure (rc = xxxx)

Error reading DBSTORAGE database table. (Action Code: B)

DBSTORAGE table not initialized for partition xx

DBSTORAGE database table not initialized properly for this partition.
(Action Code: B)

Error reading configuration data base

An error occurred trying to read from the configuration database.
(Action Code: B)

Error creating SWXIF socket

Error trying to communicate with the DMSLINK process.
(Action Code: B)

Cannot decrease size limit below disk required in storage calc (xxxx mb)

Size limit must be greater than or equal to disk required in Storage Calculator. (Action Code: AI)

Not enough space available

Not enough room on the disk for the partition. (Action Code: AI)

Error getting partition runstate

Error determining the state of the partition. (Action Code: B)

Error deleting LANCONNECTS entry for yyyy

Error deleting database record in LANCONNECTS table. (Action Code: B)

Error updating LANCONNECTS entry for yyyy

Error updating database record in LANCONNECTS table. (Action Code: B)

Error deleting printer entry

An error occurred while trying to delete the printer defined on the LAN client. (Action Code: B)

Error from sigaction() while setting SIG_IGN of SIGPIPE

Error trying to set ignore option on SIGPIPE signal. (Action Code: B)

Error locking lock file

An error occurred trying to open the lock file. (Action Code: B)

Error opening lock file

An error occurred trying to open the lock file. (Action Code: B)

Error reading ptn_moving file

An error occurred trying to determine if a partition is moving. (Action Code: B)

Error updating configuration database

An error occurred trying to update the configuration database.
(Action Code: B)

Error adding partition

Error adding a partition to the system. (Action Code: B)

Error changing mode of partition

Error changing the mode of a partition. (Action Code: B)

Operation failed

An error occurred while trying to update the switch links. (Action Code: B)

Unable to read customer options file

An error occurred trying to read the customer options file. (Action Code: B)

Unable to open yyyy file

An error occurred trying to open the specified file. (Action Code: B)

Unable to read yyyy file

An error occurred trying to read from the specified file. (Action Code: B)

Error changing runstate for partition xxxx

An error occurred changing the state of the specified partition.
(Action Code: B)

Error disabling all changes

An error occurred trying to disable changes to all partitions.
(Action Code: B)

Error enabling all changes

An error occurred trying to enable changes to all partitions.
(Action Code: B)

Error getting runstate for partition xx

An error occurred determining the state of the specified partition.

(Action Code: B)

Unable to get operation result from CfgMgr

Unsuccessful in receiving a response from the Configuration Manager.

(Action Code: B)

Error getting partition runstate

An error occurred trying to determine the state of a partition.

(Action Code: B)

Error starting partition(s)

An error occurred trying to start the partition. (Action Code: B)

Error stopping partition(s)

An error occurred trying to stop the partition. (Action Code: B)

Operation successful

Operation requested was performed successfully. (Action Code: J)

Operation failed

Operation requested failed. (Action Code: B)

Changes disabled on a partition basis

Changes are disabled for a particular partition. (Action Code: J)

Partitions in SETUP mode may not be started

Trying to start a partition in SETUP mode failed. (Action Code: AI)

A SIMULATOR type link is required for this operation

Operation requires a simulator link. (Action Code: AI)

A LIVE type link is required for this operation

Operation requires a live link. (Action Code: AI)

Database access failure occurred

Error accessing database. (Action Code: B)

An internal system error occurred

Internal system error. (Action Code: B)

Partition ID out of valid range

An operation was requested for a partition ID that is out of range.
(Action Code: B)

No disk selected for this partition's data

The partition has no disk defined. (Action Code: AI)

Database not properly initialized

The database is not properly initialized. (Action Code: B)

A subpool name is required

A subpool name is required for the requested operation to be performed successfully. (Action Code: AI)

A subpool password is required

A subpool password is required for the requested operation to be performed successfully. (Action Code: AI)

The maximum number of live partitions are already running

Attempting to start a partition when the maximum number of live partitions are already running. (Action Code: B)

Cannot start a partition that is not installed

Attempting to start a partition that is not properly configured in the database.
(Action Code: B)

Could not stop this running partition

Error trying to stop partition. (Action Code: B)

MAPA could not start this partition

MAPA encountered an error trying to start specified partition.

(Action Code: B)

Fatal error messages

Fatal error messages are generated by MPSA in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

List error detected

Internal storage error detected. (Action Code: B)

Invalid arguments passed

Invalid arguments were passed to the CFGUTIL program. (Action Code: B)

Error calculating required storage

An error occurred while trying to calculate the required storage.

Action Code: B)

Error changing storage parameters

An error occurred trying to update the configuration database.

(Action Code: B)

DMS Simulator messages

Introduction

This section contains the error messages generated by the DMS Simulator. Note that these messages only appear when the CC MIS system is in Training mode.

The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

Warning messages

This section lists the warning messages that may be generated by the DMS Simulator. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

call_q->length = xxxx

Attempted to read first call in an empty queue. (Action Code: L)

Directory number xxxxxxxxxxx not found - call discarded

Called number could not be found. (Action Code: L)

Invalid position

No matching position ID found for the reassign position request. (Action Code: L)

RO rejected by simulator

Invalid RO received by DMSSIM. (Action Code: B)

RO rejected by DSP

This error message is sent any time the DSP rejects an RO. (Action Code: B)

Unable to decode NOP message - HEX dump follows

Unable to decode an incoming OPDU. (Action Code: B)

Lost synchronization on input data stream

Lost synchronization while reading OPDUs in input data stream.

