# Using Optivity Telephony Manager Release 1.2

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## Revision History

| Date Revised | Version | Reason for revision |
|---|---|---|
| June 2001 | 1.00 | Initial Standard release. |
| January 2002 | 2.00 | Upissued to coincide with the release of OTM Release 1.2. |

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# Preface

Optivity* Telephony Manager (OTM) is designed for managers of telecommunications equipment and authorized Nortel Networks* distributors. OTM provides a single point of access and control for Nortel Networks Meridian 1* and Succession Communication Server for Enterprise (CSE) 1000* system management. OTM uses IP technology to target the following key customer values:

- Single point of connectivity to Meridian 1 systems, Succession CSE 1000 systems, and related devices.
- Data collection for traffic and billing records.
- Collection, processing, distribution, and notification for alarms and events.
- Data entry and propagation (employee names and telephone numbers shared in multiple databases).
- Web-based management applications.

## Before you begin

This guide is intended for Meridian 1 and Succession CSE 1000 system administrators using a Microsoft Windows*-based PC for management activities. This guide assumes that you have the following background:

- Working knowledge of the Windows NT*/Windows 2000 Server operating system.
- Familiarity with Meridian 1 and Succession CSE 1000 system management activities.
- Knowledge of general telecommunications concepts.
- Experience with windowing systems or graphical user interfaces (GUIs).

# Text conventions

This guide uses the following text conventions:

| | |
|---|---|
| angle brackets (< >) | Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command.<br><br>Example: If the command syntax is `chg suppress_alarm <n>` where *n* is 0 = all, 1 = minor, 2 = major, 3 = critical, you enter `chg suppress_alarm 3` to suppress all alarms except critical alarms. |
| **bold Courier text** | Indicates command names and options and text that you need to enter.<br><br>Example: Enter **prt open_alarm**. |
| *italic text* | Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore.<br><br>Example: For installation information, refer to *Installing and Configuring Optivity Telephony Manager for Meridian 1*. |
| plain Courier text | Indicates command syntax and system output, for example, prompts and system messages.<br><br>Example: Open Alarm destination #0 is 47.82.40.237 |
| separator ( > ) | Shows menu paths.<br><br>Example: Select Utilities > Backup in the Navigator window. |

# Acronyms

This guide uses the following acronyms:

| | |
|---|---|
| ASP | active server page |
| CLI | command line interface |

| DBA | Data Buffering and Access |
|-----|--------------------------|
| DN  | directory number |
| GUI | graphical user interface |
| IP  | Internet Protocol |
| LAN | local area network |
| LDAP | lightweight directory access protocol |
| MAT | Meridian Administration Tools |
| NMS | network management system |
| OTM | Optivity Telephony Manager |
| PTY | pseudo-TTY (network port) |
| RAS | remote access server |
| TBS | Telecom Billing System |
| TN  | terminal number |
| TTY | teletype (serial port) |
| uid | unique identifier in LDAP synchronization |

# Related publications

For more information about using Optivity Telephony Manager and associated applications, refer to the following publications:

- *Installing and Configuring Optivity Telephony Manager* (553-3001-230)

  Provides information on how to install and configure the Optivity Telephony Manager software.

- *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331)

  Provides information on the following optional telemanagement applications; Telecom Billing System (TBS), TBS Web Reporting, General Cost Allocation System (GCAS), and Consolidated Reporting System (CRS).

- *Meridian Internet Telephony Gateway (ITG) Trunk 1.0/Basic Per-Trunk Signaling* (553-3001-116)

  Describes configuration and maintenance of the 8-port ITG trunk card.

- *Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (553-3001-202)

  Describes configuration and maintenance of the 24-port ITG trunk card. This card appears to the Meridian 1 switch as a 24-port trunk card with ISDN Signaling Link (ISL) and D-channel signaling.

- *Meridian Internet Telephony Gateway (ITG) Line 1.0/IP Telecommuter* (553-3001-119)

  Describes configuration and maintenance of the ITG line card for IP Telecommuter.

- *Meridian Internet Telephony Gateway (ITG) Line 2.0/i2004 Internet Telephone* (553-3001-204)

  Describes configuration and maintenance of the ITG gateway card for the Meridian Internet Telephone, also referred to as the i2004 telephone.

- *M3900 Series Meridian Digital Telephones; Description, Installation and Administration* (553-3001-216)

  Describes M3900 series telephones and related features. The M3904 and M3905 telephones provide access to an OTM generated Corporate Directory.

- *X11 Software Features Guide* (553-3001-306)

  Describes features associated with the Meridian 1 system. For each feature, information is provided on feature implementation, feature operation, and interaction between features.

- *Software Input/Output Guide, X11 Administration* (553-3001-311)

  Describes the prompts and responses for the Meridian 1 system's command line interface (CLI). This guide includes information on overlay programs that are classified as administration overlays.

- *Software Input/Output Guide, System Messages* (553-3001-411)

  Describes the meaning of the messages generated by the Meridian 1 system.

- *Software Input/Output Guide, X11 Maintenance* (553-3001-511)

  Describes the prompts and responses for the Meridian 1 system's command line interface (CLI). This guide includes information on overlay programs that are classified as maintenance overlays.

- *Option 11C Planning and Installation* (553-3021-210)

  Provides information on the Survivable IP Expansion (SIPE) feature.

- *Succession Communication Server for Enterprise 1000 Planning and Installation Guide* (553-3023-210)

  Provides information on the Survivable IP Expansion (SIPE) feature for Succession CSE 1000 systems.

- *Succession Communication Server for Enterprise 1000 Input/Output Guide, Administration* (553-3023-311)

  Describes the prompts and responses for the Succession CSE 1000 system's command line interface (CLI). This guide includes information on overlay programs that are classified as administration overlays.

- *Succession Communication Server for Enterprise 1000 Input/Output Guide, System Messages* (553-3023-411)

  Describes the meaning of the messages generated by the Succession CSE 1000 system.

- *Succession Communication Server for Enterprise 1000 Input/Output Guide, Maintenance* (553-3023-511)

  Describes the prompts and responses for the Succession CSE 1000 system's command line interface (CLI). This guide includes information on overlay programs that are classified as maintenance overlays.

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# How to get help

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# Chapter 1
# Overview of Optivity Telephony Manager

OTM contains all of the Meridian Administration Tools (MAT) Microsoft Windows applications. In addition, OTM introduces new Web applications and integration with Optivity NMS.

OTM provides value by acting as a management server. It collects and processes alarms from multiple devices (Meridian 1, Succession CSE 1000, Call Pilot, ITG, etc.), collects call accounting and traffic data from multiple Meridian 1 and Succession CSE 1000 systems, and acts as a terminal server for multiple devices. One OTM Windows NT® Server replaces multiple buffer boxes, access modems, and terminal servers.

You may also install OTM in a standalone configuration, without client support or Web applications, on a PC running Windows 95/98, Windows NT version 4.0, or Windows 2000. System access is provided through the OTM Windows System Terminal, and security management through the OTM User Administration.

## Technical documentation

OTM technical documentation consists of an installation and configuration guide and two user guides. Table 1 outlines the contents of the various guides in the OTM documentation suite. The entries in the second and third columns indicate whether the information in that section applies to:

- OTM Windows Navigator, which is the Microsoft Windows-based interface
- OTM Web Navigator, which is the Web-based (http) interface
- Both interfaces

**Table 1** OTM 1.1 Technical Documentation Content

| Book Title | Microsoft Windows | Web | Contents |
|---|---|---|---|
| Installing and Configuring Optivity Telephony Manager | | | **Initial Installation Tasks:** |
| | X | | OTM requirements |
| | X | | Installing a server |
| | X | | Installing a client |
| | X | | OTM server software installation |
| | X | | Serial numbers and keycodes |
| | X | | Java runtime environment (JRE) |
| | X | | OTM client software installation |
| | X | | Upgrades, migration, licensing |
| | X | | Installing Web help and documentation |
| | | | **Initial configuration tasks:** |
| | X | | Modem configuration for OTM applications in Microsoft Windows |
| | X | | Logging in, changing the default password |
| | X | | Testing the connection |
| | | | Setting up OTM applications |
| | X | | Adding sites, systems, Windows users |
| | X | X | Adding Web users |
| | X | | Setting up the Meridian 1 |
| | X | | Setting up the Virtual Terminal Service |
| | X | | Setting up data buffering and access (DBA) |
| | X | | Setting up the LDAP server |
| | X | | Setting up alarm management |
| | X | | Performing an OTM backup |
| | X | | Installing a Web browser client |
| | X | | Integrating OTM with Optivity NMS |
| | | | **Windows NT reference** |
| | X | | Installing Windows NT |
| | X | | Configuring a Windows NT server |
| | X | | Windows NT security guidelines |
| | | | **Uninstalling OTM** |
| | | | **OTM engineering guidelines** |

**Table 1**   OTM 1.1 Technical Documentation Content (continued)

| Book Title | Microsoft Windows | Web | Contents |
|---|---|---|---|
| Using Optivity Telephony Manager | X | X | **Overview of Optivity Telephony Manager** |
| | | | **Common Services** |
| | | |   **Services** |
| | X | |     OTM Windows Navigator |
| | X | X |     Configuring sites, systems, and users |
| | X | |     Maintenance tasks |
| | X | |     Regional Settings |
| | X | |     Access Server |
| | X | |     Directory Services |
| | X | |     Corporate Directory |
| | X | |     Event log viewer |
| | X | |     System terminal |
| | X | |     System monitor |
| | X | |     Data Buffering and Access |
| | | |   **Utilities** |
| | X | |     Scheduler |
| | X | |     Import and export utilities |
| | X | |     Database compact and repair |
| | X | |     Backup and restore |
| | X | |     LDAP synchronization |
| | X | |     Electronic data dump |
| | | | **Web services** |
| | X | X |   Web Navigator |
| | | X |   Customizable Web Help |
| | X | X |   User Access and Session Monitor |
| | X | X |   Web Virtual Terminal Service |
| | X | X |   Web System Terminal |
| | | X |   Desktop Services |
| | | | *(continued)* |

**Table 1** OTM 1.1 Technical Documentation Content (continued)

| Book Title | Microsoft Windows | Web | Contents |
|---|---|---|---|
| Using Optivity Telephony Manager *(continued)* | | | *(continued)* |
| | | | **Station Administration** |
| | | |   **Getting started** |
| | X | |     Retrieving and updating system data |
| | | |   **General information** |
| | X | |     Station data and synchronization considerations |
| | X | |     Station administration windows and menus |
| | X | |     Accessing station data |
| | X | |     Adding and deleting stations |
| | X | |     Swapping TNs |
| | X | |     Managing station data |
| | X | |     Designation strips (DNs) |
| | X | |     Station data validation |
| | X | |     Directory Service |
| | X | |     Architecture, links, integration |
| | X | |     Excess DN report |
| | X | |     Station and directory synchronization |
| | X | X |     Desktop Services |
| | | |   **Station Administration features** |
| | X | |     Call Party Name Display (CPND) |
| | X | |     Corporate directory |
| | X | |     List manager |
| | X | |     Voice mailbox |
| | X | |     Global update |
| | X | | **Communicating with a Meridian 1** |
| | X | | **Conversion utility** |
| | | | **Reporting:** |
| | X | |   Generating reports |
| | X | |   OTM file viewer |
| | X | |   Designing report forms |
| | X | | **Power user tool** |
| | | | *(continued)* |

**Table 1** OTM 1.1 Technical Documentation Content (continued)

| Book Title | Microsoft Windows | Web | Contents |
|---|---|---|---|
| Using Optivity Telephony Manager *(continued)* | | | *(continued)* |
| | | | **Alarm Management** |
| | X | | **Alarm management configurations** |
| | X | X | **Web-based alarm management** |
| | | | **Windows-based alarm management** |
| | X | | Alarm banner |
| | X | | Event monitor window |
| | | | **Alarm notification** |
| | X | | Notification process |
| | X | | Setting up alarm notification |
| | X | | Events processing |
| | X | | Scripting |
| | X | | Script wizard and sample scripts |
| | | | **Working with control files** |
| | X | | Files: devices, configuration, scripts |
| | | | **Maintenance Applications** |
| | X | X | **Launching maintenance windows applications** |
| | | | **Maintenance pages/windows** |
| | X | X | Core CPU |
| | X | X | I/O Ports |
| | X | X | Network Groups |
| | X | X | Network Loops |
| | X | X | PE Shelves |
| | X | X | PE Cards |
| | X | X | PE Units |
| | X | X | B- and D-channels |
| | X | | **Inventory reporting** |
| | | | **Traffic Analysis** |
| | X | | **Configuration** |
| | X | | **User Reference** |
| | | | **ESN Analysis and Reporting Tool** |
| | X | | **Synchronizing the OTM ESN database and the Meridian 1 switch** |
| | X | | **Update the V&H table** |
| | X | | **Printing ESN reports** |
| | X | | **ESN Setup wizard** |

**Table 1** OTM 1.1 Technical Documentation Content (continued)

| Book Title | Microsoft Windows | Web | Contents |
|---|---|---|---|
| Using Optivity Telephony Manager Telemanagement Applications | X | X | **Overview of Telemanagement Applications** |
| | | | **Telecom Billing System (TBS)** |
| | X | | Configuration |
| | X | | Operating Procedures |
| | X | | User Reference |
| | | | **Telecom Billing System (TBS) Web Reporting** |
| | X | X | Setting up TBS Web Reporting |
| | X | X | User Reference |
| | | | **Call Tracking** |
| | X | | Collecting data from a Meridian 1 switch |
| | X | | Call Tracking menus |
| | X | | Sample setup for real time monitoring |
| | | | **General Cost Allocation System (GCAS)** |
| | X | | Operating Procedures |
| | X | | User Reference |
| | | | **Consolidated Reporting System (CRS)** |
| | X | | Operating Procedures |
| | X | | User Reference |

# Overview of OTM applications

OTM includes the following Windows-based applications:

- Enhanced Station Administration/CPND
- Directory Service with LDAP support
- Telecom Billing System (TBS), which replaced MAT Call Accounting
- Data Buffering and Access (DBA)

OTM Windows-based applications can operate in either server or standalone mode on a PC running Windows NT version 4.0 Server or Windows 2000 Server.

OTM can also operate in client mode on a PC running Windows 95/98, Windows NT 4.0 Server or Workstation, or Windows 2000 Server. For more information about configuring OTM in standalone mode, refer to "Standalone configuration" on page 51. For more information about configuring OTM in client mode, refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230).

The following MAT 6.6 applications are supported in OTM:

- List Manager
- ESN
- Traffic Analysis module
- Call Tracking application
- Corporate Directory
- IP Telephony Gateway (ITG) applications
- Inventory
- Maintenance Windows
- Alarm Notification

OTM provides the following Web-based (http) applications:

- OTM Web Navigator
- Virtual Terminal Service (command line interface from the Web)
- Web System Terminal
- Web Station Administration
- Web Alarm Browser
- Maintenance Pages
- Customizable Web Help
- Web User Access and Session Monitor pages
- Desktop Services that provide Web pages to display directory and telephone configuration. You may permit end users to modify the configuration of their telephones using Desktop Services.

# Comparison of OTM Windows and OTM Web interfaces

You can access OTM using either OTM Windows Navigator or OTM Web Navigator. You can perform many basic configuration and management tasks through either interface. This section describes the similarities and differences between the OTM Windows Navigator and the OTM Web Navigator.

## OTM Windows Navigator

OTM Windows Navigator gives you access to OTM managed systems. Through menus and folders you can:

- View, configure and administer sites, systems and users
- Configure and administer OTM services
- Launch utility applications
- Display licensing and release information for all installed OTM applications

The OTM Windows Navigator displays sites and systems in a tree structure. When you choose a system on the tree you can launch a System window to configure the system and launch management applications. The OTM System Navigator window displays all connected systems. When you select a system the list of available applications appears in the window. The OTM Windows Navigator system access depends on the privileges assigned to your user ID at the Meridian 1 or Succession CSE 1000 site. For a list of available functions and applications, refer to Table 2 "Comparing Windows and Web Navigators".

## OTM Web Navigator

The OTM Web Navigator provides a number of the same functions available in the OTM Windows Navigator. The OTM Web Navigator allows you to view, configure and administer sites, systems, and users. OTM Web security meets the same criteria as provided by Windows NT and Windows 2000.

One of the advantages of the OTM Web interface is the ability for users to configure their telephones through their Web browser. As an administrator, using Web Desktop Services, you can also block end user access to configuration screens. A particularly useful Desktop Services feature is the ability to customize the help files to suit specific customer needs.

Table 2 compares the functions and applications available in the OTM Windows Navigator with those available in the OTM Web Navigator.

**Table 2**   Comparing Windows and Web Navigators

| OTM Windows Navigator | OTM Web Navigator |
|---|---|
| **Common Services** | |
| Ability to launch other applications<br>Scheduler<br>Backup & Restore (OTM Data)<br>Import/Export<br>PC Event Log<br>Compact and Repair<br>License management<br>Data Buffering and Access<br>Trap Master<br>Trap Server<br>Related utilities | Ability to link to other Web sites<br>Event Service<br>System Sanity<br>Terminal Server<br>Trap Master<br>Trap Server |
| **Fault Management** | |
| PC Event Log and Viewer<br>Event Monitor<br>Alarm Banner<br>Alarm notification by:<br>• pager<br>• email<br>• file<br>• SNMP trap forwarder | Alarm Browser (consolidated systems)<br>• manage alarms from core Meridian 1, Succession CSE 1000, Meridian Mail, ITG, SCCS and Call Pilot. |

**Table 2** Comparing Windows and Web Navigators (continued)

| OTM Windows Navigator | OTM Web Navigator |
|---|---|
| **Configuration Management** | |
| Station Administration<br>Directory Editor<br>LDAP Query utility<br>LDAP Synchronization<br>Corporate Directory<br>Maintenance Windows<br>• real time status of hardware PBX<br>• sorting by type or status<br>• enable, disable, test<br>ESN<br>ITG Configuration<br>DBA Backup & Restore<br>List Manager<br>Inventory<br>Directory Update (Global Change) | Maintenance Pages<br>• real time status of hardware PBX<br>• sorting by type or status<br>• enable, disable, test<br>Customizable Web Help<br>LDAP Synchronization Report<br>Directory Update (Global Change)<br>Desktop User Access<br>• finding telephones<br>• viewing set configuration<br>• changing keys and features<br>Web Navigator Access<br>Session Monitor |
| **Accounting Management** | |
| Telecom Billing System (TBS)<br>• analyzes CDR from multiple switches<br>• pre-defined reports<br>• customization of reports<br>General Cost Allocation System (GCAS)<br>Consolidated Reporting System (CRS)<br>Call Tracking | Telecom Billing Services (TBS) Web Reporting |
| **Performance Management** | |
| Traffic Analysis | |
| **Security Management** | |
| OTM User Template Administration | Web Navigator Access Security (Admin Login - Local Domain Security)<br>Web Desktop Access Security using WinNT security<br>Web Desktop Access Security using LDAP security |
| **System Access** | |
| Windows System Terminal | Web System Terminal |

**Table 2** Comparing Windows and Web Navigators (continued)

| OTM Windows Navigator | OTM Web Navigator |
|---|---|
| **End User Applications** | |
| Windows Help | Web help |
| | End User Desktop Services |
| | • viewing set configuration |
| | • changing keys and features |
| | Telecom Billing System (TBS) Web Reports |

# Common Services

OTM Common Services are similar to MAT Common Services. Most have been enhanced for OTM; several are new. OTM Common services are:

- OTM Windows Navigator and OTM System windows
- OTM Windows based System Terminal
- New Import and Export Utilities
- New Compact and Repair Utility
- Enhanced 32-bit Scheduler
- Enhanced PC Event Log Viewer
- Enhanced Database Buffering and Access (DBA)
- OTM user administration
- OTM Backup and Restore
- New System Monitor on the OTM server
- License management
- NT Client capability

# OTM Server

The OTM server runs on a Windows NT 4.0 Server or Workstation and Windows 2000 Server. It performs the following functions:

- Virtual Terminal Service provides single point of connectivity to the Meridian 1 or Succession CSE 1000 system and related devices
- Common Services and file server for OTM client applications
- Data Buffering and Access (DBA) collects and stores CDR and Traffic data
- Web Server for OTM Web-based applications
- Alarm and event collection, processing, distribution, and notification
- Run other management applications such as Call Pilot

> →  **Note:** Do not install OTM on a Microsoft Windows NT or Windows 2000 server that is configured as a primary domain controller (PDC).

Figure 1 is a block diagram illustrating the functions provided by the OTM server.

**Figure 1**   OTM Server block diagram
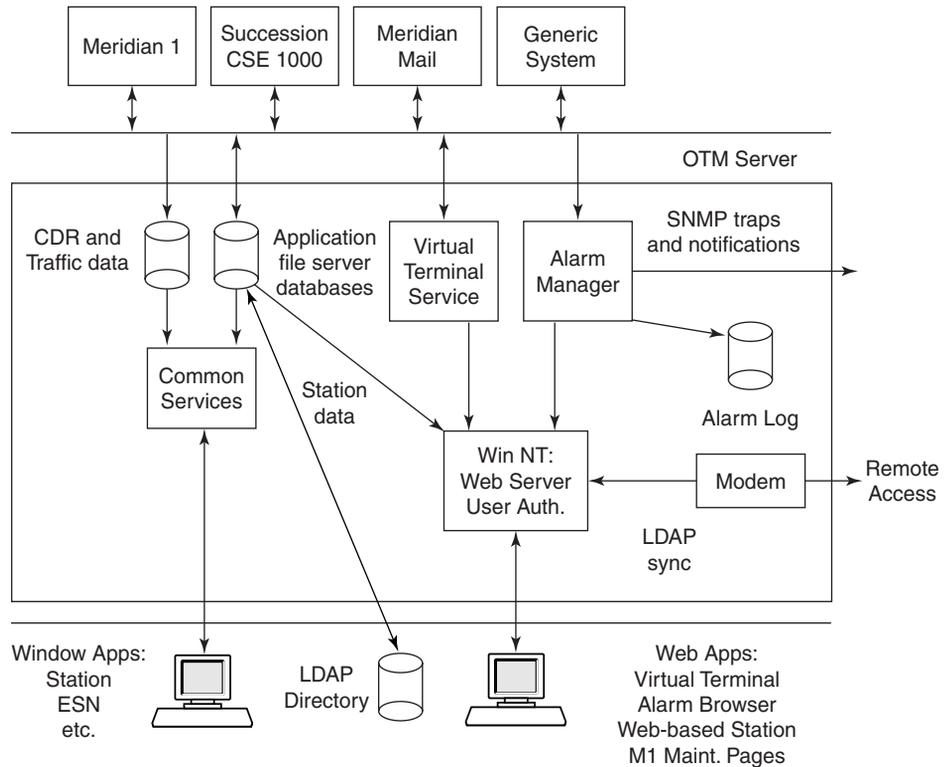
# Configurations

## Network model

OTM can manage voice switches in both a centralized and local manner.

Centralized management is geared towards network management centers, whereas local management is geared toward site level telecom managers.

Figure 2 shows an example of OTM in a centralized configuration.

**Figure 2**   OTM Network model
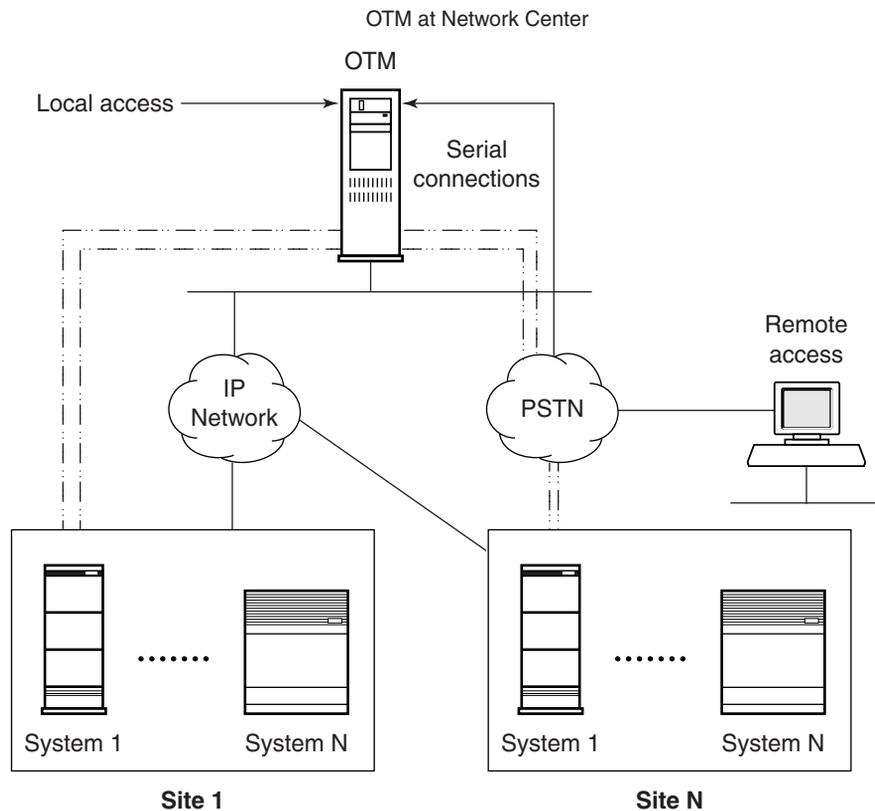


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# Site model

Figure 3 shows an example of a single OTM as a Site Manager supporting multiple voice devices in a single site. You can run Client/Server acting applications (Web or Windows) on the OTM server or remotely via IP or dial in connections.

**Figure 3**   OTM Site model

One onsite OTM

Optional link to IT infrastructure
LDAP server
domain server

Local
e.g.
Building

Ethernet to:
- Core CPU
  (ind. Traffic/CDR)
- ITG
- MICB II
- MIRAN II
- Mail Release 13 or greater
- Symposium Server
- Call Pilot Server
- Other Generic IP

Ethernet

Windows NT
Workstation
or Server

Ethernet

Serial Lines

Data base

Serial links to:
- Mail Release less than 13
- MIRAN I
- MICB I
- Other generic serial

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# Standalone configuration

OTM may be installed in a standalone configuration. The standalone configuration can run on a Windows 95, Windows 98, Windows NT 4.0, or Windows 2000 PC. An OTM system configured as a standalone does not allow for remote clients; however, it does allow for access to Web-based applications. System access is provided through Windows System Terminal, and Security Management is accomplished through OTM User Template Administration.