(Action Code: B)

List Error: Appending NULL data

Attempt made to append null data to doubly linked list. (Action Code: B)

List Error: Appending linked data

Attempt made to append previously linked data to doubly linked list.

(Action Code: B)

List Error: Inserting NULL data

Attempt made to insert null data into doubly linked list. (Action Code: B)

List Error: Inserting linked data

Attempt made to insert previously linked data into doubly linked list.

(Action Code: B)

List Error: Deleting unlinked data

Attempt made to delete previously linked data from doubly linked list.

(Action Code: B)

Illegal message type xx

DMSSIM received an unrecognized message. (Action Code: B)

Invalid Argument Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

OPDU: Invalid Argument Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

Operation Sequence Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

OPDU: Operation Sequence Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

Application Resource Shortage Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

OPDU: Application Resource Shortage Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

System Problem Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

OPDU: System Problem Error: [xx]

An OPDU was received of this type with code [xx]. (Action Code: B)

Command Error: Call Profile <yyyy> not found

Command Error: Invalid Call Queue <xxxx>

Command Error: Invalid Call Rate <xxxx>

Command Error: Invalid Group ACDDN <yyyy>

Command Error: Invalid VFG index <xxxx>

Command Error: Invalid number of agents <xxxx>

Command Error: Position ID <xxxx> out of range

Command Error: Unknown Position ID <xxxx>

Command Error: Unknown Position event <xxxx>

Command Error Walk/LOB/Agent code <xxxx> out of range

Error on application connection socket <xxxx>

Illegal Command message type <xxxx>

Illegal Control message type <xxxx>

Illegal Loadmgmt message type <xxxx>

Illegal Response message type <xxxx>

Illegal message type <xxxx>

LoadMGMT Error: Cannot reassign ACDDN <yyyy> to new subpool

LoadMGMT Error: Invalid ACDDN <yyyy>

LoadMGMT Error: Invalid ACDDN Line Priority <xxxx>

LoadMGMT Error: Invalid ACDDN Trunk Priority <xxxx>

LoadMGMT Error: Invalid ACDDN priority <xxxx>

LoadMGMT Error: Invalid Active State <xxxx>

LoadMGMT Error: Invalid Agent ID <xxxx>

LoadMGMT Error: Invalid Agent ID range <xxxx> to <xxxx>

LoadMGMT Error: Invalid Audio Index <xxxx>

LoadMGMT Error: CIF Route <xxxx>

LoadMGMT Error: Call Transfer Queue Size <xxxx>

LoadMGMT Error: FIAudio group <xxxx>

LoadMGMT Error: FOAudio group <xxxx>

LoadMGMT Error: Invalid Feature

CHG_ACTIVATE

CHG_DWRPTIME

CHG_FIAUDIO_GROUP

CHG_FOAUDIO_GROUP

CHG_MSQSTYPE

CHG_ORGANN

CHG_TMDTHRTE

CHG_TMDTHRTE_TIME

LoadMGMT Error: Invalid Group ACDDN <xxxx>

LoadMGMT Error: Invalid Number of Overflow Groups <xxxx>

LoadMGMT Error: Invalid Line of Business Code <xxxx>

LoadMGMT Error: Invalid MSQS Threshold type <xxxx>

LoadMGMT Error: Invalid MSQS Threshold Value <xxxx>

LoadMGMT Error: Invalid Threshold Sequence

LoadMGMT Error: Invalid Maximum CQ Size <xxxx>

LoadMGMT Error: Invalid Maximum Logical Queue Size <xxxx>

LoadMGMT Error: Invalid Maximum Queue Threshold <xxxx>

LoadMGMT Error: Invalid Maximum Wait <xxxx>

LoadMGMT Error: Invalid NSAudio group <xxxx>

LoadMGMT Error: Invalid Nite Service Route <xxxx>

LoadMGMT Error: Invalid ORGANN value <xxxx>

LoadMGMT Error: Invalid Overflow Group ACDDN <yyyy>

LoadMGMT Error: Invalid Overflow Start value <xxxx>

LoadMGMT Error: Invalid Overflow Type value <xxxx>

LoadMGMT Error: Invalid Preference Weight Factor <xxxx>

LoadMGMT Error: Invalid Priority Promotion time <xxxx>

LoadMGMT Error: Invalid RI Factor <xxxx>

LoadMGMT Error: Invalid Recorded Announcement <xxxx>

LoadMGMT Error: Invalid Service value <xxxx>

LoadMGMT Error: Invalid Subpool number <xxxx>

LoadMGMT Error: Invalid Threshold Route <xxxx>

**LoadMGMT Error: Invalid Time Delay Overflow Threshold value
<xxxx>**

LoadMGMT Error: Invalid Time Delay Threshold Route <xxxx>

LoadMGMT Error: Invalid Time Delay Threshold Time <xxxx>

LoadMGMT Error: Invalid Variable Wrap-up Time <xxxx>

LoadMGMT Error: Invalid number of display digits <xxxx>

LoadMGMT Error: Invalid position ID <xxxx>

LoadMGMT Error: Invalid supervisor ID <xxxx>

LoadMGMT Error: Invalid target ACDDN <yyyy>

Socket <xxxx> Information block not found

Illegal console message type <xx>

Instance <yyyy> is invalid or out of range [1.999]

Unrecognized option <yyyy> in command line

OPDU: Application Resource Shortage Error <xxxx>

OPDU: Invalid Argument Error <xxxx>

OPDU: Operation Sequence Error <xxxx>

OPDU: System Problem Error <xxxx>

Illegal Command message type <xxxx> received from dmssim

Illegal Control message type <xxxx> received from dmssim

Illegal Error message <xxxx> received from dmssim

Illegal Loadmgmt message type <xxxx> received from dmssim

Illegal Response message type <xxxx> received from dmssim

Illegal message type <xxxx> received from dmssim

Unrecognized option <yyyy> in command line

MSG Error; Already in use

MSG Error: Bad Profile

MSG Error: Bad Value

MSG Error: Exec, Can not run new process

MSG Error: Fork, Can not run new process

MSG Error: Transfer failed

MSG Error: Unknown Type

-m megs must be in the range 1 to 100

-p port must be either 0 or 1

-u cpu must be in the range 2 to 5

Application Resource Shortage Error; xxxx

Invalid Argument Error: xxxx

Lost synchronization on output data stream
Operation Sequence Error: xxxx
RO rejected by sim
RO rejected by simtest, kind <xxxx> code <xxxx>
System Problem Error: xxxx
Unable to decode NOP message - Hex dump follows
Unrecognized option <yyyy> in command line

Fatal error messages

Fatal error messages are generated by the DMS Simulator in response to conditions which prevent the process from continuing normal execution. This section lists the error message.

Unrecognized option <yyyy> in command line

An illegal command option was given to the program. (Action Code: B)

WINSERVER messages

Introduction

This section contains error messages generated by the Windows Server Process of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

This section lists only those messages that are unique to the Windows Server Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by WINSERVER. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Message checksum is invalid

A message was received with an invalid checksum. No action is required unless a large number of these errors are generated. In this case, the quality of the serial connections should be increased. (Action Code: L, Y)

Message length field is invalid

A message was received with a corrupted length field. No action is required unless a large number of these errors are generated. In this case, the quality of the serial connections should be increased. (Action Code: L, Y)

Received packet is too long

A packet was received that was greater than 4096 bytes in length. If the error occurs very infrequently, then it could be due to transmission errors, otherwise it indicates a design error. (Action Code: L)

Acknowledgment timeout - session terminated

An acknowledgment for a transmitted message has not been received within the acknowledgment timeout period. The Windows Server process is assuming that the link has been disconnected or the client process has terminated and is terminating the current session. This log indicates that the system is automatically logging a supervisor off. (Action Code: Y)

Poll timeout - session terminated

An acknowledgment for a periodic polling message has not been received within the poll timeout period. The Windows Server process is assuming that the link has been disconnected or the client process has terminated and is terminating the current session. This log indicates that the system is automatically logging a supervisor off. (Action Code: Y)

Unable to create print spooler

A print spooler could not be created to support the addition of a Windows-based local printer to the system. Previous error logs should provide additional information on the cause of the error. (Action Code: L, B)

Unable to delete print spooler

The print spooler associated with a Windows-based local printer could not be deleted from the system. Previous error logs should provide additional information on the cause of the error. (Action Code: L, B)

Unable to start printer creation request

A request to start the creation of a Windows-based local printer has failed. This error indicates a corrupt system or a software design error. (Action Code: B)

Unable to start printer deletion request

A request to start the deletion of a Windows-based local printer has failed. This error indicates a corrupt system or a software design error. (Action Code: B)

Invalid file type found in preview file

When the supervisor's preview report was opened for viewing, an invalid file type was found. This may indicate a corrupted file on disk. The next time this supervisor generates a preview report, the problem should disappear. (Action Code: B)

Invalid packet type [xx] received

A packet was received that contained an invalid packet type, where "xx" is the hexadecimal packet type code in error. If the error occurs very infrequently, then it could be due to transmission errors, otherwise it indicates that the version of the client software is incompatible with the host software. (Action Code: Y, Z)

Database read request for unknown table: xx

The Windows Server process received a database read request for a table that it does not recognize. This probably indicates that the client software version is newer than the host software version. (Action Code: Z, B)

Database delete request for unknown table: xx

The Windows Server process received a database delete request for a table that it does not recognize. This probably indicates that the client software version is newer than the host software version. (Action Code: Z, B)

Database write request for unknown table: xx

The Windows Server process received a database write request for a table that it does not recognize. This probably indicates that the client software version is newer than the host software version. (Action Code: Z, B)

Unrecognized message (0xnnnn) received

A message was received that is unrecognized. "nnnn" gives the hexadecimal message type code. This probably indicates that the client software version is newer than the host software version. (Action Code: Z, B)

Invalid file ID [0xnxxxx] in WIN_XFER_RQST

A request to transfer a file to the PC has failed because the ID of the requested file is unknown. This probably indicates that the client software version is newer than the host software version. (Action Code: Z, B)

Unable to send command to modem

WINSERVER was unable to send a command to the modem.
(Action Code: D)

Unable to obtain SYSTEM database lock

The process was unable to obtain a system database lock which is needed to update the database. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events which occur as part of normal operation.

yyyy has logged in

This message is logged whenever a supervisor logs in to the CC MIS system. The yyyy is replaced by the supervisor name. (Action Code: J)

yyyy has logged out

This message is logged whenever a supervisor logs out of the CC MIS system. The yyyy is replaced by the supervisor name. (Action Code: J)