Common Services available in a standalone configuration include:

- Windows Navigator
- Scheduler
- Backup and Restore (OTM data)
- Import/Export
- Compact & Repair

In the area of fault management, when installed in a standalone configuration, OTM provides a sub-set of the functionality available when installed in a network. You can set up the standalone configuration to forward alarms to Optivity NMS. An enhanced PC Event Log and viewer is available along with an Event Monitor which allows you to view Meridian 1 and Succession CSE 1000 system alarms. Alarm Banner is included for core alarms, and Alarm Notification permits handling, filtering and forwarding (including forwarding to numeric and alphanumeric pagers).

Call accounting is accomplished using the Telecom Billing System (TBS). Data Buffering and Access (DBA) provides real time collection of Call Detail Recording (CDR) and Traffic data via IP. Traffic and TBS use data collected by DBA or via a buffer box to generate reports.

The standalone configuration supports the following configuration management and maintenance activities:

- System Window
- Station Administration
- Directory Editor (including Employee Editor and others)
- Directory Service with integration with Station Administration

- Lightweight Directory Access Protocol (LDAP) query utility
- Corporate Directory (export station data, MAT functionality)
- Maintenance Windows
- Electronic Switched Network (ESN) Analysis and Reporting Tool
- Internet Telephony Gateway (ITG) configuration
- DBA Backup and Restore (X11 database)
- List Manager
- Inventory

# Connectivity through OTM

The Virtual Terminal Service provides the connection between your browser and a device or system. You can launch the OTM Web Navigator from a Web browser, such as Internet Explorer or Netscape Navigator, and select a Meridian 1 or Succession CSE 1000 system or other device to view.

You can access systems and devices using OTM's Web System Terminal window from within your Web browser, without referring to IP addresses, serial port settings, or URLs. That information is retained on the OTM server.

If you are not using Access Server, uncheck the "Launch Automatically" check box. This allows the server COM port to be used by another application, if needed.

> **Caution:** For security reasons, Nortel Networks strongly recommends that you configure RAS to allow the incoming call to Access the Computer Only. This setting allows access to the RAS server, but not to the rest of your network.

Figure 4 shows the various ways you can use OTM to connect to network devices and systems, such as the Meridian 1 and Succession CSE 1000. The figure legend, which follows the figure, describes these connections in more detail.

**Figure 4**   OTM Connectivity



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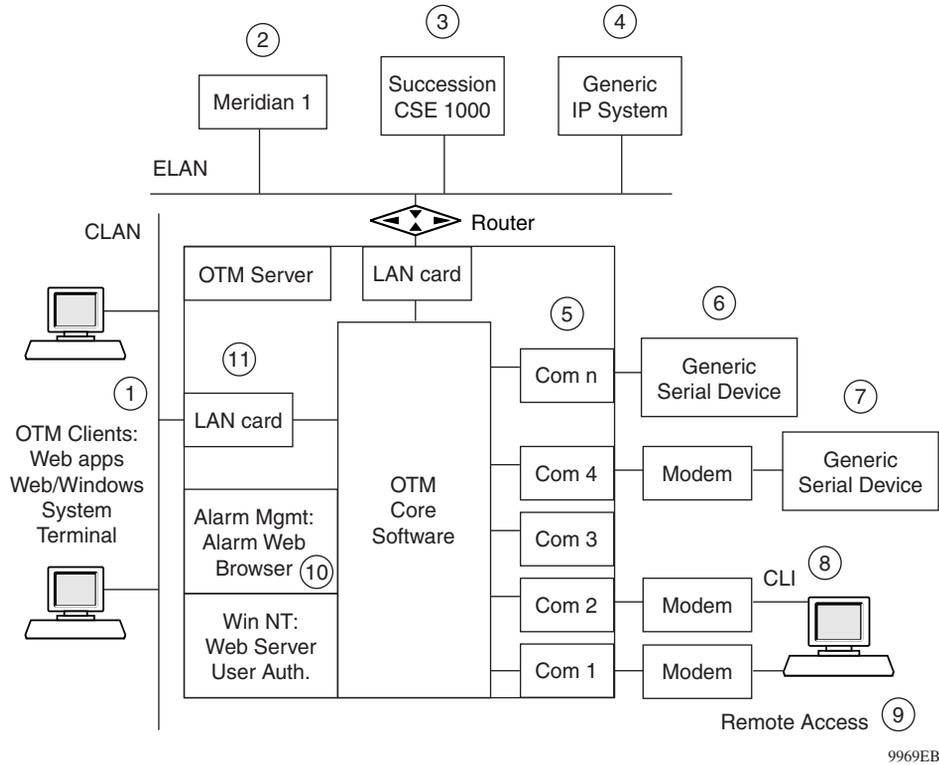
**Table 3**   **Legend**

| | |
|---|---|
| 1. | OTM users can access a system via the OTM Windows and Web Navigators. Applications include System Terminal as well as any Web-based applications supported by the system. OTM clients on the CLAN/ELAN can also use the OTM Windows based applications (Station Administration, ESN, etc.). |
| 2. | OTM provides the connectivity to the Meridian 1 system for all windows and Web-based applications. |
| 3. | OTM provides the connectivity to the Succession CSE 1000 system for all windows and Web-based applications. |
| 4. | Generic IP System connection - the Web-based System Terminal provides a telnet type connection to any IP connected system or device. You can also navigate to the device's management Web pages (if applicable). Example: MIRAN II cards provide both a telnet access and Web-based management applications. |
| 5. | Com Ports - you can equip the OTM server with a Multiple Serial card to provide up to 8 additional com ports. You can use these ports for dial in or dial out. |

**Table 3** **Legend** (continued)

| |
|---|
| 6. Generic System direct serial connection - allows direct connection to any serial device. For example, for legacy Meridian 1 systems (R21 and earlier), you can connect to a maintenance TTY port and capture the M1 error messages. A new OTM Text Handler capability can filter the TTY output and generate SNMP traps for selected error messages. |
| 7. Generic System remote serial connection - when connecting to a remote serial system you select the com port and manually dial the number of the desired system. |
| 8. Access Server - provides a serial command line interface (CLI) into the OTM Server, enabling remote access. Once connected, you can change Windows NT passwords or connect to any system or devices defined and enabled in the Virtual Terminal Service. The CLI is launched at Server Startup, and opens a status window displaying different status messages. The CLI Configuration window allows you to configure the server COM port settings. A real-time Log file details all CLI activities. For more information, please see "Access Server option" on page 57. |
| 9. Remote Access - You can dial in to the OTM Server, log in using the Windows NT Remote Access Service (RAS) and access all defined systems, such as Web System Terminal or system specific Web applications. In addition, you can use the PC Anywhere application to dial into an OTM client PC on the CLAN/ELAN. |
| 10. Web Alarm Browser - displays alarms collected from multiple supported Meridian 1 and Succession CSE 1000 systems and devices. |
| 11. PC LAN cards - provide access to both the CLAN and ELAN. |

# Alarm Management

OTM Alarm Management provides an alarm collection and processing center for multiple systems and devices. OTM receives SNMP traps from systems, such as the Meridian 1, Succession CSE 1000, and Call Pilot, and stores them in a circular log file on the OTM Server. The OTM Alarm Notification application monitors the incoming traps and notifies the appropriate people of important events and alarms.

OTM Alarm Management has the following components:

- Web based Alarm Browser - used for viewing alarms from multiple systems and devices. HTML help is provided for individual alarms.
- Windows based Alarm Browser - used for viewing Meridian 1 and Succession CSE 1000 specific alarms. Windows help is provided for individual alarms.

- Alarm Notification application - provides a scripting language to generate notifications on selected incoming traps. Notification types include pagers, email, and the forwarding of SNMP traps to an upstream processor (such as Optivity NMS). Notification is triggered by trap data such as alarm severity, device type, and time of day. A Script Wizard application simplifies the creation of Alarm Notification scripts.

- Text Handler application - parses maintenance TTY output and generates traps on selected error messages. This is intended primarily for legacy Meridian 1 systems (Release 21 and earlier) and Meridian Mail systems which cannot generate traps. You can create Text Handler rules to support other serial devices.

- PC Event Log and Viewer for viewing events and alarms generated on the OTM Server and all of its Windows clients. This Windows application can also generate SNMP traps based on the event severity level.

Figure 5 shows the main components of OTM Alarm Management. The Trap Master is responsible for handling the SNMP Traps from the systems and storing it on the server for retrieval by the Alarm Browser client. The Trap Server distributes traps to applications registered to receive traps such as Alarm Notification.

**Figure 5** OTM Alarm Management block diagram
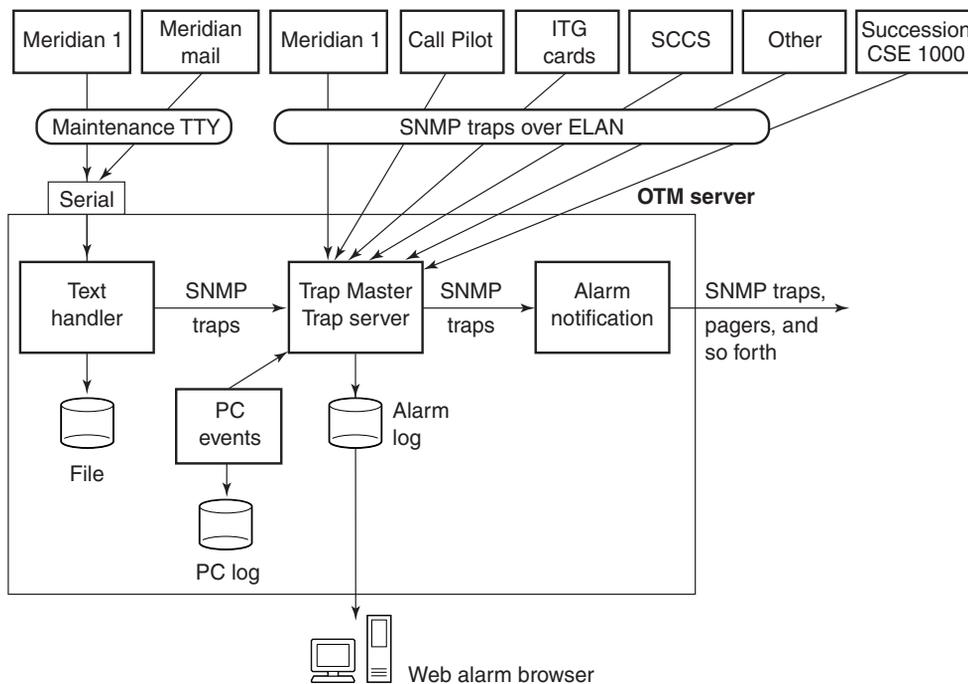


The Trap Master and Trap Server are run as Windows NT Services on the OTM Server.

OTM integrates with Optivity NMS 9.0.1 and above. The devices represented in Optivity NMS are OTM servers. These are manually added by the Optivity NMS administrator. See Figure 6

For a list of supported devices and additional information on alarm management, see Chapter 5, "Alarm Management".

**Figure 6**   Centralized Alarms



Optivity NMS

**Network
Management
Center**

IP
network

Filtered
alarms are
forwarded

OTM Server

OTM Server

OTM Client

OTM Client

System 1

System N

System 1

System N

**Site 1**

**Site 2**
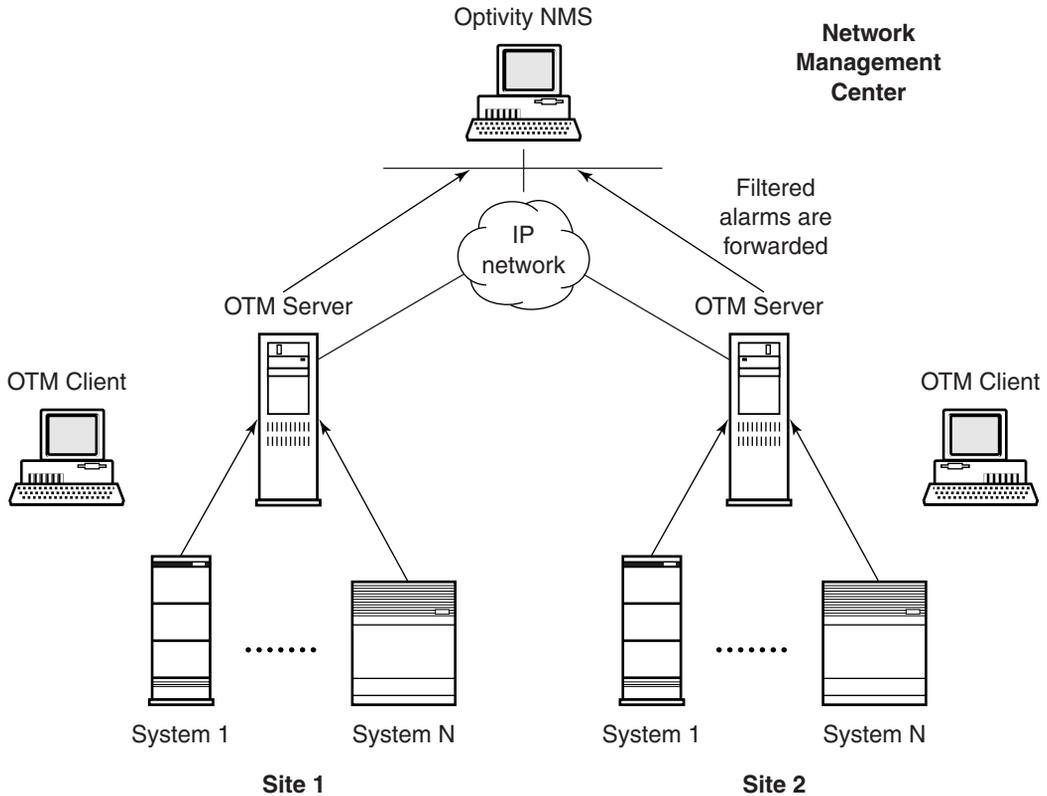
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## Access Server option

The Access Server capability is available as an orderable option within an OTM
server. This functionality allows CLI access to an OTM Server using either a
direct serial connection or a modem. From the OTM Server, connectivity is
available to configured devices using the connection capability within Virtual
Terminal Server. This connectivity must be pre-configured within Virtual
Terminal Server to be available to a CLI connection.

Typically, Access Server is installed on an on-site PC that is used like a terminal server to allow a single connection to the site and then to fan out this connectivity to multiple devices that are connected to the OTM Server. You can access the remote location either by means of a terminal or human interactive session, or through a remote machine communicating via scripts.

You can use the OTM Access Server option with any level of OTM package (General, Enhanced, or Premium). You add this CLI input capability by ordering the "Access Server" to add to the OTM server. If you order Access Server, it is not necessary to order any Set Expansion Packages, if all that you require is to use the Access Server mode. Of course if OTM management functionality, such as Station Administration, is required, then it may be necessary to order Set Expansion Packages.

For more information on the Access Server option, see "Access Server" on page 98.

# Chapter 2
# Common Services

## Services

### OTM Windows Navigator

OTM Windows Navigator and OTM Web Navigator are the two main graphical
user interfaces (GUIs) to OTM. These two GUIs provide access to most of the
OTM systems and services.

#### OTM Windows Navigator window

OTM Windows Navigator, which uses the Microsoft Windows interface, shows
the names and types of all systems available to the current user, and allows you to
group the systems into sites for more convenient access. An example of the OTM
Windows Navigator is shown in Figure 7.

**Figure 7** OTM Windows Navigator window
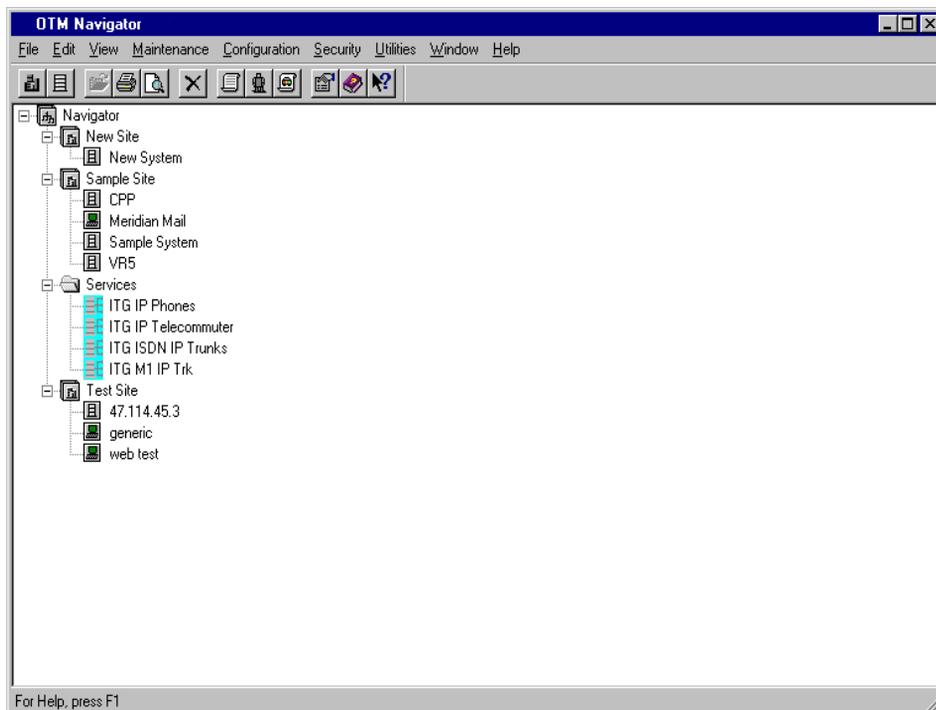


OTM Web Navigator, which uses the Web (http) interface, provides access to OTM's Web-based features and services. For more information about the OTM Web Navigator and the features and services to which it provides access, see

OTM Windows Navigator allows you to do the following:

- Display a "tree" structure for the Sites and Systems on the network that you manage. Access systems at a site by opening that site.
- Launch the System Window.
- Configure and administer OTM data: Sites and Systems, Users.
- Configure and administer OTM Services, such as Integrated Telephony Gateway.
- Launch utility applications such as the Scheduler, Corporate Directory, and Alarm Notification.
- Display the licensing and release information for all installed OTM applications.

• Print reports.

Figure 8 illustrates these functions.

**Figure 8**  OTM Windows Navigator functions
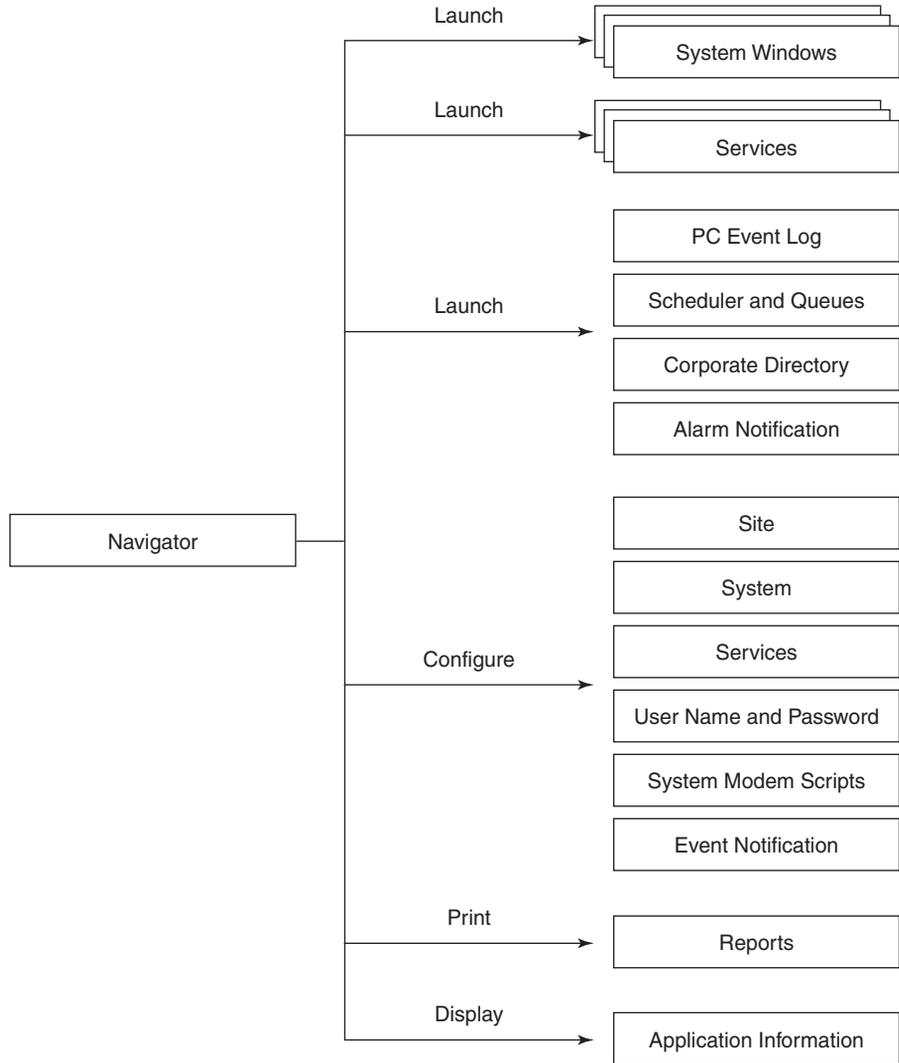


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## Using OTM Windows Navigator

OTM Windows Navigator allows you to access any Meridian 1 or Succession CSE 1000 system or other systems that your user ID privileges allow you to. In OTM Navigator, you open the site of interest to choose a system on which to work. Double-click a system to open its System window and launch any of the OTM applications to work on that system.

Open a site by double-clicking its name or clicking the "+" symbol next to the site. The "+" changes to a "-" when the site opens. An open site displays all systems at that site. Close a site by clicking the "-" symbol.

For Meridian 1 and Succession CSE 1000 systems, the components that make up the system appear in the system window. OTM displays a terminal emulation window for systems defined as "Generic."

For information about using the OTM Web Navigator, see "OTM Web Navigator" on page 229.

## Logging in and launching OTM Windows Navigator

In the Start menu, under Programs, select **OTM**. The login dialog appears. as shown in Figure 9. Enter your User ID and password. The OTM Windows Navigator window appears, as shown in Figure 10.

**Figure 9** Login dialog box
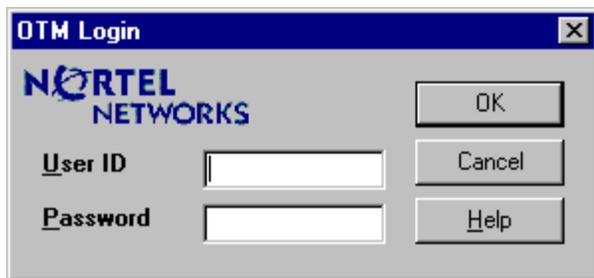


## OTM Navigator menus

Detailed descriptions of the functions of each command in the Navigator menus are available by clicking the context-sensitive Help button in the toolbar.

**Figure 10**   OTM Navigator window
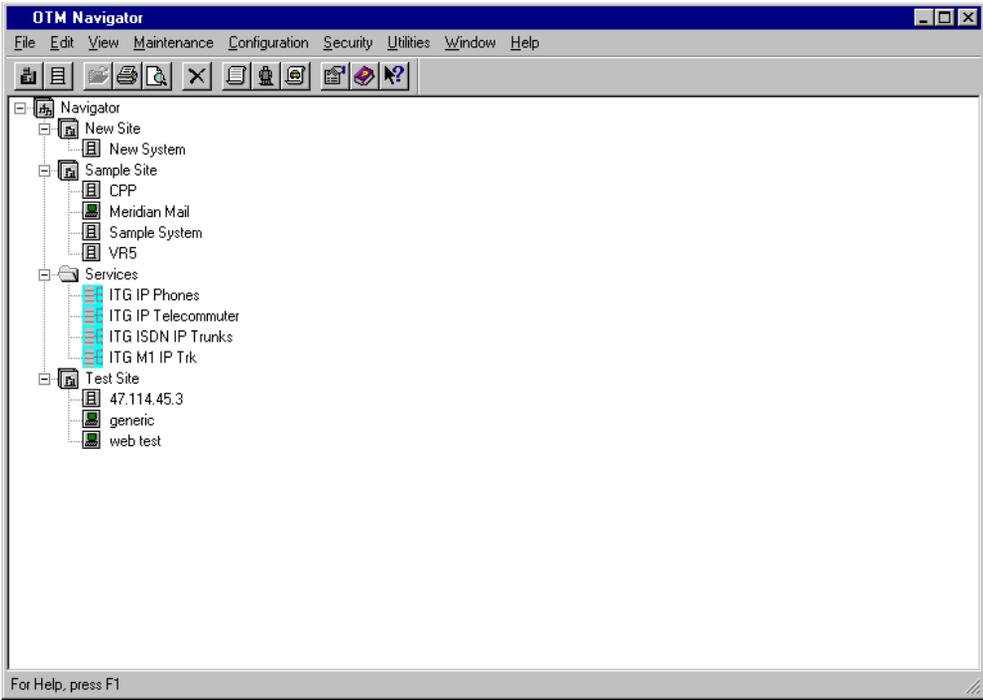


## Services Folder

The services folder contains applications and services available for sites and systems defined and accessible by the OTM PC.

## IP Telephony Gateway Applications

The following OTM applications provide configuration and maintenance for the ITG card.

- ITG IP Phones

   This application provides the configuration and maintenance of the ITG gateway card for the Meridian Internet Telephone, also referred to as the i2004 set. The i2004 set is a true Internet telephone when connected to a Meridian 1 through an IPE-to-ITG gateway card. The configuration of i2004 is through the Station Administration application in OTM. For more information refer to *Meridian Internet Telephony Gateway (ITG) Line 2.0/ i2004 Internet Telephone* (553-3001-204).

- ITG IP Telecommuter

   This application provides the configuration and maintenance of the ITG line card for IP Telecommuter. This application configures the IP Line gateway and the gatekeeper, but not the H.323 IP terminal or PC-based software client. For more information refer to *Meridian Internet Telephony Gateway (ITG) Line 1.0/IP Telecommuter* (553-3001-119).

- ITG ISDN IP Trunks

   This application configures and maintains the 24-port or 32-port ITG trunk card that resides in the IPE shelf of the Meridian 1. The card appears to the switch as a trunk card with ISDN Signaling Link (ISL) and D-channel signaling. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks. For more information refer to *Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (553-3001-202) and *Addendum to Meridian Internet Telephony Gateway (ITG) Trunk 2.0/ISDN Signaling Link (ISL)* (P0941974).