Fatal messages

Fatal error messages are generated by WINSERV in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Invalid arguments passed

Invalid parameters were specified on the command line that was used to start the WINSERV process. (Action Code: B)

AGE messages

Introduction

This section contains error messages generated by the Automatic Historical Data Compaction Process of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

This section lists only those messages which are unique to the Automatic Historical Compaction Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by AGE. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Could not remove ager signal file “yyyy”

AGE was unable to remove ager signal file. (Action Code: B)

Could not reduce database size

AGE was unable to remove data to make more space. (Action Code: C)

Can't read storage limits for yyyy yyyy

An error was encountered when reading the config db. (Action Code: B)

Could not create ager signal file “yyyy”

AGE was unable to create the ager signal file. (Action Code: B)

Unable to lock HDB_AGED database

Cannot lock the AGED portion of the database. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events which occur as part of normal operation.

Compacting LOB data in: yyyy

This message is logged whenever the storage options are changed from store by agent, to store by group. (Action Code: J)

Compacting LOB interval data in: yyyy

This message is logged when the interval data is compacted at midnight. (Action Code: J)

The following log messages are generated when AGE has been updated to new storage parameters. (Action Code: J)

ACDDN statistics disabled: Removing data files.

ACDDN statistics enabled.

LOB statistics disabled: Removing data files.

LOB statistics enabled: Storing by Agent.

LOB statistics enabled: Storing by Group.

LOB statistics enabled: no storing by group.

Walkaway statistics disabled: Removing data files.

Walkaway statistics enabled.

Removing file yyyy

A file was removed due to day limits or database size limits. (Action Code: J)

Fatal messages

Fatal error messages are generated by AGE in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Failure to initialize AGE

AGE was unable to obtain a lock on the database. (Action Code: B)

STOREPARMS table access failed (rc = xxxx)

Errors were encountered when reading the config database.
(Action Code: B)

BAR messages

Introduction

This section contains error messages generated by the Backup and Restore (BAR) Process of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

This section lists only those messages which are unique to the Backup and Restore Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by BAR. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Nightly backup failed: yyyy

This message is logged whenever a restore is started through the maintenance Restore screen. (Action Code: J)

Nightly backup failed

This message is logged whenever the nightly backup fails after it has been successfully initialized. (Action Code: W)

Ad hoc backup failed

This message is logged whenever an ad hoc backup fails. (Action Code: W)

Restore Failed

This message is logged whenever a restore fails. (Action Code: AA)

Error starting mis_nite

An error occurred invoking the nightly cleanup script. (Action Code: B)

Get service status error: nn

A request to MAPA for service status information returned an error. The error code is specified by the “nn” field. (Action Code: B)

Service request for yyyy failed. Return value nn

A request to MAPA to start the program “yyyy” failed. The return value is specified by the “nn” field. (Action Code: B)

Terminating current nightly backup (timed out)

The nightly backup timed out and was terminated. (Action Code: AF)

Terminating current ad hoc backup (timed out)

An ad hoc backup timed out and was terminated. (Action Code: AF)

Terminating current restore (timed out)

A restore timed out and was terminated. (Action Code: AG)

Error creating utility element

An error occurred initializing communication with a BARUTIL process. (Action Code: B)

Error finding utility element

An error occurred communicating with a BARUTIL process. (Action Code: B)

Received message from unregistered utility

An error occurred communicating with a BARUTIL process. (Action Code: B)

Received unsolicited reply

An error occurred communicating with the BARMGR process. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events which occur as part of normal operation.

Ad hoc backup beginning

This message is logged whenever an ad hoc backup is started through the maintenance Backup screen. (Action Code: J)

Ad hoc backup completed

This message is logged whenever an ad hoc backup is completed. (Action Code: J)

Nightly backup beginning

This message is logged whenever the nightly automatic backup is started. (Action Code: J)

Nightly backup completed

This message is logged whenever the nightly automatic backup is completed. (Action Code: J)

Restore beginning

This message is logged whenever a restore is started through the maintenance Restore screen. (Action Code: J)

Restore completed

This message is logged whenever a restore is completed. (Action Code: J)

Import beginning

This message is logged whenever an import is started through the maintenance Import screen. (Action Code: J)

Import complete

This message is logged whenever an import completes. (Action Code: J)

Fatal error messages

Fatal error messages are generated by the BAR process in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Error initializing utility list

An error occurred initializing an internal list. (Action Code: B)

Bad message from barmgr

An error occurred communicating with the BARMGR process.
(Action Code: B)

WALLBOARD messages

Introduction

This section contains error messages generated by the Wallboard Process of the CC MIS product. The Wallboard Process writes the messages to their 'Standard Error' device. The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

This section lists only those messages which are unique to the Wallboard Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Fatal error messages

Fatal error messages are generated by a Wallboard process in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Invalid baud rate

An invalid baud rate was specified on the command line. This error message is only possible in the debugging version of the software. (Action Code: B)

invalid arguments passed

Invalid parameters were specified on the command line that was used to start the wallboard process. (Action Code: B)

MAINT messages

Introduction

This section contains error messages generated by the Maintenance process of the CC MIS product. The Maintenance process writes the messages to their 'Standard Error' device. The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

This section lists only those messages which are unique to the Maintenance Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by Maint. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Bad return code from cfg_db_next_link_def: xxxx

A link is tagged as having trace file, yet it cannot be found. (Action Code: B)

Partition outside range 0..xxxx

A partition was detected that exceeds the number of current partitions. (Action Code: B)