- ITG M1 IP Trunks

   This application configures and maintains the 8-port ITG (trunk) card that resides in the IPE shelf of a Meridian 1 system. The card has a 10/100 baseT connection to carry packetized voice and fax calls over IP data networks, and can serve as a toll bypass to the traditional PSTN. For more information refer to *Meridian Internet Telephony Gateway (ITG) Trunk 1.0/Basic Per-Trunk Signaling* (553-3001-116).

## Toolbar

The OTM Navigator toolbar includes several buttons that act as shortcuts to the commands available in the menus. The function of each button in the toolbar appears when you move the mouse over the button. See Figure 11.

**Figure 11**   Navigator Toolbar



## Status Bar

A Status Bar is located at the bottom of the window. To display or hide the Status Bar, use the Status Bar command in the View menu.

The Status Bar describes actions of the menu commands as you use the mouse to navigate through menus. It also describes the actions of the Toolbar buttons as you press them. When you choose a menu command, the Status Bar describes the progress of the command while it executes. For example, the Status Bar shows Printing text when you choose Print from the File menu.

## Working with the OTM System Window

From OTM Navigator, double-click the system on which you wish to work and the System window for that system appears. See Figure 12

**Figure 12** System window
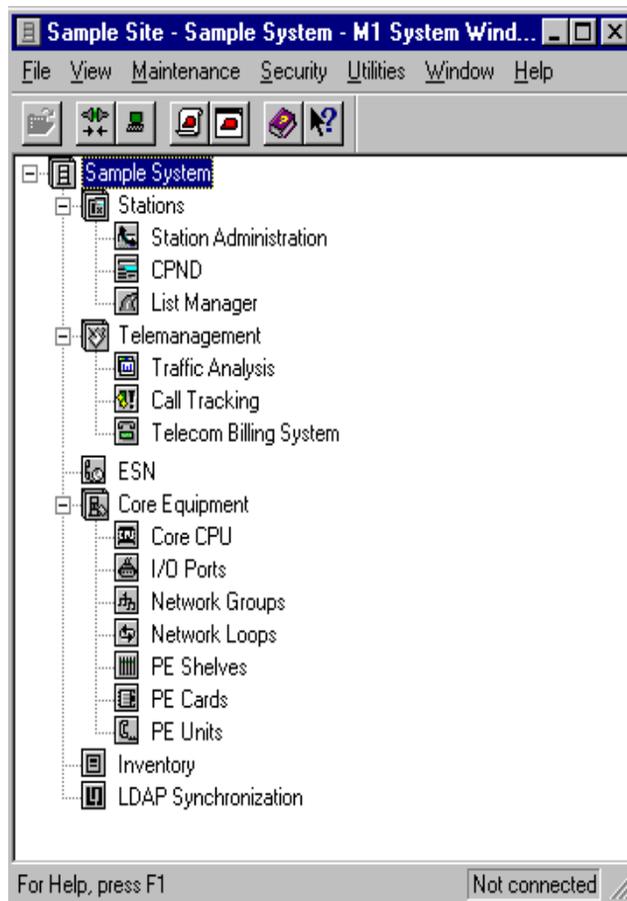


OTM System window allows you to launch the following applications (some of these applications are purchased separately):

- Alarm Banner
- Events
- System Terminal (Ethernet or PPP)
- System Terminal VT220 (serial)
- Station Administration
- Traffic Analysis
- Telecom Billing System

- Call Tracking
- ESN Analysis and Reporting Tool
- Maintenance Windows
- Inventory
- LDAP Synchronization
- General Cost Allocation System (GCAS)
- Consolidated Reporting System (CRS)

### OTM System Window menus

Detailed descriptions about the functions of each command in the OTM System window menus are available by clicking the context-sensitive Help button in the toolbar.

## Configuring Sites, Systems, and User accounts

This section provides instructions for changing the default login password and defining your own OTM sites, systems, and user accounts. Only OTM administrators have authorization to perform these tasks.

> **Caution:** To ensure security, you *must* change the default password. Follow the steps in this procedure to select a new password.

## Changing the default login password

The default login password (Admin) should be changed immediately after OTM is installed to ensure security. Follow these steps if you have not changed the password.

**1** If OTM is not already running, follow these steps to start OTM and login using the default login password:

- Choose Start > Programs > OTM Navigator.

The OTM login dialog box appears.

- Enter the default system administrator user ID and password. For security purposes, the password does not appear as you type it in the Password field.

User ID: **Admin**

Password: **Admin**

- Click OK.

After OTM accepts your ID and password, the OTM Navigator window opens.

**2**   In the Navigator window, choose Security > Change Password to open the Change Password dialog box.

**Figure 13**   Change Password dialog box
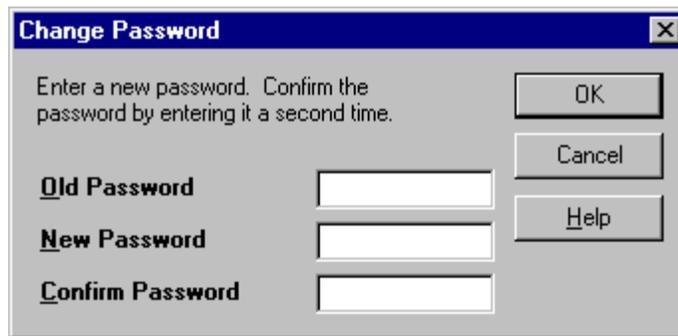


**3**   Enter the old password in the Old Password field.

**4**   Type a new password in the New Password field.

**5**   Retype the new password in the Confirm Password field.

**6**   Click OK.

**7**   A message box informs you that the password was successfully changed. Click OK.

**8**   OTM will require the new password the next time you log on.

## Site and system administration

The system administrator defines the sites and systems that appear in the Navigator window. Sites and systems must be defined before users can connect to a system and perform maintenance tasks. A site typically represents a physical location containing one or more systems. Systems are defined as Meridian 1 or Generic (non-Meridian 1 systems). Succession CSE 1000 systems are defined using the Meridian 1 system type. The Generic system configuration provides

access through VT220 Terminal Emulation to systems such as Meridian Mail. Meridian Passport and MSL-100 are examples of additional systems that you can add to OTM (refer to the appropriate chapter within this user guide for more information). The Navigator Configuration menu allows the system administrator to add, change, and delete sites and systems.

> ➡ **Note:** For more information about the Navigator and System windows, see "OTM Windows Navigator" on page 59.

### *Adding a site*

You can add any number of sites to the Navigator window.

**1** In the Navigator window, choose Configuration > Add Site. The New Site Properties dialog box appears (Figure 14).

**Figure 14** New Site Properties sheet

**2** Enter the Site Name and Short Name (these are required fields).

The Site Name appears in the Navigator tree. The Short Name is an abbreviated site name that displays in the Alarm Banner.

**3** In the Site Location box, fill in the site address information.

**4** In the Contact Information box, fill in the contact name and related information. Click Apply.

**5** To add a new system to this site:

   **a** Click Add System.

   **b** Follow the instructions for "Adding a system" on page 70.

**6** When you have finished entering Site information, click one of the following buttons to add the site to the Navigator tree:

- OK adds the site and closes the property sheet
- Cancel closes the dialog box without adding the site.
- Apply adds the site and leaves the property sheet open allowing you to add another system to this site (you may repeat step 5 to add another system)

### Adding a system

You can add as many systems (including non-Meridian 1 systems) to a site as you want. You must have administrator privileges to add a system.

**1** In the Navigator window, select the desired site.

> **Note:** If you are adding a new system from within the New Site Properties window, skip to step 3 in this procedure.

**2** Choose Configuration > Add System or use the right mouse button pop-up menu.

The Add System dialog box opens. See Figure 15.

**Figure 15**   Add System dialog box
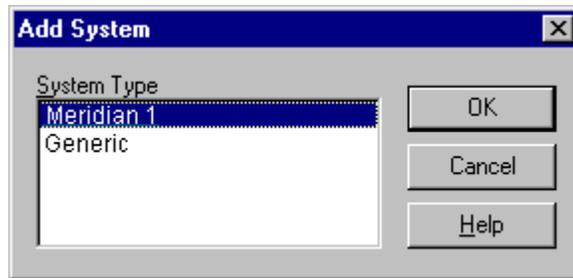


**3**   In the Add System dialog box, select the type of system you want to add. Click OK.

> → **Note:** For Succession CSE 1000 systems, select Meridian 1 as the system type.

> → **Note:** You may need to install additional software to enable other system types not listed in Figure 15. Follow the installation instructions included with your order.

The System Properties dialog box opens with the General tab displayed. See Figure 16.

**Figure 16**   System Properties dialog box—General tab



**4**   Enter the System Name and Short Name (required fields) and other information as needed. Click Apply.

You can make system location and contact information the same as site information by clicking the Same as Site check box.

→   **Note:** Bold fields indicate required information. To change a value, edit the field. Some fields may have a list of predefined choices. An arrow within a field indicates a drop-down list of choices. Press the arrow to select from the list. For more detailed information, refer to the online help.

**5** To add a new communications profile click the System Properties— Communications tab.

This tab defines the types of communications profiles that may be applied to system applications (one profile may be used for multiple applications).

**6** Click Add.

The Add Communications Profile dialog box appears. See Figure 17.

**Figure 17**   Add Communications Profile dialog box
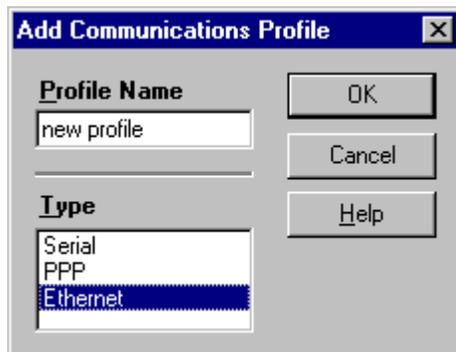


Select a communications type from the Type box and enter a Profile Name, then click OK to go back to the Communications tab. See Figure 18 through Figure 20.

**7** Fill in the communications information for the new profile:

- For Ethernet:
  - Select the appropriate network protocol.
  - Enter the IP address that you configured on the Meridian 1 or Succession CSE 1000 system.
  - Click Apply.

**Figure 18** System Properties—Communications tab—Ethernet Profile
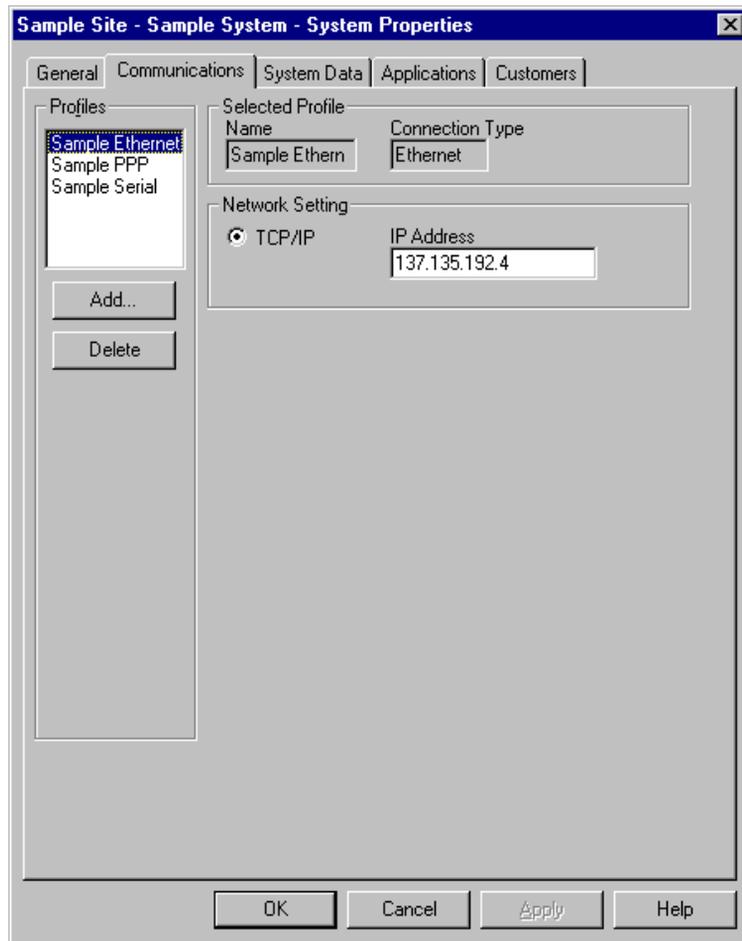
- For PPP:
  — Enter all modem parameters and dialup information.
  — Select PPP in the Modem Script text box.
  — Set the IP address to the local IP address, as configured on the Meridian 1 or Succession CSE 1000 system.
  — Click Apply.

**Figure 19**  System Properties—Communications tab—PPP Profile

- For Serial:
  - Enter all modem parameters and dialup information.
  - Select the appropriate value in the Modem Script drop-down box. This will usually be "None" unless a specific value is defined for your system.
  - Click Apply.

**Figure 20** System Properties—Communications tab—Serial Profile
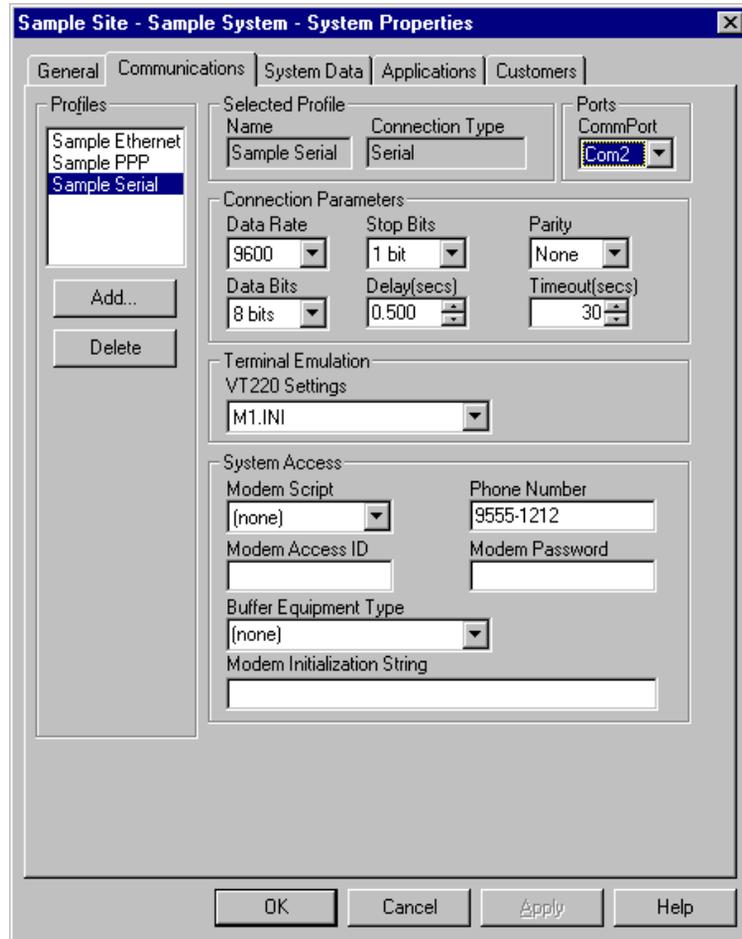
**8** Click the System Data tab.

The System Properties—System Data dialog box is displayed (Figure 21). Enter the machine/system type and release version for the system and enable or disable feature packages. For example, if your Meridian 1 is an Option 61C running X11 Release 25.25 software, use the drop down boxes to select 61C in the Machine field and 25 in the Release field, and enter 25 in the Issue field

**Figure 21**   System Properties dialog box—System Data tab

➡ **Note:** You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number here first to allow available applications to show up properly in the Applications Tab.

➡ **Note:** In the System Parameters box, the PDT Password edit box allows you to set the Level 2 password for the Problem Determination Tool (PDT). If you change this password, you must manually change the PDT password on the system so that they match.

If the system is an Option 11C survivable cabinet, click the Survivable Cabinet check box. Click the Select button to choose a main system, and select an available cabinet number from the Cabinet Number drop down list.

➡ **Note:** If the current system is an Option 11C main system, and you change the Machine field to a machine type different from 11C or the Release and Issue fields to an X11 release lower than 25.3, all of the survivable systems related to this main system will be removed.

For additional information on Option 11C survivable expansion cabinets, see *Option 11C Planning and Installation* (553-3021-210)

If the system is a Succession CSE 1000 Media Gateway, click the Survivable Cabinet check box. Click the Select button to choose a main Succession CSE 1000 system, and select an available cabinet number from the Cabinet Number drop down list.

➡ **Note:** If the current system is a Succession CSE 1000 Call Server, and you change the Machine field to a machine type different from 11C or the Release and Issue fields to an X11 release lower than 25.3, all of the survivable Media Gateways related to this Call Server will be removed.

For additional information on the Succession CSE 1000 Media Gateway, see *Succession Communication Server for Enterprise 1000 Planning and Installation* (553-3023-210).

**9** Click the Applications tab.

The System Properties dialog box—Applications tab is displayed (Figure 22).

This tab defines the OTM applications that will appear in the System window and the communications profile to be used with each application.

> **Note:** You must enable an application for it to be available in the System window.

**Figure 22** System Properties dialog box—Applications tab
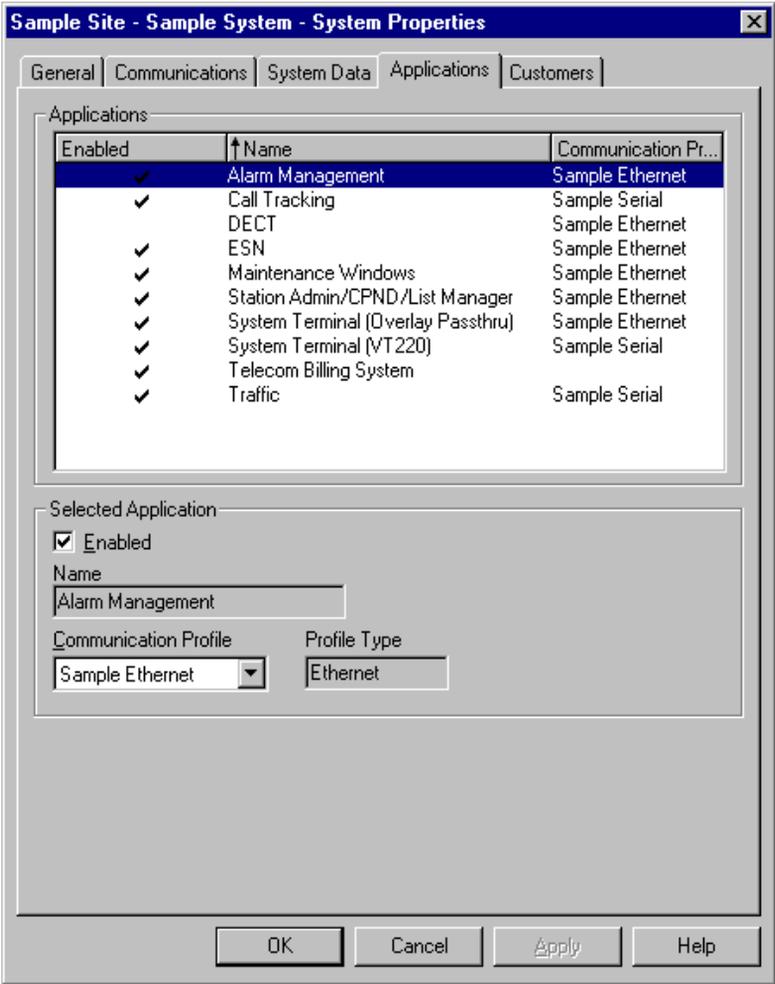
To enable an application:

**a**   Select the application in the Applications tab dialog box.

**b**   Select a Communications Profile from the drop-down list in the Selected Application box.

A check mark appears next to the application and the Enabled box is also checked.

To disable an application:

**a**   Select the application in the Applications tab dialog box.

**b**   In the Selected Application box, click the Enabled check box to remove the check mark.

> **→**   **Note:** If the system is an Option 11C survivable cabinet or a Succession CSE 1000 Media Gateway, the ESN and Station Admin/CPND/List Manager applications are not available.

**10**   Click the Customers tab

The System Properties—Customers tab dialog box is displayed (Figure 23).

**Figure 23**   System Properties—Customers tab
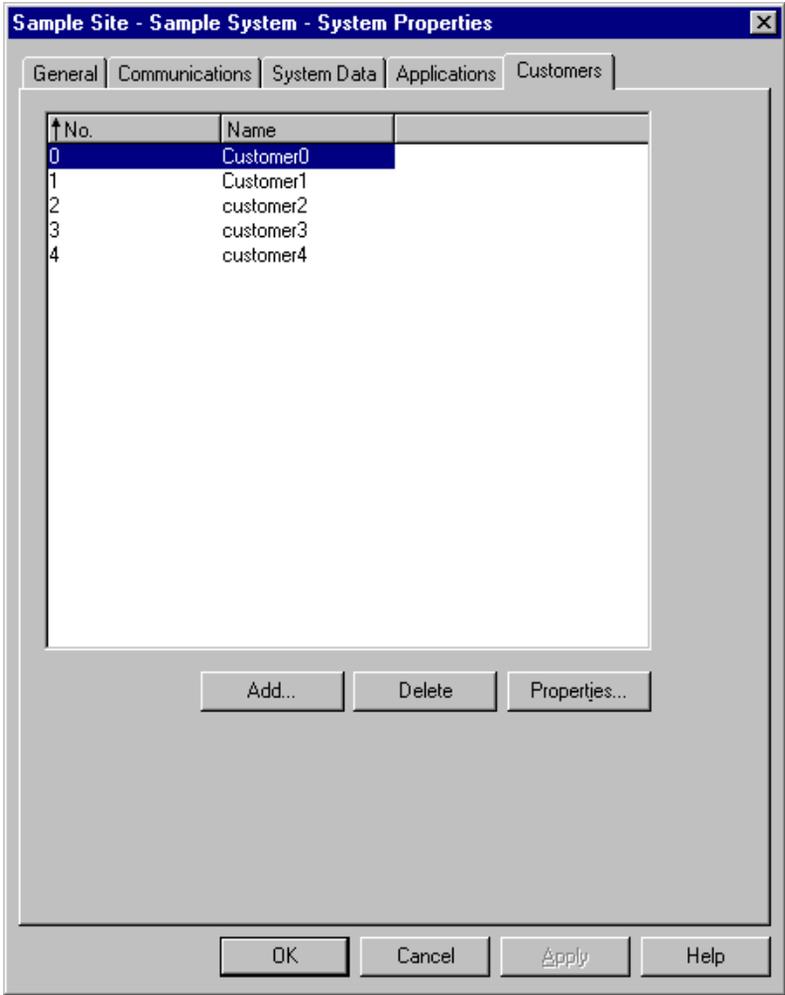


This tab lists the customers currently defined for this Meridian 1 or
Succession CSE 1000 system. You may add new customers, delete customers,
or review the properties of a selected customer. When you add a new
customer, you configure the Meridian 1 or Succession CSE 1000 features and
numbering plans that are available to the customer. This information is not
automatically updated on the Meridian 1 or Succession CSE 1000 system and
must be updated by using the LD 15 customer overlay. LD 15 is the overlay
interface which allows customers to configure their systems on the Meridian 1
and Succession CSE 1000. For more information on overlay interfaces, see
the System online Help.

> **Note:** Customer information is required for System Administration/ CPND and ESN applications.

**11** To add a customer:

   **a** Click Add in the System Properties—Customers tab.

   **b** Select a Customer number.

   **c** Click OK.

   The Customer Properties dialog box opens with the General tab displayed (Figure 24).

**Figure 24** Customer Properties dialog box—General tab

**d** Fill in the general information for the customer..

> **Note:** You can copy this data directly from an installed switch by scheduling an upload using File > Update System Data in the System window. Update System Data uses the communication profile for Station Administration. However, you should configure the Release number here first to allow available applications to show up properly in the Applications Tab.

> **Note:** Enter User information in the Scheduler System ID text box if you are using applications with scheduled activities, such as Station Administration/CPND, ESN, and Traffic Analysis.

**e** Click the Features tab

The Features dialog box opens (Figure 25).

**Figure 25**   Customer Properties dialog box—Features tab
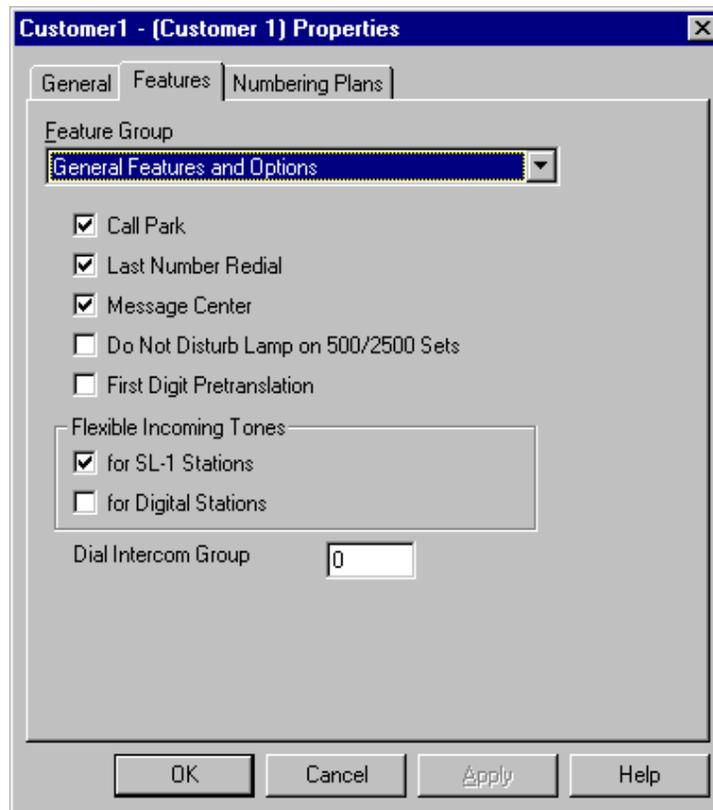


**f**   Fill in the feature information for the customer.

**g**   Click the Numbering Plans tab.

The Numbering Plans dialog box opens (Figure 26).

**Figure 26**   Customer property sheet, Numbering Plans tab



- **h** Fill in the numbering plan information for the customer.

**12** When you have finished entering the customer information, click one of the following buttons to save the information:

- OK to add the customer and return to the System properties sheet.
- Cancel closes the dialog box without adding the customer.
- Apply to add the customer and leave the Customer properties open so that you may add other information for this customer.

**13** To delete a customer, click Delete in the System Properties—Customers tab dialog box. A delete confirmation box opens. Click OK.