Error closing index file

Maint was unable to close the log index file. (Action Code: B)

Error removing index file

Maint was unable to remove and initialize the log index file.
(Action Code: B)

Unknown logger command: xxxx (data xxxx)

An unknown command was sent to Maint log controller.
(Action Code: B)

Write to system log file returned an error xxxx times yesterday

The Maint process writes to the system log yesterday, returned errors xxxx times. (Action Code: L)

Wrote to system log file xxxx times yesterday without a lock

The Maint process wrote to the system log file xxxx times yesterday without obtaining a lock. (Action Code: L)

Fragmented log record - file: yyyy

The log file size is not a multiple of the error message size, the file is damaged. (Action Code: B)

Error reading next record offset - file: yyyy

There was an error reading the next record in the log file. (Action Code: B)

Error reading current day offset - file: yyyy

There was an error reading the offset of the start of the current day in the log file. (Action Code: B)

Invalid next record offset - xxxx

The next record in the log file is located at an invalid offset.
(Action Code: B)

Invalid current day offset - xxxx

The current day offset read from the log file is invalid. (Action Code: B)

Invalid date in yyyy

And invalid date was encountered. (Action Code: B)

Informational messages

The following messages do not actually indicate an error condition but are used as notification of significant events which occur as part of normal operation.

Processed xxxx dynamic debug messages

Maint processed xxxx dynamic debug messages. (Action Code: J)

Stopped logging dynamic debug messages

Maint stopped logging dynamic debug messages. (Action Code: J)

Fatal error messages

Fatal error messages are generated by a Maint process in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Invalid Group DN filter: yyyy

An invalid group DN filter was specified on the command line.
(Action Code: B)

Invalid Position ID filter: yyyy

An invalid position ID filter was specified on the command line.
(Action Code: B)

Invalid Agent ID filter: yyyy

An invalid agent ID filter was specified on the command line.
(Action Code: B)

Unknown Option: yyyy

An unknown option was specified on the command line. (Action Code: B)

An output file must be specified

An output file must be specified. (Action Code: B)

Position, agent, and group filtering are mutually exclusive

Only one type of filtering may be specified. (Action Code: B)

Size of translated file exceeds pre-determined size

The size of the link trace file has exceeded the maximum pre-determined size. (Action Code: B)

Invalid option

An invalid option was specified on the command line to the dynamic debugging module. (Action Code: B)

Missing argument

The required number of arguments were not found in the command line of the dynamic debugging module. (Action Code: B)

Too many arguments

Too many arguments were sent to the dynamic debugging module. (Action Code: B)

Unknown argument: yyyy

An invalid argument was sent to the dynamic debugging module. (Action Code: B)

System Run State must be specified

The system run state must be sent to the dynamic debugging module. (Action Code: B)

Missing error pipe argument (-e)

The command line to the system log controller did not include the error pipe specification. (Action Code: B)

Missing log command pipe argument (-c)

The command line to the system log controller did not include the log command pipe specification. (Action Code: B)

Missing log index file argument (-i)

The command line to the system log controller did not include the log index argument. (Action Code: B)

Missing log file argument (-l)

The command line to the system log controller did not include the log file argument. (Action Code: B)

File stat error - file: yyyy

Maint was unable to determine the file size of the indicated file. (Action Code: B)

Fatal error from get_syslog_info: xxxx

Maint system log received a fatal error from get_syslog_info. (Action Code: B)

Bad return code from get_syslog_info: xxxx

A bad return code was received from get_syslog_info. (Action Code: B)

Parent process has become "init"

The parent process has been restarted. (Action Code: B)

Invalid argument - yyyy

An invalid argument was passwd to cfg_if. (Action Code: B)

Invalid option

An invalid was passwd to cfg_if. (Action Code: B)

List error detected

An element in a list was not found. (Action Code: B)

SCHEDULER messages

Introduction

This section contains error messages generated by the SCHEDULER process of the CC MIS product. The Maintenance process writes the messages to their 'Standard Error' device. The error messages may contain [XX] and/or 'YYYY', which denote any numeric and/or string, respectively.

This section lists only those messages that are unique to the SCHEDULER Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by Scheduler. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

No response from CCLINK

Scheduler timed out trying to run a change order. (Action Code: R)

Fatal error messages

Fatal error messages are generated by the Scheduler process in response to conditions which prevent the process from continuing normal execution. This section lists these error messages.

Pipe stat failure - pipe: yyyy

Scheduler was unable to determine the status of the pipe. (Action Code: R)

DDBSERV messages

Introduction

This section contains error messages generated by the Definitions Database Server (DDBSERV) Process of the CC MIS product.

Note: The CC MIS product runs on a Down Stream Processor, therefore the error messages do not appear in the switch log.

This section lists only those messages that are unique to the Definitions Database Server Process. Messages listed in “Standard error messages” on page 456 may also be generated by this process.

Warning messages

This section lists the warning messages that may be generated by DDBSERV. These messages usually indicate an unusual condition that can be appropriately handled by the process, and which does not prevent the process from continuing execution.

Current database changed during linear pass

While enumerating the records in a particular database table, the database server detected a change in the current table. The enumeration function is aborted. (Action Code: B)

Database delete failed — table: xxxxx, key: yyyyy

The database server was unable to delete the record whose key value is “yyyyy” from database table “xxxxx”. (Action Code: B)

Database open error - database: xxxxx

The database server was unable to open the database file specified by “xxxxx”. (Action Code: B)

Database write access denied - database: xxxxx

The database server attempted to perform a write operation on the read-only database file specified in “xxxxx”. (Action Code: B)

Duplicate entry in dblimits file on line: xx

A duplicate record limit entry was found on line “xx” in the database limits file. (Action Code: B)

Invalid class specification in dblimits file on line: xx

A record limit specification for an invalid record class was found on line “xx” in the database limits file. (Action Code: B)

Invalid limit value in dblimits file on line: xx

An invalid record limit value was found on line “xx” in the database limits file. (Action Code: B)

Invalid record name - name: xxxxx

A database operation was attempted on a record name that is unknown to the database server. The name of this record is given in the “xxxxx” field. (Action Code: B)

Invalid table name - name: xxxxx

A database operation was attempted on a table name that is unknown to the database server. The name of this table is given in the “xxxxx” field. (Action Code: B)

Invalid table name in dblimits file on line: xx

A limit specification for an unknown database table was found on line “xx” of the database limits file. (Action Code: B)

Missing field in dblimits file on line: xx

An incomplete limit specification was found on line “xx” of the database limits file. (Action Code: B)

Too many languages selected

The database server found that there were more than three languages enabled on the system. The excess languages have been automatically disabled. (Action Code: B)

Unable to lock definitions database: xxxxx

The database server was unable to get an exclusive lock on the definitions database for the reason indicated in the “xxxxx” field. (Action Code: B)

Unrecognized database command received - type: xx

The database server received an invalid message type from a client program. The invalid message type is given in the “xx” field. (Action Code: B)

Fatal error messages

Fatal error messages are generated by the Definitions Database Server process in response to conditions that prevent the process from continuing normal execution. This section lists these error messages.

No Standard/Custom designation specified for table xx

The database schema does not indicate either a standard or a custom component in the database for the table specified by “xx”. (Action Code: B)

Unable to determine current language selections

The database server failed to determine which languages are enabled in the system. (Action Code: A)

Unable to determine supported languages

The database server failed to determine what languages are supported on the system. (Action Code: A)

Appendix F

Historical database

This appendix describes the database requirements for different entities within the historical database. You can use the values in Table 59 to determine the database storage requirements for the historical database.

Table 59: Historical database tables (Part 1 of 2)

Table	# of bytes	Record key
i_ovrflow	168	source group, destination group, day, interval
i_group	776	destination group, day, interval
i_agent	164	agent ID, supervisor ID, destination group, day, interval
i_lob	32	destination group, LOB code, day, interval, agent, subgroup
i_acddn	120	source ACD-DN, source group, day, interval
i_WALK	24	source group, day, interval, walk code
d_ovrflw w_ovrflw m_ovrflw	160	source group, destination group, day (or week or month)
d_group w_group m_group	768	destination group, day (or week or month)

Table 59: Historical database tables (Part 2 of 2)

Table	# of bytes	Record key
d_agent	164	agent ID, supervisor ID, destination group, day (or week or month)
w_agent m_agent	164	agent ID, supervisor ID, destination group, week (or month)
d_lob w_lob m_lob	28	destination group, LOB code, interval, agent, subgroup
d_acddn w_acddn m_acddn	120	source ACD-DN, source group, day (or week or month)
d_WALK w_WALK m_WALK	24	source group, day (or week or month), walk code
l_agent	16	agent ID, event (login, logout, walkaway, return from walkaway), day, time

A record is stored in the database for each unique key as determined from Table 59 on page 561. For example, if an agent is moved to another supervisor within an interval, two records exist for that agent ID within the interval because the two supervisor IDs cause two distinct keys (with all other portions of the key being identical).

A record only exists if there is data associated with the key. For example, if no calls are processed in a particular group within an interval, then no i_acddn record is stored in the database for that group in that interval. This means that during periods in which there is no switch activity or the link is down, no records are stored in the database. Reports generated do not contain data for this time period.

The database is preallocated using the database Storage Calculator. It is allocated with enough space to handle the storage parameters specified. Additionally, the database is compressed to maximize storage potential. The average compression ratio of 54% is reflected in Storage Calculator values.

The overhead for a boot disk is 350 MB. The overhead for each partition is 50 MB.

The database Storage Calculator preallocates disk storage for historical data based on parameters supplied in the Storage Calculator screen. The values in Table 60 are determined and are referenced for computing disk storage requirements.

Table 60: Historical database values (Part 1 of 2)

Value	Description
ACD_GROUPS	Number of ACD groups to store
SDNS	Number of primary and supplementary DNS to store
POSITIONS	Number of active positions
AGENTS	Number of agent IDs
AGENTS_EVENTS	Number of agent events (logon, logoff, walkaway) per day
AVG_LOBS_GROUP	Average number of LOB codes entered per group
AVG_WALKS_GROUP	Average number of Walkaway codes entered per group
POSITION_REASSIGNS_PERCENTAGE	Percent of active agent positions reassigned each day

Table 60: Historical database values (Part 2 of 2)

Value	Description
DN_REASSIGNS_PERCENTAGE	Percent of Supplementary DNs reassigned each day
STORE_DN_STATS	Yes/No flag for storage of SDN statistics group (all or none)
STORE_LOB_STATS	Yes/No flag for storage of LOB statistics by agent (by group, by agent, or none)
STORE_WALK_STATS	Yes/No flag for storage of Walkaway statistics (all or none)
SHIFTS	Number of shifts per day
HOURS_PER_DAY	Number of hours per day
DAYS_PER_WEEK	Number of days per week
KEEP_INTERVAL	Number of days to keep interval data
KEEP_DAILY	Number of days to keep daily data
KEEP_WEEKLY	Number of weeks to keep weekly data
KEEP_MONTHLY	Number of weeks to keep monthly data
KEEP_LOG_EVENTS	Number of days to keep agent log event data
SRC_DEST_INTERFLOW_FACTOR	Expected number of source/destination group combinations
DISK_OVERHEAD	Disk overhead for operating system, application software temporary storage for reports, and so on.