**14** To modify customer information, click the Properties button in the System Properties—Customers tab dialog box. The Customer Properties dialog box opens with the General tab displayed. Modify information in the appropriate tabs and click OK.

**15** In the System Properties dialog box, click one of the following buttons:

- OK adds the system and closes the dialog box.
- Cancel closes the dialog box without adding the system.
- Apply adds the system and leaves the dialog box open.
- Help provides online help.

The new system is added to the tree under the selected site.

*Changing site information*

You can change any information about a site, including the site name, address, and contact. You must have administrator privileges to change site information.

**1** In the Navigator window, select the desired site.

**2** Choose File > Properties or use the right mouse button pop-up menu. The Site Properties dialog box opens to the General tab.

**3** Bold fields indicate required information. To change a value, edit the field. Consult the online help for details on any field.

**4** To add a new system to this site, click Add System, and fill in information for the new system. See "Adding a system" on page 70.

**5** Click one of the following buttons:

- OK saves the information and closes the dialog box.
- Cancel closes the dialog box without saving.
- Apply saves the information and leaves the dialog box open.
- Help provides online help.

*Changing system information*

You can change any information about a system or its communications connection. You must have Administrator privileges to change any system information.

**1** In the Navigator window, select the desired system.

**2** Choose File > Properties or use the right mouse button pop-up menu.

The System Properties window opens.

**3** Select the tab containing the information you wish to change.

Bold fields indicate required information. To change a value, edit the field or select a different item from a field popup menu. An arrow within a field indicates a drop-down list of choices. Press the arrow to select from the list. Consult the online help for details on any field.

**4** Click one of the following buttons:

- OK saves the information and closes the dialog box.
- Cancel closes the dialog box without saving.
- Apply saves the information and leaves the dialog box open.
- Help provides online help.

## *Deleting a site or system*

You must have administrator privileges to delete a site or system from the Navigator window. A record of the deletion is stored in the PC event file.

> ⚠ **Warning:** Deleting a site also deletes all of its systems.

**1** In the Navigator window, select the site or system.

To delete all sites and systems, select the Sites icon at the top of the tree.

**2** Choose Edit > Delete.

**3** Click OK to confirm.

## *Changing your password*

You can change your password at any time. If your password has expired, OTM prompts you to enter a new password when you attempt to log on. Refer to .

## Configuring OTM Windows users

OTM allows you to create User Templates to speed the process of adding users accessing the OTM Windows Navigator. A template is a form that you fill in to define most aspects of a certain kind of user, such as their level of access to sites and systems and automatic connection to particular systems. You can create as many user templates as you need. You will assign a template to individual users when you add users to the OTM database.

> →  **Note:** Access to the OTM Web Services is provided through Windows NT. Refer to "Web Services" on page 229

### *Creating a user template*

**1** In the Navigator window, choose Security > OTM Users to display the OTM Users window (Figure 27).

**Figure 27** OTM Users window



**2** Choose Configuration > User Templates. The User Templates window appears (Figure 28).

**Figure 28** User Templates window
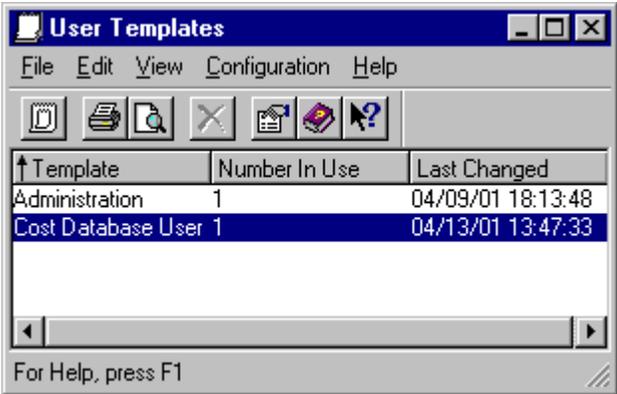


**3** Choose Configuration > Add Template. The New Template Properties dialog box appears (Figure 29).

**Figure 29** New Template Properties dialog box
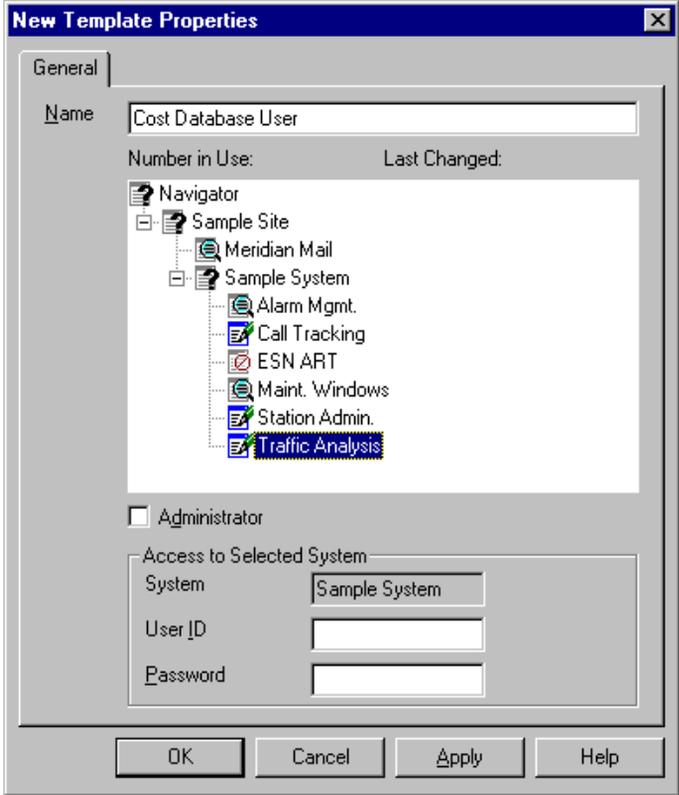
**4** Enter a name for this class of user.

For each site, system, and application in the tree, use the right mouse button to assign user privileges (Read-write, Read-only, or No Access). Each click of the right mouse button causes the access privileges and corresponding icon to change. See Figure 4. Select the Administrator box, if appropriate. The site and system icons change to reflect the access level.

> →  **Note:** Access privileges defined for sites or systems at higher levels in the tree structure are applied to all subordinate items.

**Table 4**   Access privilege icons

| Icon | Explanation |
|------|-------------|
| | Read and write access |
| | Read only access |
| | No access |

**5** Enter values in the User ID and Password text boxes to allow this class of user to connect to this system without having to enter a User ID and Password each time you want to connect.

**6** Click OK. Close the User Template window.

*Adding a user*

**1** In the OTM Users window, choose Configuration > Add User.

The New User dialog box appears (Figure 30).

**Figure 30**   New User dialog box



**2**   Enter a User ID

**3**   From the Access Template drop-down list, select the template that you will use as the basis for this user definition.

**4**   Fill in other data as required.

**5**   Click Apply. OTM prompts you to enter a password.

**6**   Click the Change Password button to change the OTM login password for this user only.

**7**   Click OK. The new user appears in the OTM User window. Close the OTM User window.

*Deleting a user template*

You can delete a user template only after all associated users of that template are either deleted or re-assigned to another template.

*Restricting user access permission levels*

You can restrict a user from having access to sites, systems and applications. However, when a user is defined as being restricted from any access to all sites, systems and applications, i.e., the Navigator, the user will, in fact, be able to see all the sites and systems in the Navigator tree and have read-only access to their properties. If a restricted user tries to open a system they will see a System Window with no applications visible.

*Sites and systems displayed in user templates*

When adding or modifying a user template, only systems that have applications enabled are presented. If no applications are enabled for the systems within a given site, the site and system(s) will not appear in the Template Properties.

# Maintenance tasks

The following guidelines and tables indicate suggested scheduling of various OTM operating procedures.

## Telecom Billing System

Please refer to *Using Optivity Telephony Manager Telemanagement Applications (553-3001-331)* for complete details of the schedules for data collection, database maintenance, and data management. The database maintenance schedules outlined in this chapter should also be used for OTM Corporate Directories.

## Call Tracking

Table 5 provides guidelines for scheduling Call Tracking maintenance tasks.

**Table 5**   Call Tracking maintenance tasks

| Maintenance Task | Schedule |
|---|---|
| Data collection (real time) | Continuously |
| Data collection (from a file) | Hourly |
| Review Alarm Log | No set schedule. review as needed |

**Table 5**   Call Tracking maintenance tasks (continued)

| Maintenance Task | Schedule |
|---|---|
| Backup and archive Call Tracking database | The main Call Tracking database is part of the site/system data files. This will be backed up/archived with the other databases. |
| Restore Call Tracking database | As necessary |

## Traffic Analysis

Table 6 provides guidelines for scheduling Traffic Analysis maintenance tasks.

**Table 6**   Traffic Analysis maintenance tasks

| Maintenance Task | Schedule |
|---|---|
| Data collection (through direct connection to the Meridian 1 or Succession CSE 1000 system) | Hourly |
| Data collection (through buffer box or DBA) | Daily |
| Backup/Archive Traffic database | Archive the Traffic database monthly. Remember to purge old or unneeded data from the working directory during this Archive procedure |
| Restore Traffic database | As necessary |

## OTM Site/System data

Table 7 provides guidelines for scheduling OTM Site/System data maintenance tasks.

**Table 7**   OTM Site/ System data maintenance tasks

| Maintenance Task | Schedule |
|---|---|
| Backup Employee database | Weekly |
| Backup all other databases (OTM Corporate Directories) for site/system: | Monthly |
| Restore databases for site/system | As needed |
| Since the Employee database is usually edited more frequently, you should back up the database on a weekly basis instead of on a monthly basis (as you would with the other OTM databases). | |

### Compact and Repair Utility

The Compact and Repair Utility is usually not run on a set schedule. This utility is used to help repair and compact MS Access database files in OTM that may be corrupted or have taken too much disk space. You should therefore run this utility at any time you have deleted or purged a large number of records from one of the system databases. For example, if you deleted a large number of call records from the Call Database, or if you made major edits to the Employee Database (especially deletions), then you should run the Compact and Repair utility databases. This will optimize your disk space an repair any possible flaws in these MS Access database files.

# Regional Settings

Currency Settings, located under Regional Settings, includes information about local and alternate currencies. The Optivity Telephony Manager (OTM) applications use this information to display costs.

### Local Currency

The Local Currency tab contains information about the local currency that is used to display costs in the Optivity Telephony Manager (OTM) applications. This is useful in situations where a single system manages and processes data from many countries and you wish to report costs in different currencies across different systems. Each system could represent sites in different countries. Their costs could then be expressed in their respective local currency.

Currency information, by default, is derived from the client PC's regional settings. However, there are cases where systems are required to operate with different currencies. In order to facilitate this, OTM allows you to define currency settings for any system as required. In addition, default settings can be configured from the OTM Navigator main window, which can also be used by the OTM systems. These default settings are used by any system that does not have its own settings defined. This is useful in an installation where the majority of systems are operating in a common currency and only a few are operating in a different currency. In this case, you can set the default currency settings for the majority of the systems, and you will only need to configure the exceptions.

To define the local currency, select Configuration > OTM Regional Settings in either the OTM Navigator window or the system window. Select from the following options.

**Use System Setting (Navigator level only):** Turn on this check box to have OTM use the currency settings defined in the client PC's Windows Regional Settings. Notice that the remaining fields will be updated with the Windows Regional Settings currency information and will appear grayed (read-only). You will not be able to edit these fields if you select this option. Since this option is only available at the Navigator level, you can only select this option for the Navigator main window. By default, this option will be enabled (the check box will be turned on).

**Use Default Setting (System level only):** Turn on this check box to have the system use the default currency settings that you defined in the Navigator window. Notice that the remaining fields will be updated with this default (or shared) currency information and will appear grayed (read-only). You will not be able to edit these fields if you select this option. This option is only available from a system window.

Enter the local currency values in the following fields.

**Currency Name:** In this field, enter a descriptive name of this currency (e.g., US Dollars).

**Appearance Samples:** These read-only fields will display samples of the costs based on the selected currency settings (e.g., $123,456.78 and ($123,456.78)).

**Currency Symbol:** In this field, enter the symbol for this currency (e.g., $). This will appear next to the cost values on report summaries. If you keyboard does not support the currency symbol that you wish to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter: 0128 on your numeric keypad. The Euro dollar symbol will appear. If a black square appears instead of this symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

**Position of Currency Symbol:** From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol will appear with respect to the value. For example, *1.1 indicates that the currency symbol will appear before the values (e.g., $1.00).

**Negative Number Format:** From this drop-down list box, select how negative values will be displayed. For example, (*1.1) indicates that negative numbers will appear with parentheses around them (e.g., ($1.00)).

**Decimal Symbol:** In this field, enter the symbol that will be used for the decimal (e.g., for the amount $1,000.00, enter: **.**).

**Number of Digits after Decimal:** In this field, enter the total number of digits that will appear after the decimal (e.g., for the amount $1,000.00, enter: 2).

**Digit Grouping Symbol:** In this field, enter the symbol that will be used to separate digit groups when displaying currency values (e.g., for the amount $1,000.00, enter ,).

**Number of Digits in Group:** In this field, enter the number of digits that will be separated by the digit grouping symbol (e.g., for the amount $1,000.00, enter: **3**).

Once you have entered these settings, click Apply to save them and remain in this tab. Click OK to save these settings and exit to the previous window.

## Alternate Currency

The Alternate Currency tab contains information about any alternate currencies used when displaying costs in OTM reporting. This is useful in situations where you wish to have reports display monetary values in two separate currencies. For example, European countries could display summary costs in their local currencies and in the new Euro currency.

You can either define the alternate currency settings for specific systems, or have them use the default settings defined in the Navigator level. The alternate currency defined in the Navigator window will be used as the default alternate currency. Any systems that do not have alternate currency settings defined for them will use the default currency settings defined at the Navigator level. As well, you can specify that a system should use the default currency settings.

To define the alternate currency, click Configuration | OTM Regional Settings from either the OTM Navigator window or the system window. Select from the following options.

**Use Default Setting (System level only):** Turn on this check box to have the system use the default alternate currency settings you entered in the Navigator window. Notice that the remaining fields will be updated with this currency information and will appear grayed (read-only). You will not be able to edit these fields if you select this option. This option is only available from a system window.

**Enable Alternate Currency (Navigator and System level):** Turn on this check box to enable alternate currency settings to be displayed on system billing reports. If you disable this option (i.e., turn off this check box), the remaining fields will appear grayed (read-only) and the alternate currency will not be included in your reports.

Enter the alternate currency values in the following fields.

**Currency Name:** In this field, enter a descriptive name of this currency (e.g., US Dollars).

**Appearance Samples:** These read-only fields will display samples of the costs based on the selected currency settings (e.g., $123,456.78 and ($123,456.78)).

**Currency Symbol:** In this field, enter the symbol for this currency (e.g., **$**). This will appear next to the cost values on report summaries. If you keyboard does not support the currency symbol that you wish to use, then you may need to enter it using alternate key codes. For example, to enter the symbol for the Euro dollar, press and hold the [Alt] key and enter: 0128 on your numeric keypad. The Euro dollar symbol will appear. If a black square appears instead of this symbol, then your system font does not support this character. It should, however, still appear correctly on the printed report.

**Position of Currency Symbol:** From this drop-down list box, select how the currency symbol will appear next to cost values. The "*" represents where the symbol will appear with respect to the value. For example, *1.1 indicates that the currency symbol will appear before the values (e.g., $1.00).

**Negative Number Format:** From this drop-down list box, select how negative values will be displayed. For example, (*1.1) indicates that negative numbers will appear with parentheses around them (e.g., ($1.00)).

**Decimal Symbol:** In this field, enter the symbol that will be used for the decimal (e.g., for the amount $1,000.00, enter: .).

**Number of Digits after Decimal:** In this field, enter the total number of digits that will appear after the decimal (e.g., for the amount $1,000.00, enter: 2).

**Digit Grouping Symbol:** In this field, enter the symbol that will be used to separate digit groups when displaying currency values (e.g., for the amount $1,000.00, enter **,**).

**Number of Digits in Group:** In this field, enter the number of digits that will be separated by the digit grouping symbol (e.g., for the amount $1,000.00, enter: 3).

**Currency Exchange Rate:** In this field, enter the exchange rate for this currency against the local currency. For example, if the local currency is the U.S. dollar (US$) and the alternate currency is the Canadian dollar (Can$) and the exchange rate is 1.49, then enter: 1.49 in this field. This means that US$1.00 is equivalent to Can$1.49.

Once you have entered these settings, click Apply to save them and remain in this tab. Click OK to save these settings and exit to the previous window.

## Access Server

The Access Server provides a command line interface (CLI) for remote access to the OTM server. From a remote terminal, you can dial in through a modem or a direct serial connection to access the OTM server.

> **Caution:** Access Server must be run under the Windows NT or Windows 2000 Operating System, as it will not function properly under any other operating system.

Once successfully logged in, you can:

- change Windows NT user passwords,
- connect to different sites and systems as configured in Virtual Terminal Service. See "OTM Web Virtual Terminal Service" on page 261.

> **Note:** CLI needs a dedicated modem. CLI cannot share the modem with Win NT RAS or other services.

> **Caution:** If you are not using Access Server, be certain that the "Auto Launch" check box is unchecked. See Figure 32. This action prevents unnecessarily tying up a COM port on the server.

## CLI status window

The CLI launches at OTM Server startup. The status window displays CLI status messages.

To view the CLI status window:

→ From the Start menu, choose Programs > Optivity Telephony Manager > Command Line Interface

   The CLI status window opens (Figure 31).

The following status messages may appear in the CLI window:

- Waiting for incoming call
- Answer call and authentication process in process

**Figure 31**   CLI status window
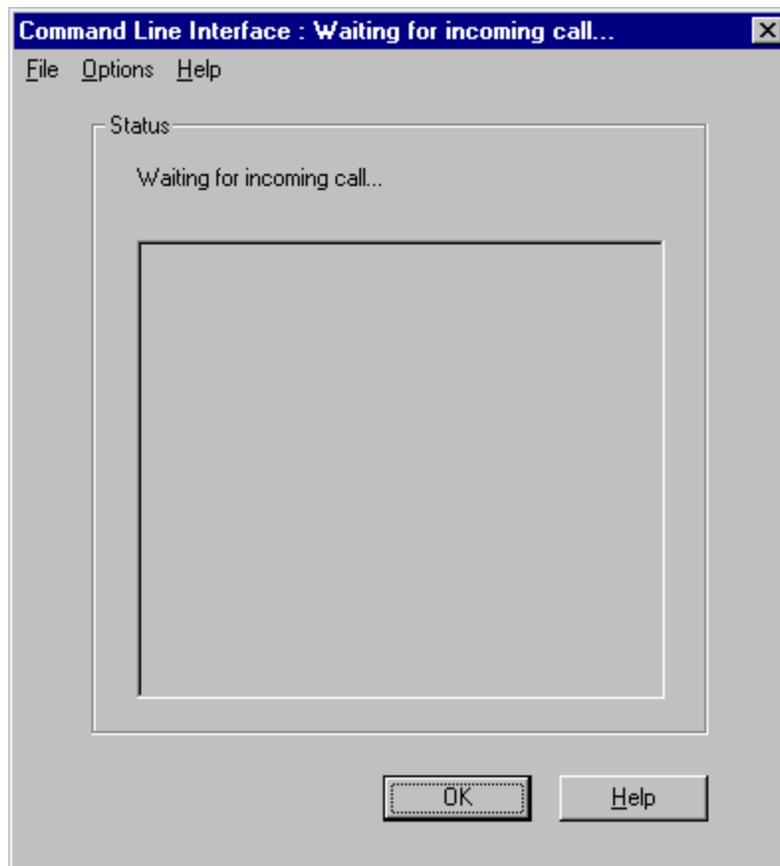


### CLI configuration

The CLI configuration dialog box is used to define the following OTM Server COM port settings:

**Port** - list of COM ports on the OTM Server
**Data Speed** of COM port - 4800, 9600, 19200, 38400
**Data Bits** - 5, 6, 7, 8 bits
**Parity** - None, Odd, Even Mark, Space
**Stop Bits** - 1, 1.2, 2 bits
**Session timeout (secs)**: if current session is idle for the specified time, CLI disconnects the call.

To open the CLI configuration dialog box:

→ Select Options > Configure... in the CLI status window

The CLI configuration dialog box opens (Figure 32).

**Figure 32**   CLI configuration dialog box
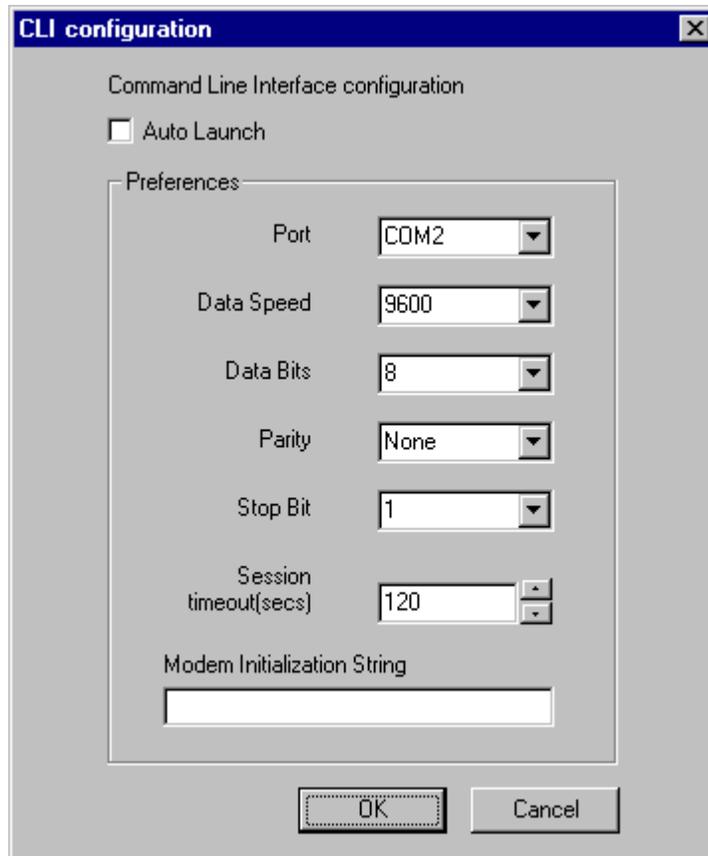


## CLI Log File dialog box

The CLI Log File dialog box allows you to turn the log option on or off and specify the log file location (Figure 33). The Log File logs all activities: user login, commands, and so forth.

To open the CLI Log File dialog box:

➔ Select Options > Log File... in the CLI status window

**Figure 33**   CLI Log File dialog box
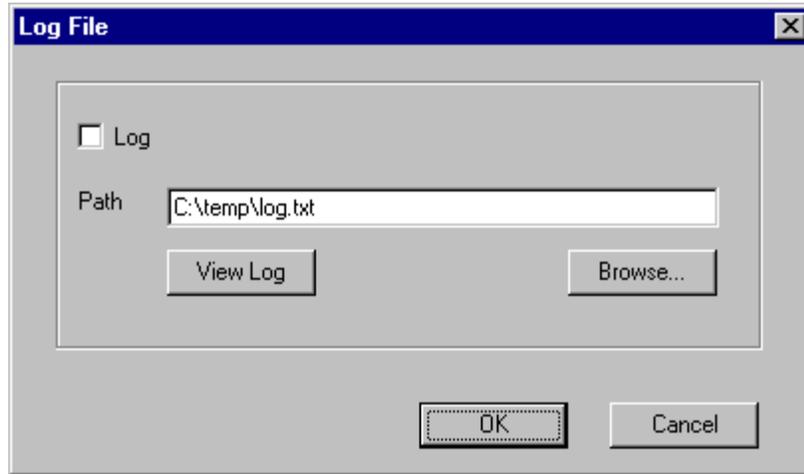


## CLI Operation

From a PC other than the OTM Server, dial into CLI on the OTM Server using HyperTerminal or an equivalent Telnet application. Enter an OTM userid and password to log in. Once logged in the following commands are available:

- Help or ?- lists all commands
- Status - list all VTS ports associated with configured systems
- Connect - connect to a system
- Exit - disconnect

Figure 34 and Figure 35 show the CLI commands.

**Figure 34**   CLI Help commands

```
 direct - HyperTerminal
File  Edit  View  Call  Transfer  Help

at
OK
atdt4931102
BUSY
atdt4931227
CONNECT 9600/ARQ/V32/LAPM/V42BIS

Login: admin
Password:
Success Authenticate!
Type '?' or 'help' for list of commands
CLI> ?
? - List all commands.
CHG PWD - Change password.
CONNECT <port #> - Connect to specified port.
EXIT - Exit current session.
HELP - List all commands.
STATUS VTS - List all available VTS ports.
CLI>
```

**Figure 35**   CLI Status and Connect commands

```
CLI> status vts

5 : Sample Site - Sample System - [status : Available]
6 : Test Site - TestSys3 - [status : Available]
7 : Test Site - TestSys4 - [status : Available]
8 : Test Site - Test System1 - [status : Available]
9 : Test Site - Test System1 - [status : Available]

CLI> connect 9

Done!


TTY 15 SCH  i7:i9
OVL111 IDLE   0
```

## Communication

Both the Terminal Server (OTM Server) and Terminal Client (Remote PC) can detect when their TCP socket connection is lost. In that case, they will log the error and/or notify the user, and reset themselves for another connection.

The base port number determines the range of socket ports used to communicate with the Terminal Client. Under normal conditions this should be left as-is, and should not be changed unless the default port conflicts with another network application.

By default, the Terminal Server and Terminal Client communicate using network ports 4789 through 5045 (4789 to send connection requests, 4790-5045 for up to 256 terminal sessions). The number of ports actually used depends on the number of virtual ports configured.

To change the range of port numbers:

**1** Choose Programs > Optivity Telephony Manager > Terminal Server from the Start menu.

The Terminal Server dialog box opens (Figure 36).