Historical database equations

The historical database storage is computed as follows:

$$\text{Agt_Grp_Spv_Interval} = \text{POSITIONS} \times \left(1 + \frac{\text{POSITION_REASSIGNS_PERCENTAGE}}{100} \right)$$

$$\text{Agt_Grp_Spv_Day} = \text{Agt_Grp_Spv_Interval} \times \text{SHIFTS}$$

$$\text{Src_Dest_Grps_Interval} = \text{ACD_GROUPS} \times \text{SRC_DST_INTERFLOW_FACTOR}$$

$$\text{Src_Dest_Grps_Day} = \text{Src_Dest_Grps_Interval} \times 1.6$$

If STORE_LOB_STATS = 'Agent'

$$\text{LOB_Grp_Interval} = \text{Agt_Grp_Spv_Interval} \times \text{AVG_LOBS_GROUP}$$

$$\text{LOB_Grp_Day} = \text{AVG_LOBS_GROUP} \times \text{Agt_Grp_Spv_Day} \times \frac{5}{3}$$

else If STORE_LOB_STATS = 'GROUP'

$$\text{LOB_Grp_Interval} = \text{ACD_GROUPS} \times \text{AVG_LOBS_GROUP}$$

$$\text{LOB_Grp_Day} = \text{LOB_Grp_Interval} \times \frac{5}{3}$$

else

$$\text{LOB_Grp_Interval} = 0$$

$$\text{LOB_Grp_Day} = 0$$

If STORE_WALK_STATS = 'Agent'

$$\text{Walk_grp_interval} = \text{Agt_grp_spv_interval} \times \text{AVG_WALKS_GROUP}$$

$$\text{Walk_grp_day} = \text{AVG_WALKS_GROUP} \times \text{Agt_grp_spv_day} \times \frac{5}{3}$$

If STORE_WALK_STATS = 'Group'

$$\text{Walk_grp_interval} = \text{ACD_GROUPS} \times \text{AVG_WALKS_GROUP}$$

$$\text{Walk_grp_day} = \text{Walk_grp_interval} \times \frac{5}{3}$$

else

$$\text{Walk_grp_interval} = 0$$

$$\text{Walk_grp_day} = 0$$

$$\text{Intervals_Day} = \text{HOURS_PER_DAY} \times 2$$

$$\text{Days_of_Int_Data} =$$

$$((\text{KEEP_INTERVAL} \div 7) \times \text{DAYS_PER_WEEK} + (\text{KEEP_INTERVAL} \bmod 7))$$

$$\text{Intervals_to_Store} = \text{Days_of_Int_Data} \times \text{Intervals_Day}$$

$$\text{Days_to_Store} =$$

$$((\text{KEEP_DAILY} \div 7) \times \text{DAYS_PER_WEEK} + (\text{KEEP_DAILY} \bmod 7))$$

$$\text{Num_i_ovrflw} = \text{Src_Dest_Grps_Interval} \times \text{Intervals_to_Store}$$

$$\text{Num_i_group} = \text{ACD_GROUPS} \times \text{Intervals_to_Store}$$

$$\text{Num_i_agent} = \text{Agt_Grp_Spv_Interval} \times \text{Intervals_to_Store}$$

$$\text{Num_i_lob} = \text{LOB_Grp_Interval} \times \text{Intervals_to_Store}$$

if STORE_DN_STATS = 'GROUP'

$$\text{Num_sdn_interval} =$$

$$(\text{ACD_GROUPS} + (\text{DNS} \times \frac{\text{DN_REASSIGNS_PERCENTAGE}}{\text{Interval_Day}})) \times \text{Intervals_Day}$$

$$\text{Num_sdn_day} = \text{ACD_GROUPS} + (\text{DNS} \times \text{DN_REASSIGNS_PERCENTAGE})$$

else if STORE_DN_STATS = 'AGENT'

$$\text{Num_sdn_interval} =$$

$$\left(\text{ACD_GROUPS} + \left(\text{DNS} \times \frac{\text{DN_REASSIGNS_PERCENTAGE}}{\text{Interval_Day}} \right) \right) \times$$

$$\text{Intervals_Day} \times \frac{\text{Agt_Grp_Spv_Interval}}{\text{ACD_GROUPS}}$$

$$\text{Num_sdn_day} =$$

$$\left(\text{ACD_GROUPS} + \left(\text{DNS} \times \text{DN_REASSIGNS_PERCENTAGE} \right) \right) \times$$