**Figure 36** Terminal Server dialog box
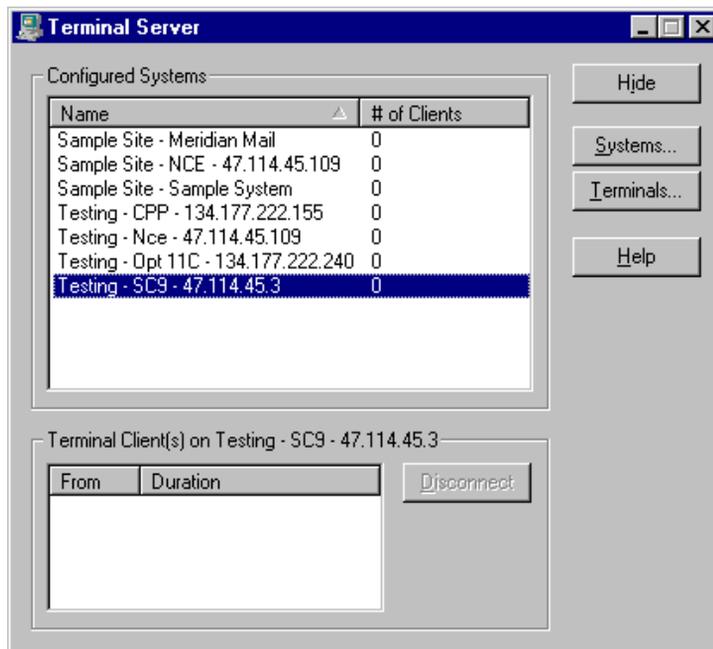


**2** Click the Terminals... button.

The Terminal Properties dialog box opens (Figure 37).

**Figure 37**    Terminal Properties Base Port parameter
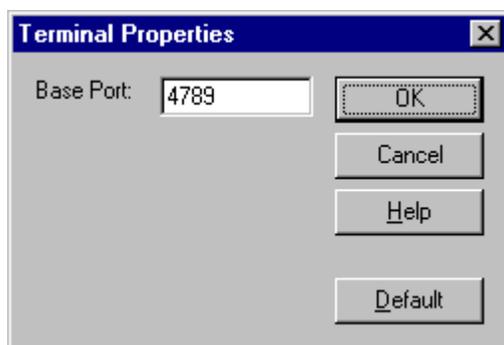


**3**    Enter the new Base Port number and click the OK button.

**4**    Edit the HTML page containing the applet. Make sure the applet's Base Port parameter matches the one in Terminal Server (default = 4789).

### Encryption

Data is encrypted, so that someone monitoring the network traffic does not see plain ASCII data (which may contain user login, password, or other sensitive information).

Every packet sent between the Terminal Server and the Terminal Client is 65 bytes, and contains data that is masked with a key. This ensures that data isn't easily readable, while keeping the overhead low for constant character I/O.

Before sending a packet, the application picks a random location in a 256-byte key (known only to the server and the client) and uses the subsequent bytes to mask the character data. In essence, every packet is masked with one of 256 possible keys.

## Directory Services

The OTM Directory feature allows you to input end user data through the OTM applications, such as Station Administration and Telecom Billing System, directly into the customer's server. OTM Directory contains employee and organization details, with a number of fields that are common to both Directory and Station Administration.

OTM Directory provides a number of tools to configure your company structure and create an employee database:

- an Organization Hierarchy editor to define your business organization
- an Employee Selector to manage user data
- an External Parties editor to configure external party records
- a Roles/Project editor to create role and project groups within the organization.
- synchronization utilities to update Station Administration with all the changes made to Directory data.

> **Note:** The data is scheduled for synchronization from the Utilities menu in the Navigator window. See "LDAP Synchronization" on page 206.

## Access OTM Directory

OTM Directory is accessed from within the Station Administration System window using one of the following methods:

- Choose Employee Selector, External Parties, Roles/Project, or Organizational Hierarchy in the View menu.
- Double-click on an individual station in the Station Administration System window, and click the Directory button in the station graphic. The Employee Selector window opens as shown in Figure 38.

**Figure 38**   Employee Selector window
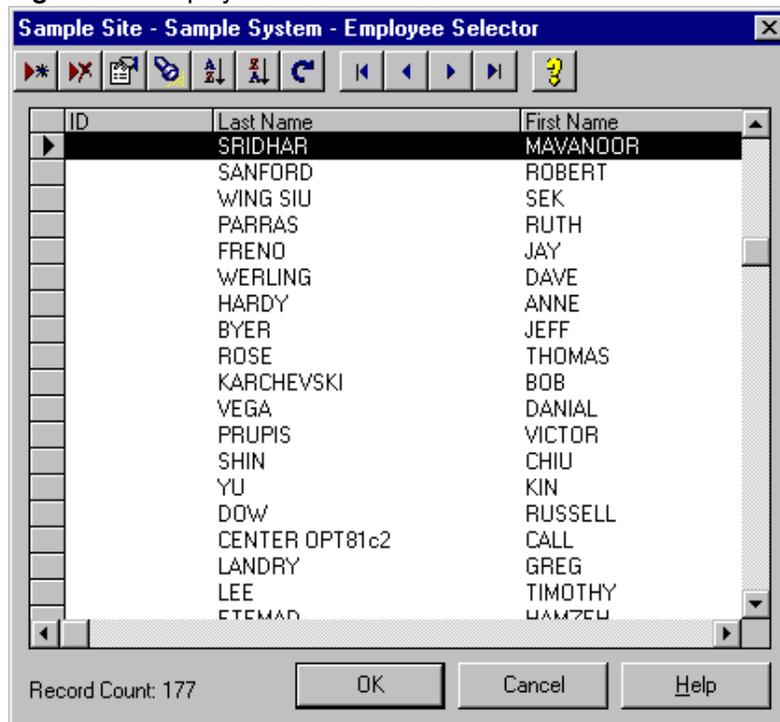


- You may also access the OTM Directory from within the Telecom Billing System (TBS) Edit menu. For details, see *Telecom Billing System* in *Using Optivity Telephony Manager Telemanagement Applications*.

> **Note:** The links between Station Administration and OTM Directory are described in more detail in "Station Administration links to the OTM Directory" on page 368.

### Organizational Hierarchy Editor

The Organizational Hierarchy Editor allows you to create and edit the structure of your company. You build an organization tree representing the different organization nodes in your corporation such as, divisions, departments, projects, and project teams. You can place each organization node at its level in the hierarchy. After defining an organization node in the structure, you can assign employees to the node using the Org. Path field in the Employee Editor.

*Access the Organizational Hierarchy Editor*

To access the Organizational Hierarchy Editor, select Organizational Hierarchy under the View menu in the System window.

The Organizational Hierarchy window is where you define the structure of your organization. The left side of the window shows the organization hierarchy tree. The right side of the window is the Employee Selector providing a list of employees related to the selected organization node.

**Figure 39**   Organizational Hierarchy Editor, Levels Tab
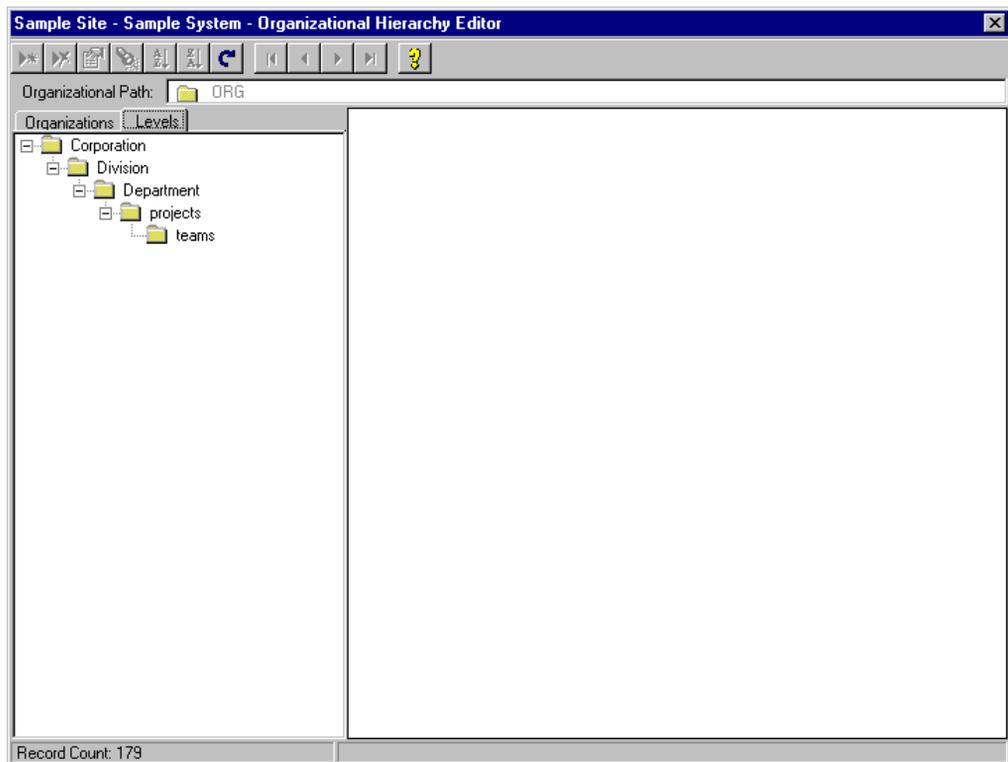
*Define organization levels*

Before you begin adding organization nodes to the tree, define the levels of the organizations in your company. The levels represent the structure of your company. For example, the company can have divisions, departments within divisions, and projects within departments. You can define a maximum of 20 different levels.

**1**   Click the Levels tab. The tree displays the levels defined for the structure. If you have not yet entered the structure for your organization, the window contains a default menu tree with the Organization, Division and Department levels.

**2**   Click the level where you want to define a new level.

**3**   Right mouse click to open the Add New Level dialog.

**4**   Type the name of the new level and click OK.

To delete a level, select the entry and click the Delete key on the toolbar.

As shown in the example in Figure 39, the levels are defined as:

- corporation
- divisions within the corporation.
- departments within the division
- projects within the department
- employee teams within the project.

*Add an organization node*

To add an organization node:

> →   **Note:** You must define an organization level before you can add an organization node at that level. See "Define organization levels" on page 109.

**1**   Select the Organizations tab (Figure 40).

**2** Select the name of the organization in the tree where you want to add a new organization node. For example, if adding a new department to a division, select the name of the division.

**3** Click the right mouse button and select Add New Node or click the Add icon (the toolbar button with the plus sign). The new node appears in the tree. For example, if adding a new division, Division appears in the tree.

**4** Click the right mouse button and select Rename to give the new node a name. Type over the name.

**Figure 40**   Organizational Hierarchy Editor, Organizations Tab
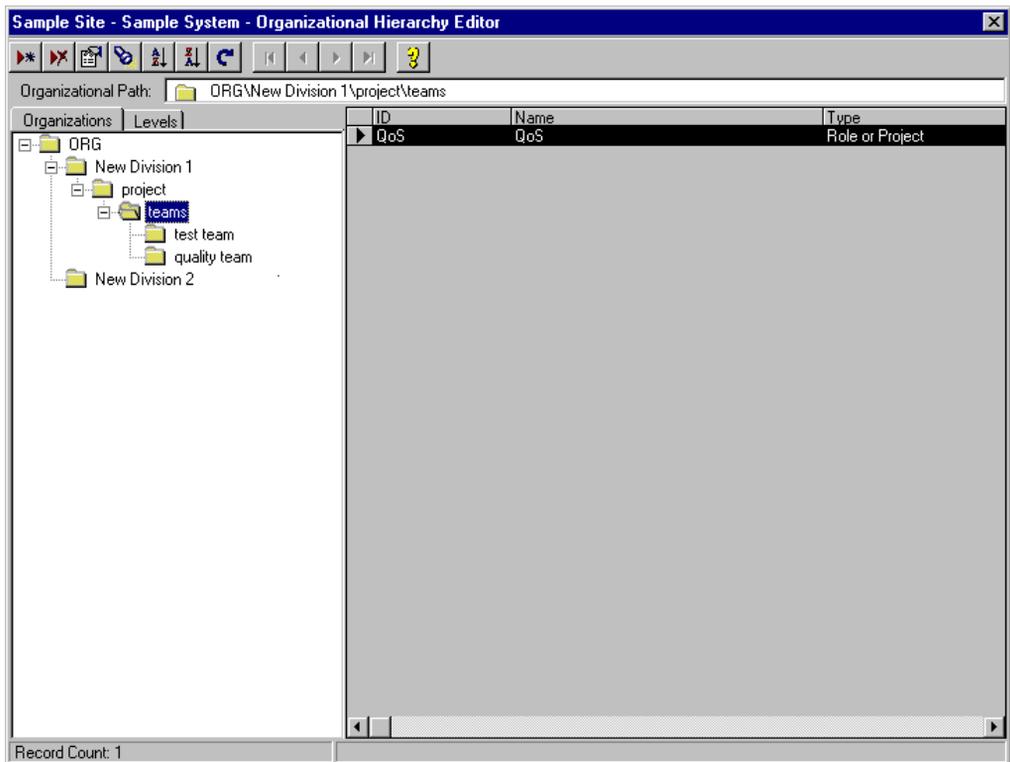


*Delete an organization node*

To delete an organization node:

**1** Select the organization node in the tree.

**2**    Click the Delete button (toolbar button with the X). The node disappears from the tree.

### *Employee Selector Window*

The right pane of the Organizational Hierarchy window consists of the Employee Selector window.

> **Note:** The Employee Selector window is also displayed as an individual window by clicking on the Directory button in the Station Set window.

This window displays the list of current Employee entities in the Directory database, and allows you to create a new employee entity, add it to your organizational node, and to edit the details of an existing entity.

The icons in the Organization Hierarchy toolbar allow you to edit the Employee records listed or create new Employee, Roles/Projects or External Parties records to be added to your organizational node. As they appear from left to right, they allow you to:

- **Add new record**: select a record type (Employee, External Party, Role/Project) from the Entity Selector. You can then add a new Employee record to the database (which opens the Employee Editor), or add a new Roles/Projects record (which opens the Roles/Projects Editor) or a new External Party record (which opens the External Parties Editor).
- **Delete record**: delete the selected record from the database. See "Delete employees" on page 112
- **Edit Record**: edit the selected record. This opens the Employee Editor window, in which you can edit the Employee details
- **Find**: search for a specific record. Enter a text string and select a field from 'ID', 'Entity Type' or 'Name' by which to search the database. See "Search for an employee" on page 113
- **Sort Ascending**: sort the employee records in ascending order. See "Sort the employee list" on page 114
- **Sort Descending**: sort the employee records in descending order.
- **Refresh View**: refresh the list following changes

- **Move First/Previous/Next/Last**: move the cursor to the top of the list, to the previous entity to the one selected, to the next entity to the one selected, or to the end of the list.

- **Help**: consult the On-Line Help system.

### Add an employee to an organization node

To add an employee to an organization node:

**1** Select the organization node in the tree.

**2** Click the Add button (toolbar button with the plus sign). The Entity Type Selector window opens.

**3** You have the option to add a new Employee, External Party or Role/Project. When you select a type, the Editor for that type is displayed. In this case, select Employee.

**4** The Employee Selector window opens. Select the employee you want to assign to the selected organization node.

### Edit employee data

To edit employee data:

**1** Select the organization node in the tree. The names of the employees appear in the Employee Selector window.

**2** Select the name of the employee you want to edit.

**3** Click the Edit button (toolbar button with the pencil). The Employee Editor opens.

### Delete employees

To delete an employee from an organization node:

**1** Select the organization node in the tree. The names of the employees appear in the Employee Selector window.

**2** Select the employee you want to delete.

**3**    Click the Delete button (toolbar button with the X). The employee disappears from the list.

> ➡ **Note:** This action deletes the Employee from the Organizational Node, but the Employee Entity still exists in the OTM Directory database. The Entity can only be removed from OTM Directory through the Employee Selector window, as accessed through the Directory button in Station Administration. For more details on the link between Station Administration and OTM Directory, see "Station Administration links to the OTM Directory" on page 368.

*Search for an employee*

To search for a specific employee:

**1**    Select the organization node in the tree.

**2**    Click the Search button (toolbar button with the flashlight). The Find in Field search dialog displays.

**Figure 41**    Find in Field search dialog
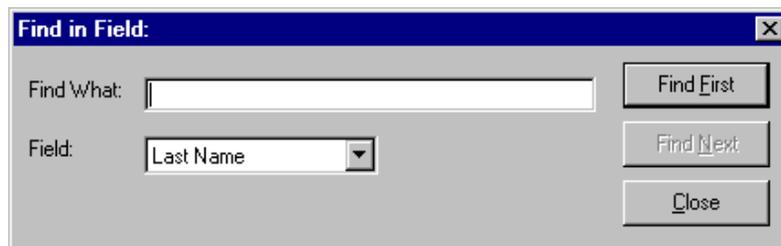


**3**    Select the field you want to search from the drop down list in the Field box.

**4**    Enter the character string to search for in the Find What box.

**5**    Click one of the following buttons:

- Find First - finds the first occurrence of the character string.
- Find Next - finds the next occurrence of the character string.
- Close - ends the search.

If the search finds a match, the employee's name appears highlighted in the Employee Selector window.

*Sort the employee list*

To sort the employee list:

**1** Select the organization node in the tree.

**2** Click the column header of the column you want to sort in the Employee Selector window.

**3** Click the Sort Up or Sort Down button (toolbar buttons with AZ Up or AZ Down).

## Employee Editor

The Employee Editor allows you to add new employees and update employee personal and job related data. The tabs on the right side of the window allow you to define the assets assigned to the employee. You can also define the property assigned to the employee such as telephone and terminal numbers.

**Figure 42** Employee Editor Window

*Access the Employee Editor*

There are several ways to access the Employee Editor:

- Click the Add or Edit button in the Organizational Hierarchy Editor window.
- Double-click an employee's name in the Employee Selector window.

To add a new employee:

**1**  The Employee Editor window opens with the Employee tab. The fields are blank. Enter the employee data as follows:

- Enter the employee information in the appropriate fields.
- How you access the Employee Editor determines if the Org. Path field shows a drop down selection box or not. If the drop down is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop down box is not active, type the path to the organization node for the employee.
- The Manager field has a drop down box where you select the employee's manager.
- Click the envelope icon next to the Email field to enter the employee's default e-mail address or type the e-mail address. This sends e-mail to the employee with a corporate LDAP compliant server.
- Click the Publish check box to share the employee information. Do not click the check box if the information is private.

> → **Note:** Clicking the Publish check box enables synchronization with an LDAP compliant server.

**2**  Enter the asset information as follows:

- Select New Asset in the Type column. The edit boxes below the grid become active.
- Select the type of asset from the drop down list in the Type field.

   The asset types available identify the employee in the different OTM applications. Select from Account Code, Authorization Code, Extension, Phone Number, or Trunk Number. Depending on the type selected, a corresponding field entry will appear, into which you enter a value.

- If the employee will be the prime user of this asset, turn on the Prime check box. This will allow several employees to use the same asset, while one employee in particular is the main owner of the asset and will be assigned the cost.
- Click the Publish check box to share the employee asset information. Do not click the check box if the information is private
- Click the Apply button.

Click one of the following buttons:

- OK - saves the employee information and closes the window.
- Apply - applies the information configured
- Apply/New - saves the employee information and leaves the window open. The window is blank so you can add another new employee.
- Cancel - Closes the window without saving the employee information.
- Help - accesses the online Help system

### *Enable Web desktop access*

**1**   From Station Administration, select View > Employee Selector

**2**   Double click an employee's name in the Employee Selector window.

The Employee Editor window for the selected employee opens.

**3**   Click the Additional Info tab in the Employee Editor window. See Figure 42.

**Figure 43**   Entering Login Name attribute
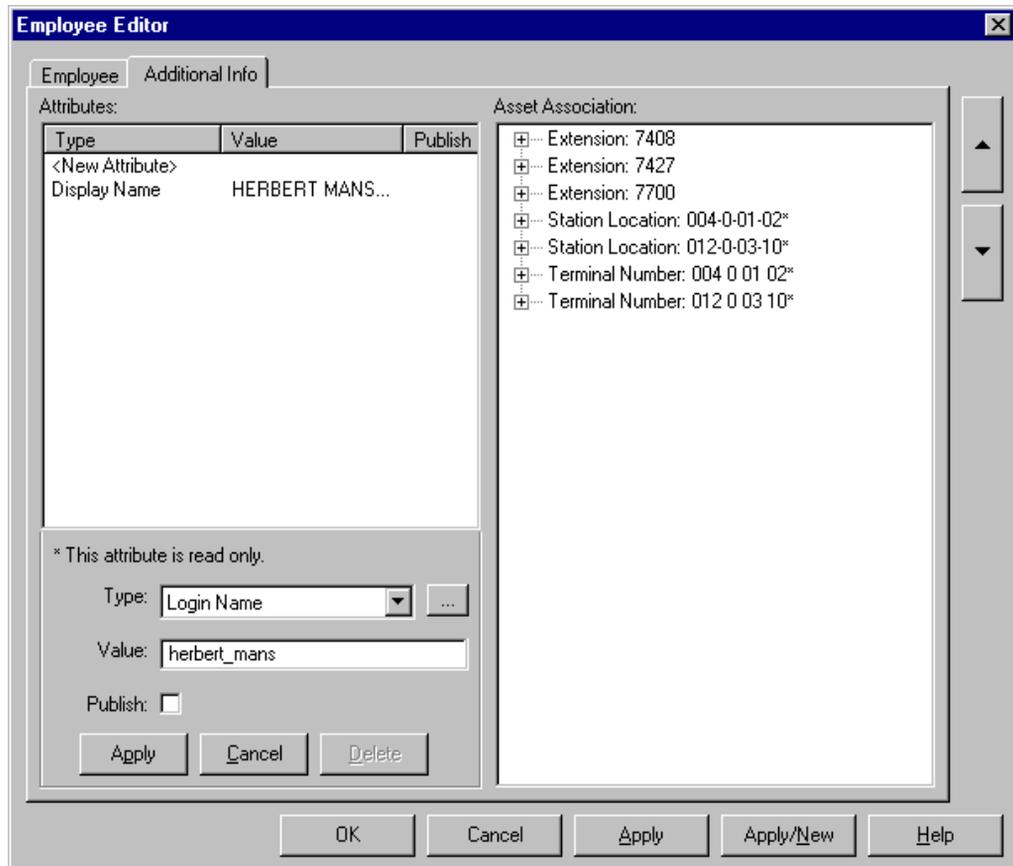


4   Select <New Attribute> in the Attributes pane.

5   Select Login Name from the Type drop down box.

6   Enter the user's Windows NT Login Name for the attribute Value (If NT is the authentication method chosen for desktop users).

7   Click the Publish check box to enable synchronization with an optional LDAP compliant server.

8   Select <New Attribute> in the Attributes pane.

9   Select User Group from the Type drop down box. See Figure 44

**Figure 44**   Entering User Group attribute
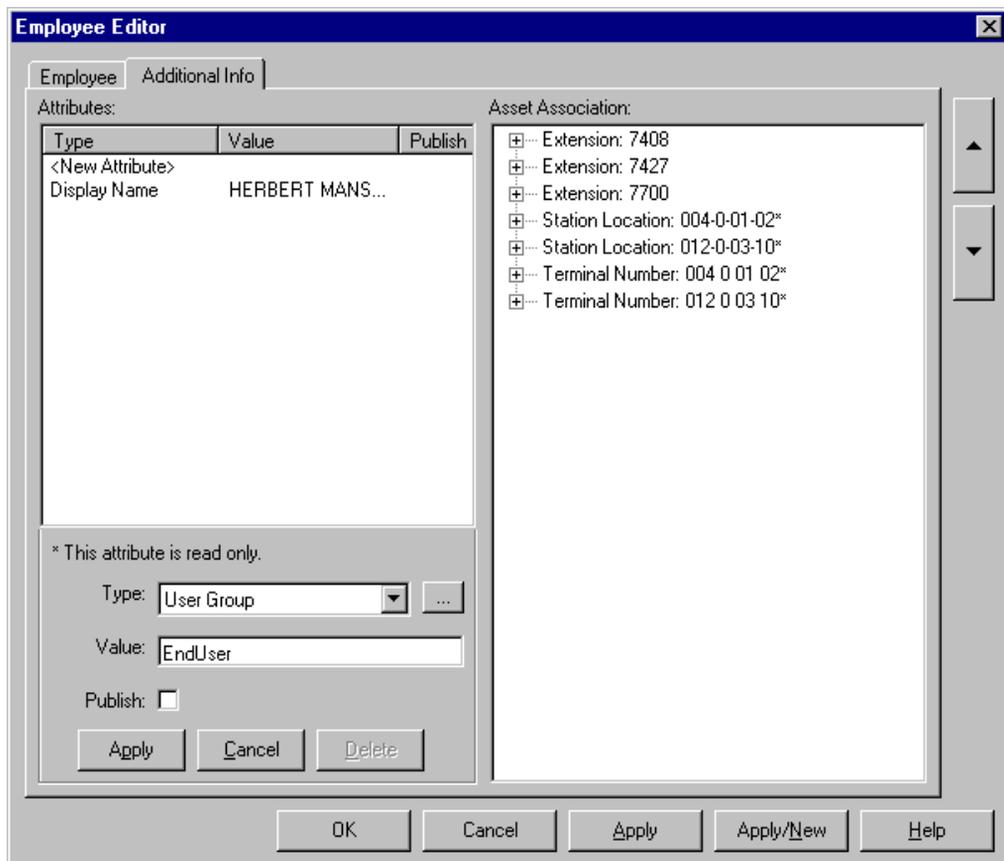


**10** Enter "EndUser" for the attribute Value to enable End User Web desktop user access - both for LDAP and Windows NT access.

Enter "HelpDesk" for the attribute Value to enable Help Desk Web desktop user access - both for LDAP and Windows NT access

*Edit employee data*

To edit employee data:

**1** Click the Employee tab in the Employee Editor window. The selected employee data displays.

**2** Edit the employee data as follows:

- Edit the employee information in the appropriate fields.
- How you access the Employee Editor determines if the Org. Path field shows a drop down selection box or not. If the drop down is active, the organization structure tree displays. Select the organization node for the employee from the tree. If the drop down box is not active, type the path to the organization node for the employee.
- The Manager field has a drop down box where you select the employee's manager.
- Click the envelop icon next to the Email field to automatically enter the employee's default e-mail address or type the e-mail address.
- Click the Publish check box to share the employee information. Do not click the check box if the information is private.

Click one of the following buttons:

- OK - saves the employee information and closes the window.
- Apply/New - saves the employee information and leaves the window open. The Up and Down arrows appear on the right side of the window. Use these arrows to scroll to another employee record for updating.
- Cancel - Closes the window without saving the employee information.

**3**   Edit the property information as follows:

- Select the property you want to edit from the list of property in the grid at the right of the window. The edit boxes below the grid display the current values.
- Change the information in the edit boxes. If the property is new, the system automatically checks the Prime field
- Click the Update button.

## *Delete employee property*

To delete property assigned to an employee:

**1**   Select the property you want to delete from the list of property in the grid at the right of the Employee Editor window.

**2**   Click the Delete key located below the grid.

## *Excess DN report*

An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions would match with a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old extensions remain in the Directory to provide information to billing department. Thus there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed as 'Excess DNs'.

Station Administration has a facility to print off a report which lists these excess DNs against their owner employee.

This report can be run by selecting File > Reports > Excess DNs in the Station Administration window (Figure 45).

**Figure 45**   Excess DNs Menu

## Corporate Directory

OTM's Corporate Directory is a flexible tool for defining and generating reports of station data associated with a terminal number. Report data is provided by Station Administration. Data can include about 100 different data fields, including the name, extension, location, and department associated with each terminal number.

> **Note:** Corporate Directory requires that you have Station Administration and Microsoft Excel 95 or later.

### Defining and generating reports

To access the Corporate Directory tool:

➔ Select Utilities > Corporate Directory in the Navigator window.

The Corporate Directory window appears where you can view and manage reports.

You can use predefined reports or define new reports.

To define a report:

➔ Select Configuration > Add Report.

The New Report property sheet appears, where you can define data fields, column names, column order, and directory location for the report.

To generate a report:

**1** Select File > Generate Report.

**2** Choose one of the following:

- Select Now to immediately display the report in a Microsoft Excel window, print the report, or save it to a file.
- Select Schedule to have the report automatically generated to a printer or Excel file at a later time.

You may highlight a report, and select File > Generate > Open to display the most recently generated version of that report.

> → **Note:** Before you can generate reports, Station Administration data must be downloaded from the switch and you must have at least one customer configured for each system.

See "Generating reports" on page 459 for more information.

## M1 Corporate Directory feature

The M1 Corporate Directory feature was added in X11 Release 25 to allow M3903 and M3904 telephone sets to display and access a corporate wide directory. For this feature to function across a network of Meridian 1 systems, each Meridian 1 must access corporate directory data from the other Meridian 1 systems on the network. For a description on how to use the Corporate Directory feature on the M3903 and M3904 telephones see *M3900 Series Meridian Digital Telephones; Description, Installation, and Administration* (553-3001-216).

OTM Corporate Directory has been expanded to support combining station data from multiple Meridian 1 and Succession CSE 1000 systems and uploading this data to the Meridian 1. M1 Corporate Directory allows you to select from which systems the data will be collected, the "target" systems, and to which systems the data will be uploaded, the "upload members". Succession CSE 1000 systems can not be designated as upload members.

When a system is newly configured, the M1 Corporate Directory database does not exist. You must use OTM to extract the Station Administration data from the OTM database to form a new database called the M1 Corporate Directory database. Extract data from the following fields: name, phone number, listed directory number, customer number, and department number. The M1 Corporate Directory database is then uploaded to the Meridian 1 system where it becomes activated for use by that system's M3903 and M3904 telephone users. You should update the M1 Corporate Directory database with the latest Station Administration data on a regular basis. Regular updates to the M1 Corporate Directory database will ensure that telephone user additions and deletions are captured. You can manually schedule the update for a predefined time, or to automatically occur after the OTM report is generated.

*Requirements*

1. Upload members, Meridian 1 systems to which the corporate directory data will be uploaded, must be X11 Release 25 or higher.

2. Target systems can be Meridian 1 systems on any X11 release or Succession CSE 1000 systems. Station data from target systems will come from the OTM Station Administration database for those systems. Be sure the station data is synchronized with the Meridian 1 or Succession CSE 1000 system by retrieving station data from within Station Administration.

*Upload Configuration*

The M1 Corporate Directory upload is configured using the predefined M1 Corporate Directory report in OTM Corporate Directory. To configure the upload:

**1**    From the OTM System window select Utilities > Corporate Directory.

The Corporate Directory window opens as shown in Figure 46.

**Figure 46**    Corporate Directory Window
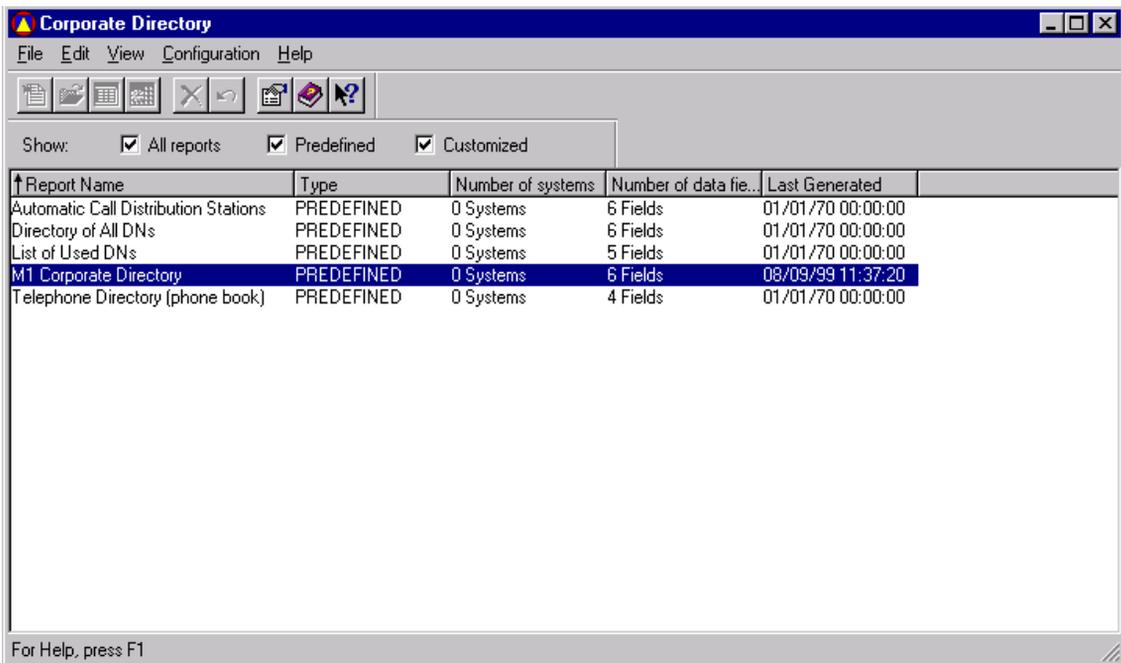
**2** In the Corporate Directory window, select the M1 Corporate Directory predefined report.

You cannot add a new field, modify the existing fields, or delete any fields in this report.

→ **Note:** It is very important that you select the M1 Corporate Directory PREDEFINED report. This report is the only report that can be uploaded to the Meridian 1 system for use with the M1 Corporate Directory feature.

**3** Use one of the following three methods to access the report properties window:

- Double-click on the highlighted line.
- Click on the properties button in the tool bar.
- Select File > Properties.

Any of these selections will display the report properties.

**4** Click on the General tab.

The Directory Members list shows the systems that are available to configure. See Figure 47.

**Figure 47**   General tab in the Report Properties sheet



**5**   Check the boxes corresponding to the systems from which you will be collecting data.

> → **Note:** The Data Fields and Output tabs are fixed -- you can not change the information in these tabs.

**6**   Click on the Upload tab to configure the upload members, target Meridian 1 systems, dialing prefix and upload schedule. See Figure 48.

**Figure 48** Upload tab in the Report Properties sheet
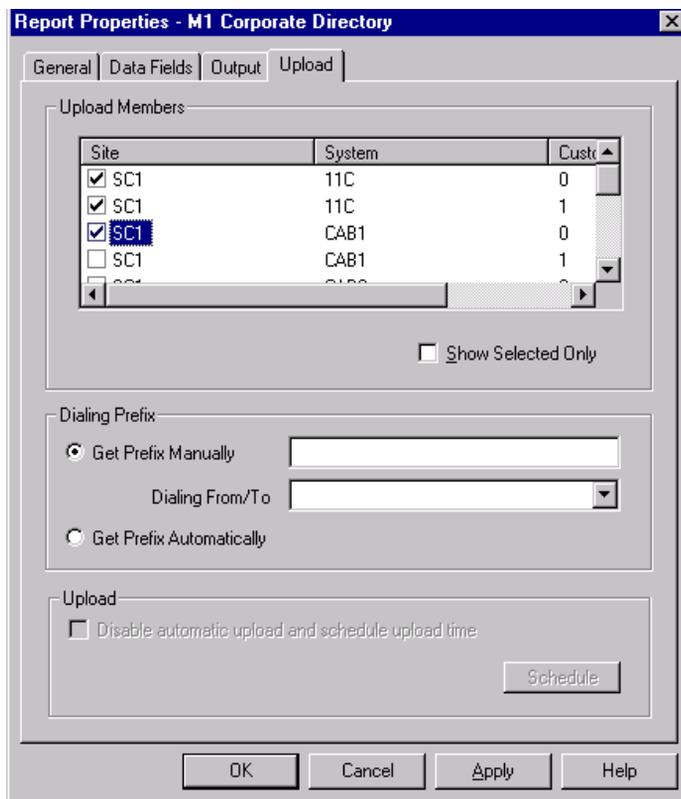


The Upload Members frame contains a list of available Meridian 1 systems.

**7** Check the boxes corresponding to the Meridian 1 systems to which you want the corporate directory data uploaded.

Once a system is checked, a Target Selection dialog box appears with a list of available target Meridian 1 systems. See Figure 49.

**Figure 49**   Target Selection dialog box
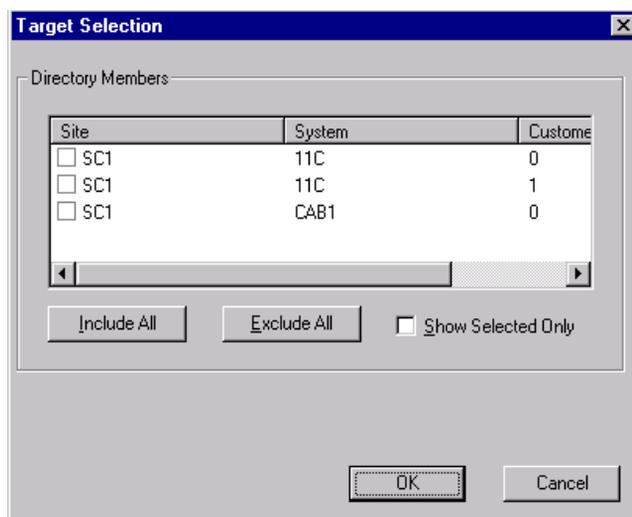


**8**   In the Target Selection dialog box, check the Meridian 1 systems from which you want to collect the corporate directory data.

**9**   Click OK.

The Dialing Prefix frame allows you to set any access codes required when dialing between Meridian 1 systems.

**10**  Click the appropriate radio button to choose whether to get the dialing prefix automatically from the Meridian 1 system or to set the prefix manually.

   •   If you choose the Get Prefix Manually option, you must then use the Dialing From/To drop-down box to select your systems and then type in the dialing prefix.

→   **Note:** If no dialing prefix is required, such as when you are using Coordinated Dialing Plan, where no extra digits are required to call between Meridian 1 systems, you can leave this field empty.

   •   If you choose Get Prefix Automatically, the dialing prefix will be retrieved from the Meridian 1 system, but the upload may take longer than using the Get Prefix Manually option.

The Upload frame allows you to schedule upload of corporate directory data.

**11** Determine whether or not you want to automatically upload data or schedule the upload to occur at a specific time:

- If the Disable automatic upload and schedule upload time check box is unchecked, the corporate directory data will be uploaded automatically after the corporate directory report is generated.

→ **Note:** If automatic upload is not disabled, your request is sent to the scheduler queue after the report is generated. The scheduler executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

- If the Disable automatic upload and schedule upload time check box is checked, the Schedule button becomes enabled and you can schedule the upload to occur separately from the report generation.

*Report Generation and Upload*

To generate a corporate directory report and upload the data to the upload members:

→ Choose File > Generate Report.

You can choose to run the report now or schedule the report to run later. If you have automatic upload enabled, the upload will occur when report generation completes.

→ **Note:** If you select Now, your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

Dialog boxes will indicate the progress of report generation and upload as these tasks run. The amount of time it takes to upload the corporate directory data will differ based on the number of stations you are uploading. Also, if you have chosen to get the dialing prefix automatically from the Meridian 1 system, the upload will take longer than the manual method.

Once the upload is complete, open the file Uploader.log in the Local Data directory to check the upload status. The contents of this file will indicate whether or not the upload was successful.

# Event Log Viewer

This section contains a general overview of the Event Log Viewer. It describes its functions and purpose. For complete details on how to use the Event Log Viewer, refer to the online Help.

## Overview

Use the Event Log Viewer to view the records of all operations that are run from the Optivity Telephony Manager. The Event Log Viewer displays the event records stored in the Event Log. The Event Log Viewer also has features such as event sorting and filtering.

## Interface

Select Event Log Viewer from the Maintenance menu of the OTM Navigator window. The main window of the Event Log Viewer displays the Event Log data in a report layout (Figure 50). Column headings display text describing the meaning of the data it contains. You can change the size of columns by dragging on the divisions that separate the each headings.

**Figure 50**   Event Log Viewer window

### File menu

The File menu contains commands to open and close Event Logs, print Event Log reports, and maintain the Main Event Log.

### View menu

The View menu commands allow you to change the way you view an Event Log.

### Options menu

The Options menu allows you to save the settings you entered in the File and View menus.

### Tools menu

The Tools menu allows you to access the SNMP Trap Setting window (Figure 51).

**Figure 51**   SNMP Trap Window
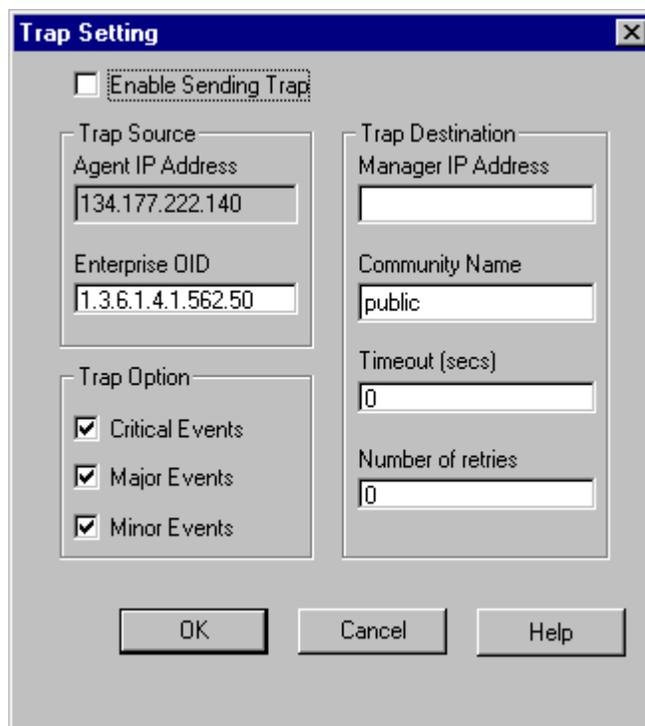
The Trap Setting option enables SNMP Trap Setting and contains the following options:

**Trap Source:**

**Agent IP Address:** An agent is an SNMP entity located on the managed node. The Agent IP Address is the IP address of the agent entity (i.e., the machine sending the trap).

**Enterprise OID:** The Enterprise OID is a unique value assigned to your organization by the Internet Assigned Number Authority (IANA).

**Trap Destination:**

**Manager IP Address:** The Manager IP Address is the IP address of the PC that hosts the target SNMP Manager and receives the trap.

**Community Name:** This name identifies the community string. The default name is "Public".

**Timeout:** The Timeout value is a time interval in milliseconds and determines the length of time that applications wait for an SNMP agent entity to respond to a request.

**Number of Retries:** The number of times the system will attempt to connect to the SNMP Manager.

**Trap Option:**

**Critical Events:** This error indicates that the event resulted in a loss of data or system functionality.

**Major Events:** This error indicates the termination of a process that could result in other processes being terminated (e.g., a corrupt DLL).

**Minor Events**: This error indicates that the event wasn't necessarily significant but might point to possible future problems.

# System Terminal

System Terminal helps you perform overlay-based tasks directly through the Meridian 1 TTY interface. System Terminal provides online, context sensitive help for overlays, prompts, and error messages. System Terminal also provides a terminal emulation capability.

In the web environment, Terminal Client provides the same functionality as System Terminal. For information on Web System Terminal, see "OTM Web System Terminal" on page 261.

There are two versions of System Terminal to support two different connection types—Ethernet or PPP and Serial—as follows:

- Overlay Passthru is available on X11 release 22 and later systems connected to OTM using Ethernet or PPP. Overlay Passthru only supports access to the overlays.
- VT220 provides similar functions for any Meridian 1 system using serial connections, as well as terminal emulation for all application modules (such as Meridian Mail). VT220 is discussed in "VT220" on page 143.

In release 22 and later Meridian 1 systems, you access the overlays using the System Terminal (Ethernet or PPP required) and access the application modules via VT220. In pre-release 22 Meridian 1 systems, you access both the overlays and application modules via VT220.

## Launching System Terminal (Ethernet or PPP required)

Once you connect to the system of interest, to launch System Terminal:

1 Select System Terminal from the Maintenance menu or toolbar in the System window.

2 Enter your system user ID and password in the System Login dialog. Figure 52 shows the System Terminal window.

**Figure 52**   System Terminal window

```
Sample Site - Sample System - System Terminal          _ □ ×
File  Edit  View  Help

Command Results:




TTY 00 SCH MTC BUG    23:34
OVL111 IDLE    0
>ld 10
OVL013
TTY 00 SCH MTC BUG    23:37
OVL111 BKGD  44
>
.
     VAS008 29/07/96 23:37:43 259709
OPRDATA: ADMIN VSID 8 CUST -- TIME & DATE 23:37:42 29/07/

Enter command:
LD 10

Overlay Supervisor
```
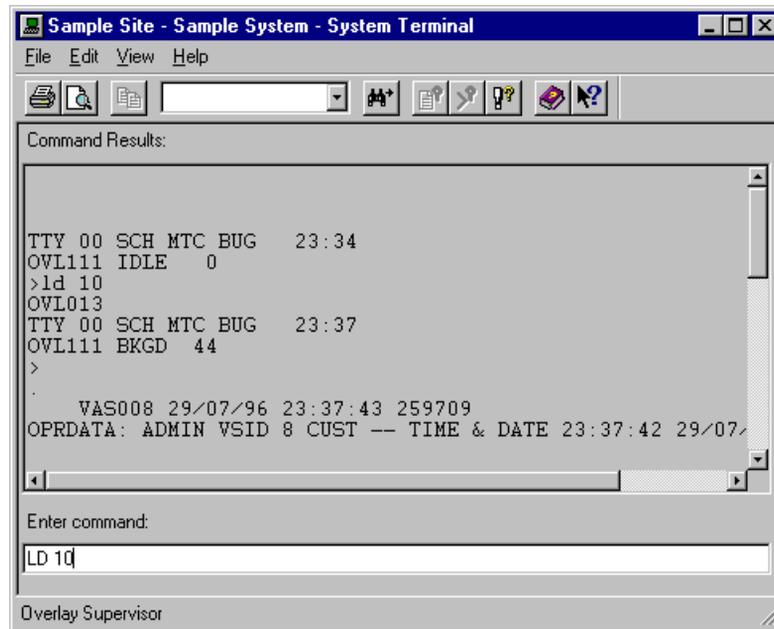
The System Terminal window displays all system events as they occur. It also gives you direct access to any overlay.

→ **Note:** For Ethernet or PPP connections, each active System Terminal connection requires a pseudo-TTY (PTY) port. PTYs are software-only I/O ports. The System Terminal and Maintenance Windows applications use these ports to access the overlays.

→ **Note:** Ethernet and PPP are available only for X11 Software Release 22 and above with packages 296 and 243 equipped.

## Configuring a pseudo-TTY (PTY) port

OTM applications require that you configure a pseudo-TTY (PTY) port on the
Meridian 1 or Succession CSE 1000 system for access to the overlays. TTY ports
differ from PTY ports in that a TTY port has physical hardware that interfaces
with an external device. A PTY port is a software emulation of a serial port
connection to a device or application through an IP network.

> ➡ **Note:** Physical TTY ports do not need to be installed to support PTY
> ports. There is no connection between these two types of ports. The
> primary requirement is that you have a device number (DNUM)
> available for configuring the PTY port.

To configure a PTY port in LD 17, you must have an unused device number
(DNUM) available. There are 16 DNUMs available on the Meridian 1 or
Succession CSE 1000 system that must be shared by all input/output devices.
These device types include TTY, PRT, PTY, AML, and DCH.

> ➡ **Note:** Option 11C and Succession CSE 1000 systems can be configured
> to support a maximum of four PTY ports.

To configure a PTY port with LD 17:

**1** In the OTM system window, on the toolbar, click the System Terminal icon.

The System Terminal Selection dialog box opens.

**2** Click on the Ethernet/PPP (Overlay Passthru) button, and then click OK.

The System Terminal window opens.

**3** Log in with your administrator's user name and password.

You must have appropriate access privileges to use LD 17.

**4** Enter:
**ld 17**

The system responds REQ.

**5** Enter:
**chg**

The system responds TYPE.

**6**  Enter:
    **cfn**

    The system responds ADAN.

**7**  Enter:
    **new tty <*n*>**

    Where n is a device number between 0 and 15. The system responds
    TTY_TYPE.

**8**  Enter:
    **pty**

    The system responds PORT.

**9**  Enter:
    **<*n*>**

    Where n is an available port between 0 and 15 for most large Meridian 1
    systems. This range varies according to the system option and card/port type.
    For Option 11C and Succession CSE 1000 systems, this range is limited to
    0-3. The system responds DES.

**10**  Enter:
    **ether**

    This is a suggestion. You can enter any name that you want to use to describe
    the port. The system responds FLOW.

**11**  Enter:
    **no**

    The system responds USER.

**12**  Enter:
    **mtc bug sch**

    The system responds TTYLOG.

> → **Note:** It does not matter which user types you enter. OTM will make any
> required changes when you establish a connection. For example, when
> the Station Administration application access a Meridian 1 over a PTY
> port, only the user type SCH will be set for the PTY port.

**13** Enter:
**no**

The system responds BANR.

**14** Enter:
**yes**

**15** Log out and close the system terminal window.

To determine how many PTY ports you will need to support OTM, determine how many OTM clients need to access the Meridian 1 or Succession CSE 1000 system at the same time. In a normal environment two or three PTY ports should be sufficient. If you have configured three PTY ports, and all three of the ports are in use, a fourth user attempting to access the system will receive a message requesting that they try the connection later.

OTM has been designed to make efficient use of the available TTY ports. Most OTM applications access a system on an "as required" basis. These applications include Station Administration, CPND, ESN, Corporate Directory, Database Backup and Restore, and Traffic. The applications make an ethernet connection to a system and sets up a virtual serial connection for access to the system overlays as required.

Applications such as Alarm Banner, Event Browser, and DBA do not require a PTY port. A special interface exchanges data between the system and OTM for these applications. There are two exceptions, Overlay Passthru/Virtual Terminal and Maintenance Windows. For Overlay Passthru and Virtual Terminal, when a connection is requested, the connection is established between OTM and the PTY port on the system. This port is locked until the connection is terminated. Maintenance Windows does not require access to a PTY port when the application is launched. When you execute a maintenance overlay command, a connection is established to execute the command. Once the command has been executed, the connection is terminated.

## OTM System Terminal window

The System Terminal window includes the following:

- An Enter Command edit box in which you type overlay commands
- A Command Results list box that displays your interaction with the overlays and the results

- Links to online help are available for the following:
  - Help on the current overlay
  - Help on the current prompt
  - Help on the last or selected error message
  - One-line description of prompts in the status bar

You use overlays just as you did before a system management tool was available. The one minor difference is that you type into an edit box rather than the last line of the screen as with TTY and Terminal Emulation applications. You still use the <Enter> key to send the typed-in data (an overlay command or response to a prompt).

### *Using System Terminal*

You can do the following from System Terminal:

- load an overlay as you normally would on a TTY or Terminal Emulation application
- cut or copy system events or overlay command results to the clipboard
- save or capture the command results to a file
- get help on a Meridian 1 error message
- get help on an overlay
- get help on a prompt
- monitor system events

### *Advantages over a TTY*

You now have the following advantages over the old TTY:

- you can type in lower case and use the backspace key
- Copy and Paste in the Enter Command box (useful for repeated commands with only a TN change)
- scroll back in the command results
- Copy and Print the command results
- capture output to a file as well as to the screen
- Save the command results to a file

## Getting help on the current overlay

You can get more help on the currently loaded overlay using the **Current Overlay** command in the **Help** menu. The help file is organized in a similar fashion to the Meridian 1 system's *Software Input/Output Guide* (553-3001-311 and 553-3001-511) and the Succession CSE 1000 system's *Software Input/Output Guide* (553-3023-311 and 553-3023-511).

> **Note:** The **Current Overlay** button or menu item is disabled when you are not in an overlay.

*Example:*

If you are in overlay 10, you can select **Current Overlay** from the **Help** menu, and then navigate within help to the **CPND** prompt sequence. You can click on any prompt in the sequence. This displays the help window for that prompt—the same as help on **Current Prompt**.

## Getting help on the current prompt

Figure 53 shows an example of the help you can get on an administration overlay. You load the overlay and respond to the prompts, one at a time. This help guides you as you load the overlay and respond to the prompts.

**Figure 53**    Current prompt help example
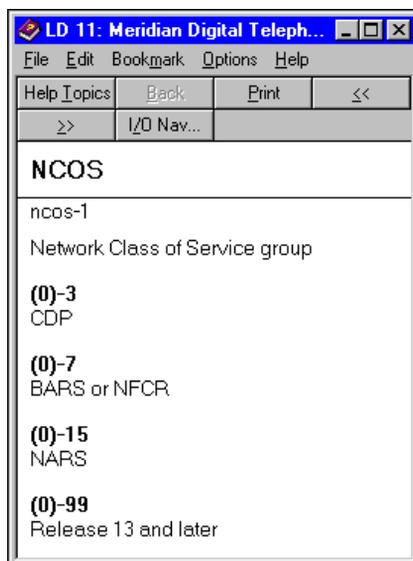


If an overlay is currently loaded, the Status Bar at the bottom of the window provides a short description of the current prompt.

If the one-line description is not enough, you can read a full description of the prompt in OTM Windows Navigator Help. Choose Current Prompt from the Help menu.

> ➡️    **Note:** Help on the current prompt is disabled if you are not in an administration overlay.

To get help on any other prompt choose I/O Navigator from the Help menu.

## Getting help on an error message

System Terminal can distinguish error messages from the other text in the Command Results list box. The Error Message command in the Help menu provides the error description in OTM Windows Navigator Help.