$$\frac{\text{Agt_Grp_Spv_Interval}}{\text{ACD_GROUPS}}$$

else

$$\text{Num_sdn_interval} = 0$$

$$\text{Num_sdn_day} = 0$$

$$\text{Num_i_acddn} = \text{Num_sdn_interval} \times \text{Days_of_Int_Data}$$

$$\text{Num_i_walk} = \text{Walk_Grp} \times \text{Intervals_to_Store}$$

$$\text{Num_d_ovrflw} = \text{Src_Dest_Grps_Day} \times \text{Days_to_Store}$$

$$\text{Num_d_group} = \text{ACD_GROUPS} \times \text{Days_to_Store}$$

$$\text{Num_d_agent} = \text{Agt_Grps_Spv_Day} \times \text{Days_to_Store}$$

$$\text{Num_d_lob} = \text{LOB_Grp_Day} \times \text{Days_to_Store}$$

$$\text{Num_d_acddn} = \text{Num_sdn_day} \times \text{Days_to_Store}$$

$$\text{Num_d_walk} = \text{Walk_Grp} \times \text{Days_to_Store}$$

$$\text{Num_w_ovrflw} = \text{Src_Dest_Grps_Day} \times \text{KEEP_WEEKLY}$$

$$\text{Num_w_group} = \text{ACD_GROUPS} \times \text{KEEP_WEEKLY}$$

$$\text{Num_w_agent} = \text{Agt_Grps_Spv_Day} \times \text{KEEP_WEEKLY}$$

$$\text{Num_w_lob} = \text{LOB_Grp_Day} \times \text{KEEP_WEEKLY}$$

$$\text{Num_w_acddn} = \text{Num_sdn_day} \times \text{KEEP_WEEKLY}$$

$$\text{Num_w_walk} = \text{Walk_Grp} \times \text{KEEP_WEEKLY}$$

$$\text{Num_m_ovrflw} = \text{Src_Dest_Grps_Day} \times \text{KEEP_MONTHLY}$$

$$\text{Num_m_group} = \text{ACD_GROUPS} \times \text{KEEP_MONTHLY}$$

$$\text{Num_m_agent} = \text{Agt_Grps_Spv_Day} \times \text{KEEP_MONTHLY}$$

$$\text{Num_m_lob} = \text{LOB_Grp_Day} \times \text{KEEP_MONTHLY}$$

$$\text{Num_m_acddn} = \text{Num_sdn_day} \times \text{KEEP_MONTHLY}$$

$$\text{Num_m_walk} = \text{Walk_Grp} \times \text{KEEP_MONTHLY}$$

$$\text{Num_d_event} = \text{AGENT_EVENTS} \times \text{AGENTS} \times \text{KEEP_LOG_EVENTS}$$

$$\begin{aligned} \text{Interval Storage} = & (\text{sizeof}(i_ovrflw) \times \text{Num_i_ovrflw}) + (\text{sizeof}(i_group) \times \text{Num_i_group}) \\ & + (\text{sizeof}(i_agent) \times \text{Num_i_agent}) + (\text{sizeof}(i_lob) \times \text{Num_i_lob}) \\ & + (\text{sizeof}(i_acddn) \times \text{Num_i_acddn}) + (\text{sizeof}(i_walk) \times \text{Num_i_walk}) \end{aligned}$$

$$\begin{aligned} \text{Daily Storage} = & (\text{sizeof}(d_ovrflw) \times \text{Num_d_ovrflw}) + \text{sizeof}(d_group) \times \text{Num_d_group} \\ & + (\text{sizeof}(d_agent) \times \text{Num_d_agent}) + (\text{sizeof}(d_lob) \times \text{Num_d_lob}) \\ & + (\text{sizeof}(d_acddn) \times \text{Num_d_acddn}) + (\text{sizeof}(d_walk) \times \text{Num_d_walk}) \end{aligned}$$

$$\begin{aligned} \text{Weekly Storage} = & (\text{sizeof}(w_ovrflw) \times \text{Num_w_ovrflw}) \\ & + (\text{sizeof}(w_group) \times \text{Num_w_group}) \\ & + (\text{sizeof}(w_agent) \times \text{Num_w_agent}) + (\text{sizeof}(w_lob) \times \text{Num_w_lob}) \\ & + (\text{sizeof}(w_acddn) \times \text{Num_w_acddn}) + (\text{sizeof}(w_walk) \times \text{Num_i_walk}) \end{aligned}$$

$$\begin{aligned} \text{Daily Storage} = & (\text{sizeof}(m_ovrflw) \times \text{Num_m_ovrflw}) \\ & + \text{sizeof}(m_group) \times \text{Num_m_group} \\ & + (\text{sizeof}(m_agent) \times \text{Num_m_agent}) + (\text{sizeof}(m_lob) \times \text{Num_m_lob}) \\ & + (\text{sizeof}(m_acddn) \times \text{Num_m_acddn}) + (\text{sizeof}(m_walk) \times \text{Num_m_walk}) \end{aligned}$$

$$\begin{aligned} \text{Log_Event_Storage} = \\ & \text{sizeof}(d_event) \times \text{AGENT_EVENTS} \times \text{AGENTS} \times \text{KEEP_LOG_EVENTS} \end{aligned}$$

$$\begin{aligned} \text{Data Storage} = \\ & \text{Interval_Storage} + \text{Daily_Storage} + \text{Weekly_Storage} + \\ & \text{Monthly_Storage} + \text{Log_Event_Storage} \end{aligned}$$

$\text{Disk_Required_by_Partition} = \text{Data_Storage} + \text{Partition_Overhead}$

The total space required for the partition is the resulting 'Disk_Required_by_Partition' value from the above equation.

Call Center Management Information System

CC MIS Installation and Maintenance

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