You can get help on an error message in the following ways:

- double-click an error message anywhere in the Command Results

- select the Error message command in the Help menu to get help on the last error message (even if it is scrolled off the screen)
- select an error message anywhere in the Command Results, then select the Error message command in the Help menu
- select the I/O Navigator from the Help menu

The error message help window appears when you select the Error message command in the Help menu.

> **Note:** You can also get help on Meridian Mail System Error and Event Reporting (SEER) messages using the I/O Navigator.

## System Terminal menus

Detailed descriptions about the functions of each command in the System Terminal menus are available by clicking the "Context-sensitive Help" button in the toolbar. System Terminal menus consist of:

- File
- Edit
- View
- Help

## Toolbar

The System Terminal toolbar offers several useful shortcuts to the menu commands. See Figure 54.

**Figure 54** System Terminal toolbar



> **Note:** The Find and Find Next icons in the toolbar allow you to search the Command Results for the text string that you enter in the Find box. Find is case-sensitive. The search begins at the current location.

## Using the I/O Navigator

The I/O Navigator displays a dialog box that allows you to quickly jump to help on any overlay, prompt, command, or error message. Select I/O Navigator from the overlay's Help menu or from the I/O Navigator buttons in the appropriate Help files.

The I/O Navigator allows you to navigate through I/O reference help independent of your current context within the overlays. For example, you do not need to be logged into a system to look up an error message using the I/O Navigator. See Figure 55.

**Figure 55**   I/O Navigator dialog
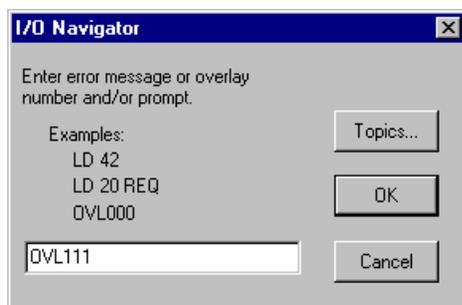


**1**   Type the overlay number, error message number, or prompt in the text entry field

**2**   Click OK.

Help information for the specified overlay, prompt, or error message appears.

The Topics button displays the general reference Help index. See Figure 56.

**Figure 56** Example Help Index for an error message
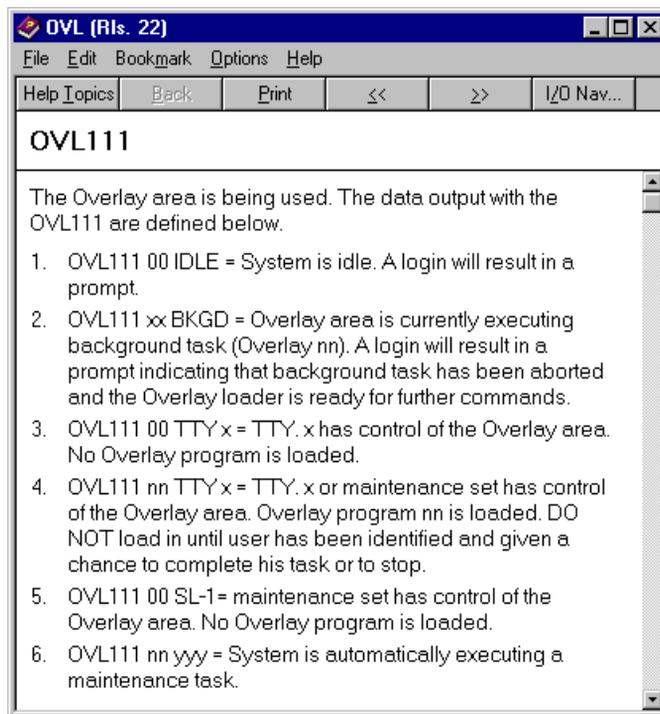


The **Cancel** button cancels a search.

Entering an overlay (LD XX) or error code mnemonic (ERR, BUG) takes you to the contents page of the appropriate help file. Entering the error code (BUG3001) or an LD number and a prompt takes you to the Help topic page.

- If the prompt or error message you specify does not exist, the help search dialog appears with the nearest match selected.
- If the overlay number or error message type do not exist, a "Help file not found" information dialog appears.
- The I/O Navigator command can be used from within Help. You do not need to be connected to a switch.
- There are some combination overlays (for example, one help file describes two overlays). You can enter either of the overlay numbers. These cases are:
  — LD 36 and LD 41
  — LD 40 and LD 42

— LD 20, LD 21, and LD 22

— LD 84 and LD 85

- Leading zeros are not required in error messages. For example, entering SCH22 or SCH022 will find the description for SCH0022.

- To look up Meridian Mail System Error and Event Reporting (SEER) messages, enter XXXYY (where XXX is the message class, and YY is the message number—no mnemonic is required). For example, enter 11102.

## VT220

The VT220 application models the VT100/220/320 series of terminals to set up communications between your PC and the Meridian 1 system. With VT220, you can connect to the Meridian 1 system using a serial, PPP (point to point protocol), or Ethernet connection. It supports the transfer of ASCII data during a communications session and provides normal TTY and VT220 access to overlays that are not supported by the OTM applications.

### *Features*

VT220 supports the following features:

- double-height, double-width, blinking, bold and underlined characters
- complete graphic character set, including a special font for representing control characters
- scrolling regions
- 80 and 132 column modes
- echo, no echo, local mode and autowrap on/off
- reverse video characters and reverse video screen
- cursor types—block, underline, vertical line, or none
- selectable cursor blink rate
- user-definable Tab stops
- programmable function keys
- display control mode
- national character sets

## Accessing VT220

Before accessing VT220, you must first select the type of terminal emulation session you require. To do so, perform the following steps:

**1**   Click once on the system name in the OTM Navigator to highlight it and click Properties from the File drop-down menu (or simply right-click on the system name and click Properties).

**2**   From the System Properties window, click the Communications tab and select the desired settings file from the Terminal Emulation VT220 Settings drop-down list box (e.g., MMAIL.INI).

**3**   Click the Applications tab and click once on System Terminal (VT220) in the Applications list box to highlight it.

**4**   Select a communications profile for System Terminal (VT220) by clicking on the desired profile name in the Communications Profile drop-down list box.

**5**   Click OK to select these settings and return to the OTM Navigator.

To access VT220, perform the following steps:

**1**   From the OTM Navigator, select the desired site and system and click System Terminal from the Maintenance drop-down menu.

**2**   From the System Terminal Selection dialog which appears, click Serial (VT220) and click OK.

VT220 will attempt to connect to the terminal based on the communications criteria entered in the System Properties Serial Communications Profile for this system. Once it establishes this connection, the VT220 main window will appear listing the commands and graphical tools required for the emulation session. See Figure 57.

**Figure 57**   VT220 window
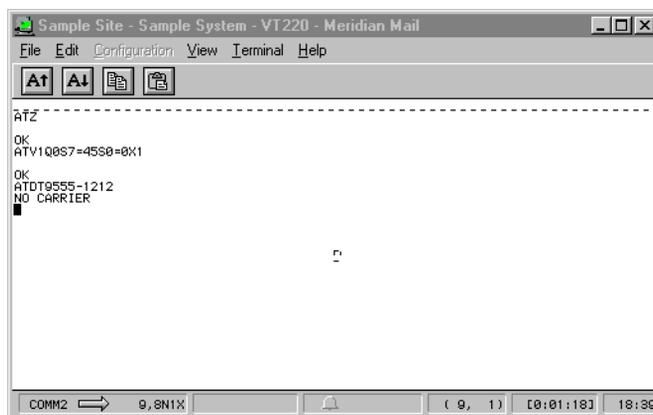


The following sections briefly list the main functions of VT220.

*File menu*

The File menu contains functions used to save the VT220 configuration, print the
contents of the terminal window, record and replay VT220 terminal emulation
sessions and close the system.

The following is a summary of these functions:

- Save Configuration
- Save Configuration As
- Print
- Print Setup
- Printer Fonts
- Capture
- Playback
- Close

The Save Configuration and Save Configuration As menu items are only available
if you have selected a user defined terminal type (as defined as the 'Other' VT220
type from the OTM System Properties Communications tab). Otherwise, they will
appear grayed.

*Edit menu*

The Edit menu contains editing commands used to manipulate the text appearing in the main window.

The following is a summary of these functions:

- Copy
- Paste
- Select All

*Configuration menu*

Once you start VT220 from the system window of the OTM Navigator with a user defined type of terminal (as defined as the Other VT220 type from the OTM System Properties Communications tab), then you can use the Configuration functions to customize the VT220 settings to suit your needs. The purpose of having the 'Other' type is to allow you to create multiple types of settings based on generic settings.

If you do not select 'Other' or a user defined type, then you will not require these functions to run VT220. The Configuration command will therefore appear grayed.

Before you can customize the VT220 settings, you must first select the custom VT220 settings file OTHER.INI using the Communications tab from the OTM Navigator System Properties application. Refer to "Accessing VT220" on page 144 for more details on selecting this option. This file appears in the VT220 settings drop-down list box. When you launch VT220 from this customizable terminal, you can then use the commands which appear in the Configuration drop-down menu to change the settings for VT220.

Once you have edited the VT220 settings using these functions, you must then save the customized configuration file using the Save Configuration As command. Using this command, you can enter the name of this configuration file for use in later sessions.

VT220 includes a number of setting files which are predefined depending on the system to which you are connected. For example, M1.INI is a predefined setting file used for a VT220 terminal emulation session with the Meridian 1 system, and MMAIL.INI is a predefined setting file for Meridian Mail. These setting files provide the required VT220 settings and cannot be edited.

The following is a summary of the Configuration functions:

- Terminal Setup
- National Replacement Character Set
- Map Keyboard
- Program Keys
- Tab Setup
- Options
- Status Bar

## View menu

The View menu contains toggles to adjust the display of the VT220 window as well as hide and display the Tool Bar, Status Bar and Keys Window.

The following is a summary of these toggles:

- Terminal
- Hide/Show Tool Bar
- Hide/Show Status Bar
- Hide/Show Keys Window

## Terminal menu

The Terminal menu contains commands used to connect and disconnect VT220 for a temporary communications setup. The Connect and Disconnect commands start and stop the terminal emulation. The Temporary Communication Setup function temporarily creates a terminal emulation session based on customizable connection criteria. This setup is only temporary for the current session. When you access VT220 again, it will use the criteria defined for this system in the OTM System Configuration function.

The following is a summary of these commands:

- Connect
- Disconnect
- Temporary Communication Setup

### Help menu

In addition to the standard online help features for VT220, this Help menu contains topics which provide help with the Overlay Enhancer and I/O error messages.

The following is a summary of these Help items:

- Help Topics
- Current Overlay
- Current Prompt
- Error Message
- I/O Navigator
- About VT220

The Help Topics menu item displays the help topics for VT220 only if you select a user defined terminal type (as defined as the 'Other' VT220 type from the OTM system Properties Communications tab). Otherwise, it will display the help topics for the Meridian 1 system.

The Current Overlay, Current Prompt and Error Message menu items are only enabled if you are running a VT220 terminal emulation for the M1.INI terminal type and the system is in overlay mode.

The I/O Navigator Help function allows you to obtain information on specific error messages.

The Overlay Enhancer is an online context sensitive help function which allows you to obtain quick and direct access to overlay information while in an active terminal session with the Meridian 1 system.

The following Overlay Enhancer Help commands appear in the Help drop-down menu:

- Current Overlay
- Current Prompt
- Error Message

The Current Overlay and Current Prompt commands are only available if an overlay program is loaded and the terminal session is of type 'Meridian 1', 'PPP', or 'Ethernet'. Otherwise, they will be disabled and will appear grayed. The Error Message command will be available if the terminal session is of type 'Meridian 1', 'PPP', or 'Ethernet'. Otherwise, it will be disabled and will appear grayed.

> **Note:** Selecting an error message in the VT220 window is not sufficient to access the Overlay Enhancer help. Unlike the Overlay Passthru application which displays online help when you double-click the error message, the VT220 help requires that you first click to select the error message and then select Error Message in the Help drop-down menu. This will then display help for the selected error message

## Keyboard mappings

VT220 uses standard keyboard mappings which, when incorporated into a terminal session, will match the appropriate VT keys and actions. These default mappings, as shown in the following tables, allow you to run a terminal emulation session using the appropriate keys on a standard 101 or 102-key keyboard.

For example, if you are using VT220 to run Meridian Mail, the Meridian Mail softkeys (which appear at the bottom of the menus and screens) will correspond to the appropriate function keys on your keyboard. The Meridian Mail softkeys correspond to the function keys F6 through F10 on a standard 101 or 102-key keyboard. Therefore, in a Meridian Mail session, you would press F6 to select Softkey 1, F7 to select Softkey 2, etc. For more information on the Meridian Mail softkeys, refer to the *Meridian Mail System Administration Guide.*

Table 8 through Table 10 list the keyboard mappings for VT220 on standard 101 and 102-key keyboards.

**Table 8**   Keyboard mappings - VT key

| VT Key | PC Key |
| --- | --- |
| PF1 | Num Lock |
| PF2 | Numpad Slash |
| PF3 | Numpad Star |
| PF4 | Numpad Minus |
| Find | Insert |
| Insert | Home |
| Select | Delete |
| Up Arrow | Up Arrow |
| Down Arrow | Down Arrow |
| Left Arrow | Left Arrow |
| Right Arrow | Right Arrow |
| F6 | F6 |
| F7 | F7 |
| F8 | F8 |
| F9 | F9 |
| F10 | F10 |
| F11 | F11 |
| F12 | F12 |
| F13 | Sys Rq |
| F14 | Scroll Lock |
| Help | F2 |
| Do | F3 |
| F17 | Ctrl-F7 |
| F18 | Ctrl-F8 |
| F19 | Ctrl-F9 |
| F20 | Ctrl-F10 |

**Table 9**   Keyboard mappings - VT action

| VT Key | PC Key |
|---|---|
| Remove | Page Up |
| Next Screen | Page Down |
| Prev Screen | End |
| Hold Screen | F1 |
| Compose | Unmapped |
| Delete | Backspace |
| Keypad Command | Numpad Plus |
| Keypad Enter | Numpad Enter |
| Break | F5 |
| Long Break | Shift-F5 |
| Control Break | Ctrl-F5 |
| Print Screen | Unmapped |
| Keypad 0 | Numpad 0 |
| Keypad 1 | Numpad 1 |
| Keypad 2 | Numpad 2 |
| Keypad 3 | Numpad 3 |
| Keypad 4 | Numpad 4 |
| Keypad 5 | Numpad 5 |
| Keypad 6 | Numpad 6 |
| Keypad 7 | Numpad 7 |
| Keypad 8 | Numpad 8 |
| Keypad 9 | Numpad 9 |
| Keypad Minus | Ctrl-Numpad Minus |
| Keypad Period | Numpad Del |

**Table 10**   Keyboard mappings - VT action scroll

| VT Key | PC Key |
|---|---|
| Scroll Left | Ctrl-Left Arrow |
| Scroll Right | Ctrl-Right Arrow |

**Table 10** Keyboard mappings - VT action scroll

| VT Key | PC Key |
|---|---|
| Scroll Up | Ctrl-Up Arrow |
| Scroll Down | Ctrl-Down Arrow |

# System Monitor

The OTM System Monitor is a Microsoft Windows executable program that runs in the background on the OTM Server. System Monitor displays the PC's resources (such as, memory and CPU usage) and issues alarms when system resources are low. The System Monitor utility allows you to do the following:

- turn a system alarm on or off and define the conditions (where, when, and what type of alarm) for sending alarm messages
- enable the System Monitor to automatically start when Navigator starts
- view the virtual, physical, and total memory available
- view the total CPU usage information
- view the processes now running on the system
- view the applications now running on the system
- view the performance of the NT server
- ping another machine to test network connections

## Access System Monitor

Access the OTM System Monitor with the Microsoft Windows Run command. The path depends on your installation. However, you can locate the System Monitor executable, *SystemMonitor.exe*, in the Nortel\Common Services\Program Files folder.

Double-click the System Monitor executable file. The System Monitor icon appears on the Windows task bar, and the System Monitor starts (the window is minimized on your screen). From this window you can perform all of the System Monitor functions

To enable or disable the System Monitor, select Options from the Options menu in the System Monitor window

## View the virtual, physical, and total memory available

To view memory information, select the Memory tab on the System Monitor window.

The tab displays the amount of virtual and physical memory available, the total memory limit and the total memory now in use. The progress bar at the bottom of the tab graphically displays the Memory Usage percentage.

**Figure 58**   System Monitor - Memory Tab
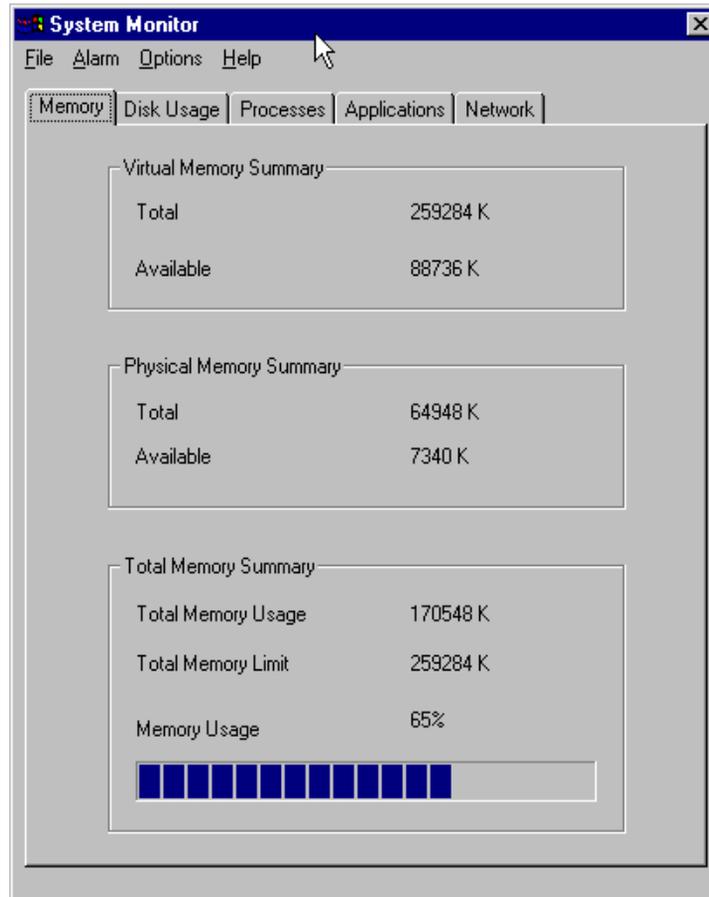
### View Disk Usage information

To view usage information for the disk, select the Disk Usage tab on the System Monitor window (Figure 59).

**Figure 59** System Monitor - Disk Usage Tab
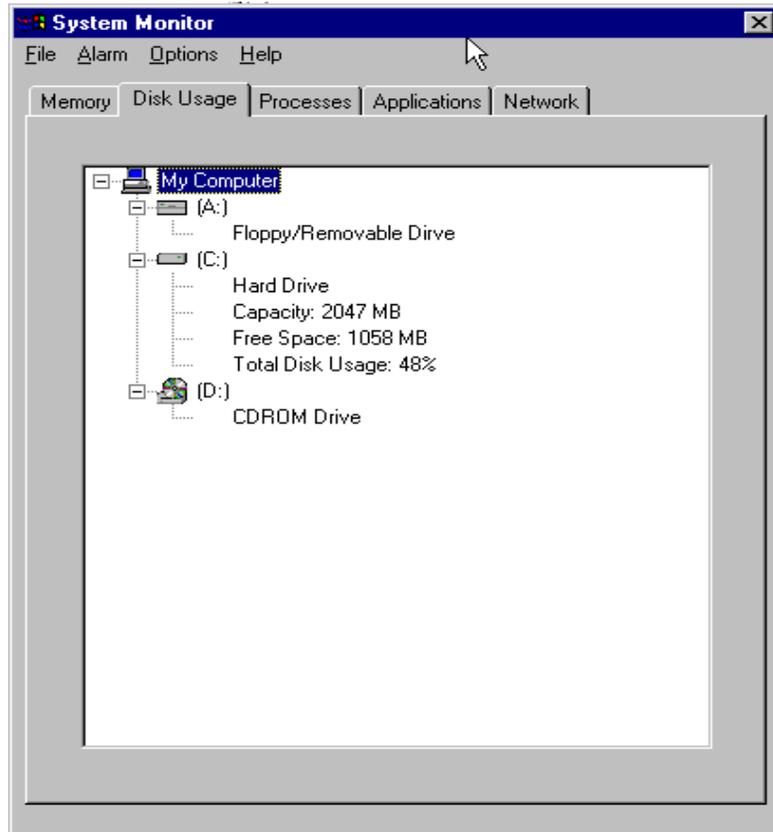


### View CPU information

To view usage information for the CPU, select the Processes tab on the System Monitor window.

The tab displays five columns of information for each process that is running (Figure 60). The CPU usage is graphically displayed at the top of the tab. The tab displays the following information:

- **Processes:** the name of the process
- **ID:** the process ID
- **CPU%:** the percentage of the CPU used for the process
- **MEM USAGE:** the amount of memory used for the process
- **VM SIZE:** the amount of virtual memory used for the process

**Figure 60**   System Monitor -Processes Tab
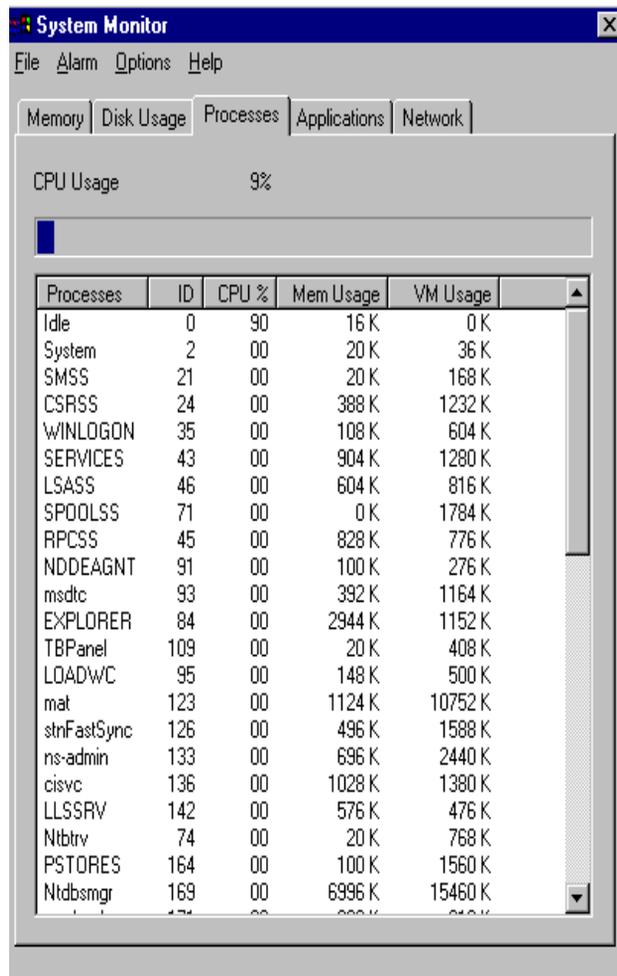
### View and disable applications running on the system

To view and disable applications running on the system, select the Applications tab on the System Monitor window (Figure 61).

To stop an application from running, select the application and click the End Task button.

**Figure 61**   System Monitor - Applications Tab
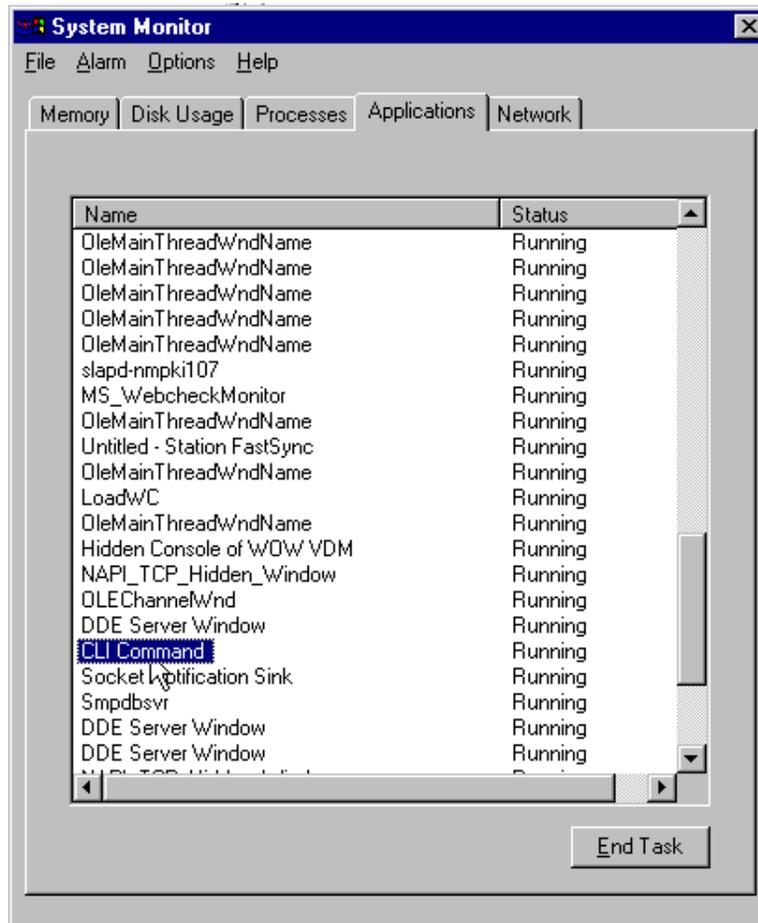
### View the performance of the server.

To view the server performance, select the Network tab on the System Monitor window. The tab displays the number of bytes received and sent per second by the server (Figure 62).

To view the performance of other machines:

**1**    Select the Network tab on the System Monitor window.

**2**    Enter the IP address of the machine you want to view.

**3**    Click the Ping button. The performance for the machine appears.

**Figure 62**    System Monitor - Network Tab
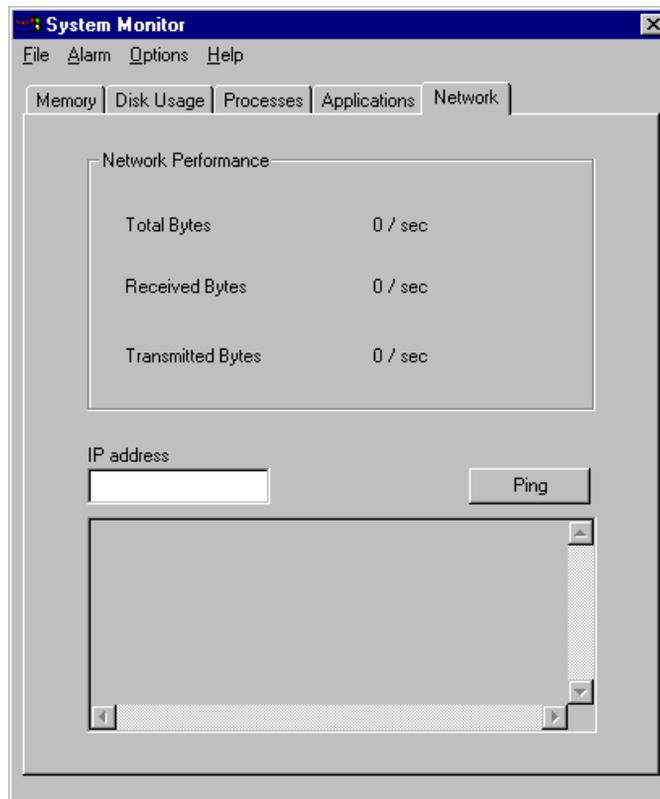
## Set up alarms

You can set up where to send alarm messages when system resources are low and set the conditions for sending alarm messages.

To configure alarms, select Alarm from the Alarm menu in the System Monitor window. The Alarm window opens (Figure 63).

**Figure 63** System Monitor - Alarm window
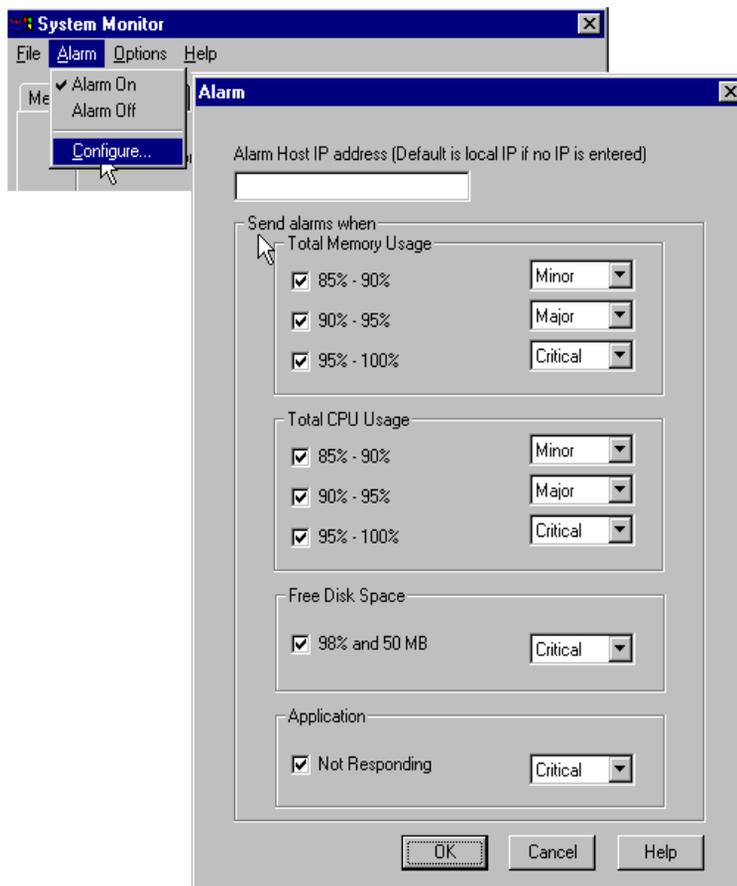
# Data Buffering and Access

The OTM Data Buffering and Access (DBA) and M1 Database Disaster Recovery applications provide a Windows interface to start a live data buffering session and define the session properties for collecting data from a Meridian 1 or Succession CSE 1000 system. A network or PPP connection allows collection of CDR and Traffic data. A serial connection allows collection of ASCII data only.

With a PPP or network connection, you can perform the following tasks:

- Schedule a single or routine backup of your Meridian 1 or Succession CSE 1000 system's database files.
- Schedule the retrieval of buffered CDR and Traffic data from an Option 11C or Succession CSE 1000 system.
- View collected CDR and Traffic data.
- Backup and restore a Meridian 1 or Succession CSE 1000 system's database to and from a remote device for database recovery.

If you lose a connection or have connection problems during a live data session, the Meridian 1 and Succession CSE 1000 systems save the CDR and Traffic data. You can retrieve the data when the connection is restored.

With a serial connection, you can perform the following tasks:

- Set up the actions and rules for generating alarms.

> **→** **Note:** A serial connection does not support the DBA Backup and Restore functions.

- View collected serial data.

If you lose a connection or have connection problems during a live serial data session, data will be lost.

Use the DBA application to schedule the following tasks:

- Archive CDR and Traffic from the Meridian 1 or Succession CSE 1000 system.

- Perform Meridian 1 or Succession CSE 1000 Database Disaster Recovery (back up only).

## Access DBA

To access DBA, select Data Buffering and Access from the Utilities menu in the OTM Navigator window.

The DBA main window appears. (See Figure 64)

**Figure 64**   DBA Main window
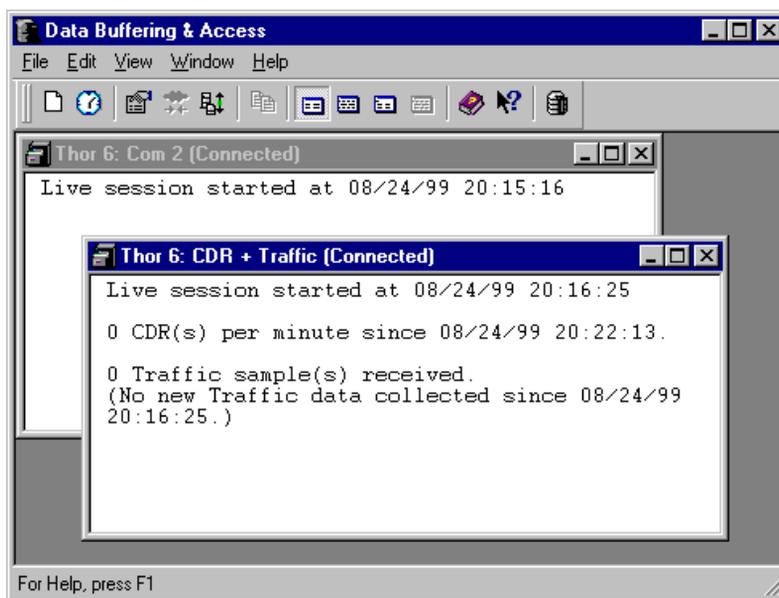


### *DBA menus*

Descriptions of each command in the DBA menus are available online. Use the Help command to get detailed descriptions of the commands.

### *DBA Toolbar*

The DBA Toolbar provides easy access to many of the menu commands.

Right-click the mouse in the session window to view the pop up menu containing a subset of the menu items.

## Start a new live data session

To collect live data, you must start and configure a live data session (an active connection to a Meridian 1 or Succession CSE 1000 system). The DBA application runs continuously during the session, providing access for session configuration and a window for monitoring session information. Special operations, such as Meridian 1 or Succession CSE 1000 database backup, can be run immediately or scheduled to run within a session.

> → **Note:** To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. See "Hide and restore the DBA main window" on page 183.

For Option 11C systems with survivable expansion cabinets and Succession CSE 1000 systems with survivable media gateways, it is possible to have live data delivered to DBA from the main cabinet or call server. When the systems are operating in normal mode, there is no call processing taking place on the expansion cabinets or the media gateways; therefore, no CDR data will be sent from the expansion cabinets or media gateways.

To start a new live data session:

**1**   Select New Session from the File menu in the DBA main window.

   The Select an M1 System for Live Data dialog box opens (Figure 65).

**Figure 65**  Select a System for Live Data dialog box
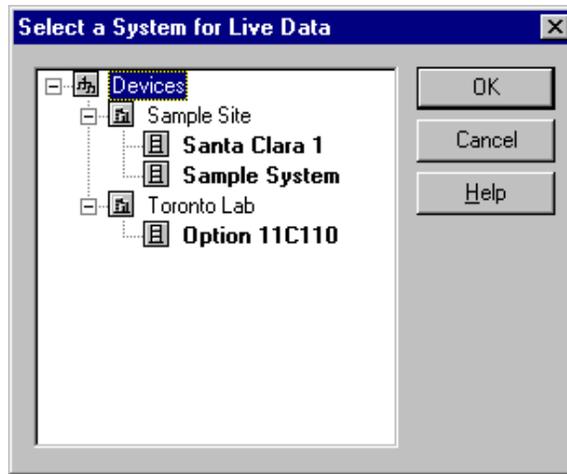


**2**  Select the Meridian 1 or Succession CSE 1000 system for the session from the tree and click **OK**, or double-click the selected system.

The Session Properties dialog box opens (Figure 66).

**Figure 66**  Session Properties dialog box
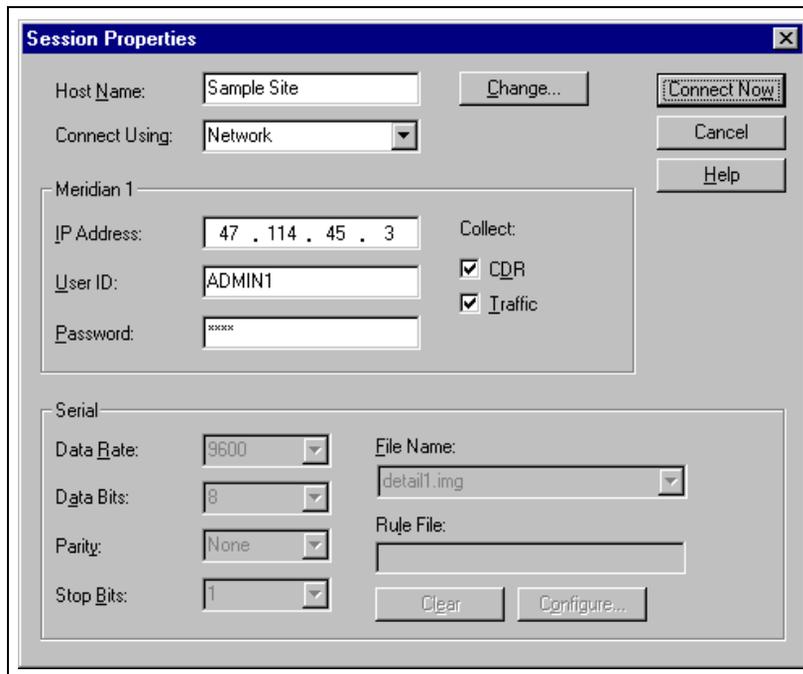
## Define session properties for a network connection

Session properties for a network connection are defined as follows:

**1** (Required) The name of the selected Meridian 1 or Succession CSE 1000 system appears in the Host Name box.

> **Note:** To change your system selection, click Change to return to the Select an M1 System for Live Data dialog box.

**2** (Required) Select network connection in the Connect Using box.

**3** (Required) The IP address for the selected Meridian 1 or Succession CSE 1000 system appears in the IP Address box.

**4** (Optional) Enter your Meridian 1 or Succession CSE 1000 log in name in the User ID box.

**5** (Required) Enter your Meridian 1 or Succession CSE 1000 log in password in the Password box.

**6** The Host Name, IP Address, User ID, and Password data exist for the selected Meridian 1 or Succession CSE 1000 system in OTM Navigator. The DBA application automatically fills these fields with values from the OTM database. Any changes made in this dialog box are temporary and lost when the session window closes.

**7** Check the Collect boxes to select the types of data (CDR and/or Traffic) that DBA will buffer.

**8** Select Connect Now to connect to the selected Meridian 1 or Succession CSE 1000 system and begin a live data session.

If you do not buffer all available data types, a dialog box appears asking you to confirm your selection.

A new window opens within your DBA main window. The host name of the connected Meridian 1 or Succession CSE 1000 system appears on the title bar. DBA uses this session window to provide information about the live data session. (See "View session data" on page 178.)

Leave the session window open to maintain the live data session. If you close the window, the live session terminates. If the session terminates, the Meridian 1 or Succession CSE 1000 system begins sending buffered data to one of the following devices, depending on the session parameters you set when establishing the connection:

- Hard drive. Not recommended for Option 11C and Succession CSE 1000 systems.

> **Note:** Nortel Networks recommends using a live connection, rather than using a hard drive, to collect data from large Meridian 1 systems.

- PCMCIA card (Option 11C, and Succession CSE 1000 systems)

## Define session properties for a serial connection

Session properties for a serial connection are defined as follows:

**1** (Required) The name of the selected Meridian 1 or Succession CSE 1000 system appears in the **Host Name** box.

> **Note:** To change your system selection, click Change to return to the Select an M1 System for Live Data dialog box.

**2** (Required) Select serial port connection in the Connect Using box.

> **Note:** If you select a serial connection, use the Rules Manager window to define the actions taken when a specific data pattern appears in the data stream. See "Configure Actions and Rules" on page 165.

**3** Select the data rate for the connection in the Data Rate box.

**4** Select the data bit setting for the connection in the Data Bits box.

**5** Select the parity setting for the connection in the Parity box.

**6** Select the stop bits for the connection in the Stop Bits box.

**7** Enter the name of the file to store data collected from the serial port in the File Name box. The file exists under the selected site and system. Enter a new file name or select one of the following files from the drop down list.

- detail1.img - File used for CDR data.
- traffic.dmp - File used for Traffic data.

**8** Rule File is a read only field containing the name of the rules file for this DBA session. Edit the field with the Clear and Configure buttons.

- Clear - Removes the file name from the Rule File field
- Configure - Opens the Rules Manager window shown in Figure 67. You can create a new rules file or open and edit an existing rules file. If you create a new rules file, you must define the actions taken when a specific data pattern appears in the data stream. See "Configure Actions and Rules" on page 165.

## Configure Actions and Rules

Actions and rules are configured for serial connections. The Rules Manager window allows you to:

- Define the file you want to save or load into the Rules Manager
- Configure new actions or update or delete existing actions
- Configure new rules or update or delete rules, and set the order for applying rules.

**Figure 67**   Rules Manager—General tab
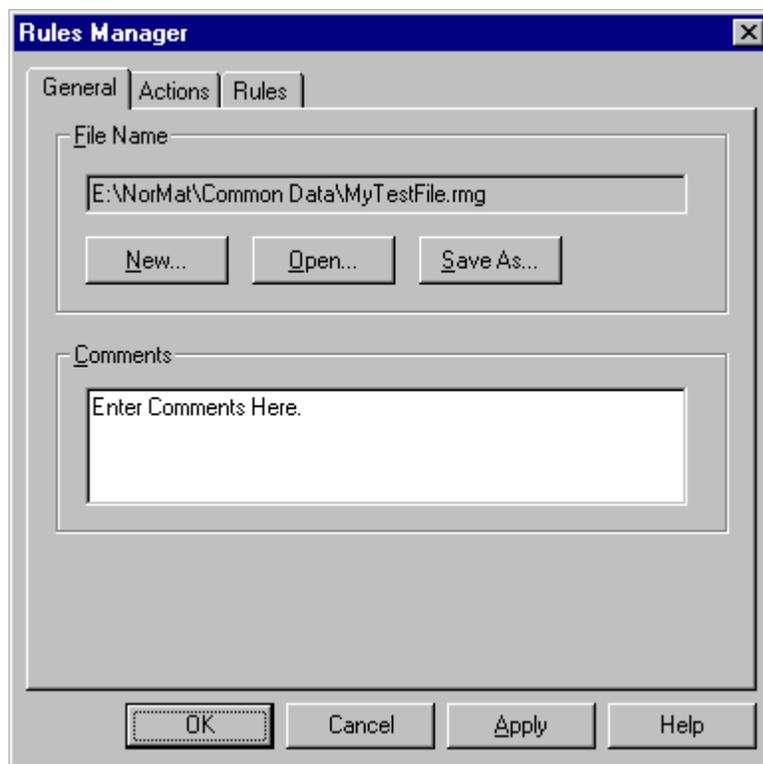


*Define the Rules Configurations file*

Use The General tab to select the rules configuration file you want to save and load into the Rules Manager (Figure 67).

**1**   The **File Name** box is a read only field displaying the path and file name of the current rules configuration file. To use a different rules configuration file, click on one of the following buttons:

•   **New** - Resets the Rules Manager dialog box to blank. If changes have been made to the current configuration, you are prompted to save the changes.

•   **Open** - Opens the standard file dialog box, which allows you to select a rules configuration file. If you change the current configuration, you are prompted to save the changes.

- **Save As** - Opens the standard file dialog box allowing you to save an existing rules configurations file under another file name. Enter the new name and click the Save button. The Rules Manager window appears with the name of the file in the File Name box.

**2**    After you define the configurations file, use one of the following buttons:

- **OK** - Saves the rules configuration file and closes the Rules Manager window.

- **Cancel** - Discards any changes to the rules configuration file and closes the Rules Manager window.

- **Apply** - Saves the rules configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

- **Help** - Displays online help.

### *Configured Actions*

Use the Actions tab to define new actions or update or delete existing actions (Figure 68).

**Figure 68** Rules Manager—Actions Tab
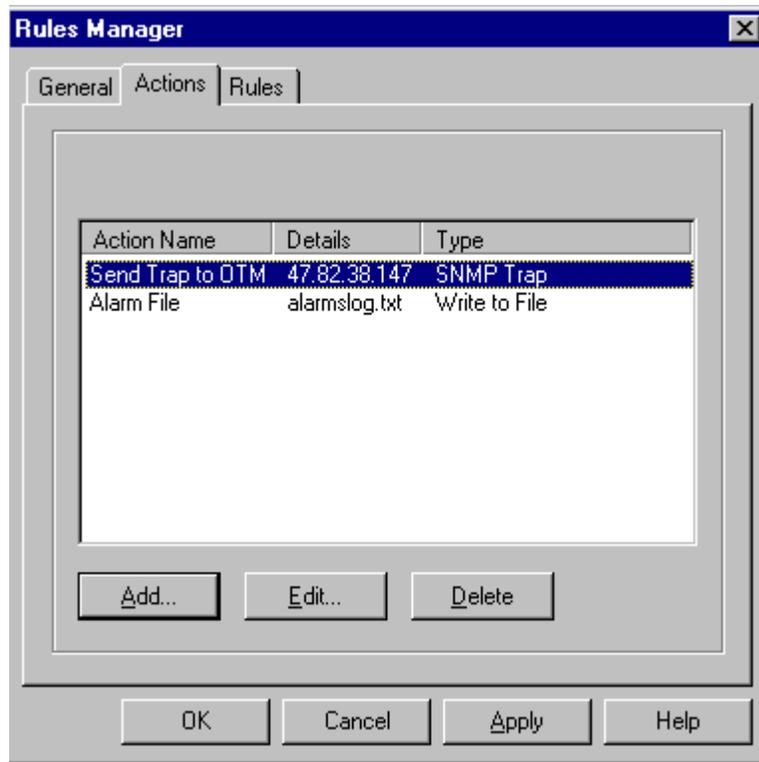


**1** Select an action from the displayed list and click one of the following buttons.

- **Add** - Opens the New Action dialog box shown in .

- **Edit** - Opens the dialog box to edit configurations for the selected action.

- **Delete** - Select the action and click the Delete button to delete the action.

**2** After you define the actions, use one of the following buttons:

- **OK** - Saves the actions in the configuration file and close the Rules Manager window.

- **Cancel** - Discards any changes to the actions and closes the Rules Manager window.

- **Apply** - Saves the actions in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

**Define a New Action**

The New Action dialog box shown in Figure 69 provides a list of configurations you can apply to the selected action. You can configure the SNMP trap and Write to File actions. Based on the configuration you select, another dialog box such as, SNMP Trap, displays for you to define the configuration for the action.

**Figure 69**   New Action dialog box
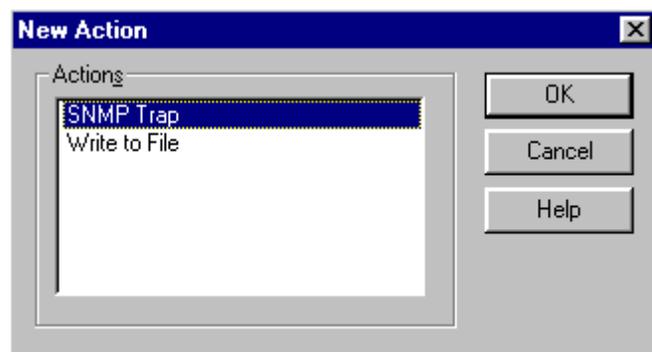


**SNMP Trap dialog box**

The SNMP Trap dialog box shown in Figure 70 defines the destination for the SNMP Trap action. Select the radio button for the destination of the trap. The valid selections are a local IP address or a user defined address. The destination address must be running an application capable of taking the SNMP trap sent from DBA. When you select a local IP address (the default) it sends all traps to the same system running DBA and the Trap Server.

**Figure 70** SNMP Trap dialog box
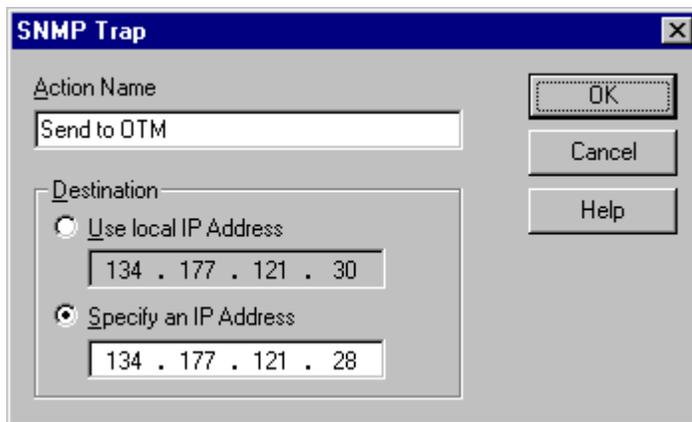


The local IP address does not exist in the Rules Manager configurations file. You can change the local IP address without resetting the value in the defined action in the configuration file.

**Write to File dialog box**

The Write to File dialog box shown in Figure 71 allows you to define the destination for a Write to File action. Enter a name for the action and the name of the file for storing the action. The file is in the OTM Common Data Directory in the system level folder. Because the file exists in the common data directory, multiple sessions defined for different sites and systems can use the same Rules Manager file. You can copy the file to another OTM system.

**Figure 71** Write to File dialog box
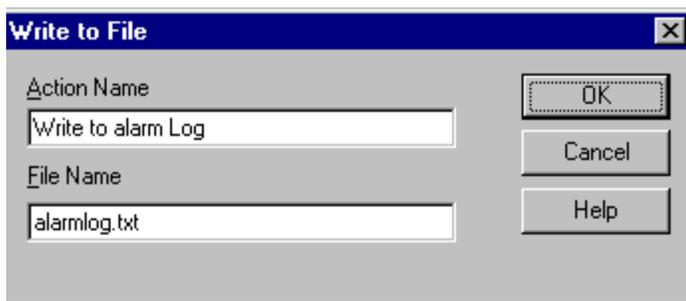
*Configure Rules*

Use the Rules tab to define new rules, update or delete rules, and set the order for applying rules to the data stream (Figure 72).

> **Note:** The order in which the rules appear is important. You should order the rules so that the more specific pattern matches occur before the more generic ones. If a generic pattern rule is matched before a more specific pattern rule is tested, the action associated with the generic rule is executed and no additional rule matches are done.

**Figure 72**   Rules Manager—Rules Tab
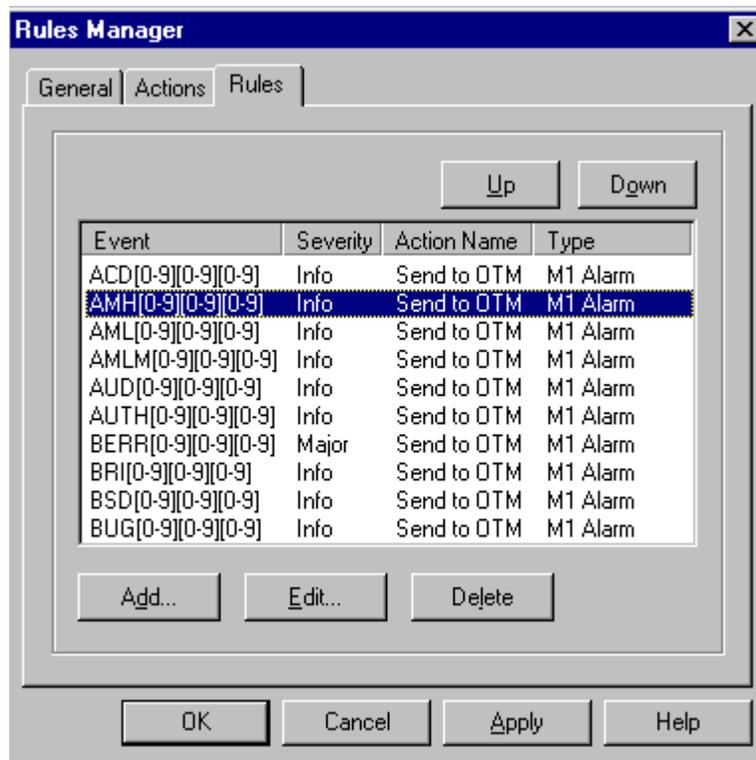


**1**   Select an event from the displayed list and click one of the following buttons.

*   Up or Down - Moves the selected event up or down one position in the list.

- **Add** - Opens the New Rule dialog box shown in Figure 73. see "Define a New Rule".
- **Edit** - Opens the dialog box to change the selected rule.
- **Delete** - Select the event and click the Delete button to delete the rule.

After you define the rules, use one of the following buttons:

- **OK** - Saves the rules in the configuration file and close the Rules Manager window.
- **Cancel** - Discards any changes to the rules and closes the Rules Manager window.
- **Apply** - Saves the rules in the configuration file. The file remains open in the Rules Manager window, allowing you to make changes to the file.

**Define a New Rule**

The New Rule dialog box shown in Figure 73 provides a list of the types of rules you can define. You can configure the rules for an M1 Alarm, Meridian Mail Alarm, or a generic event. For example, an M1 Alarm rule can match a Meridian 1 or Succession CSE 1000 system alarm code. A match records the data provided with the alarm. A rule for a generic event is for a system other than those listed.

**Figure 73** New Rule dialog box
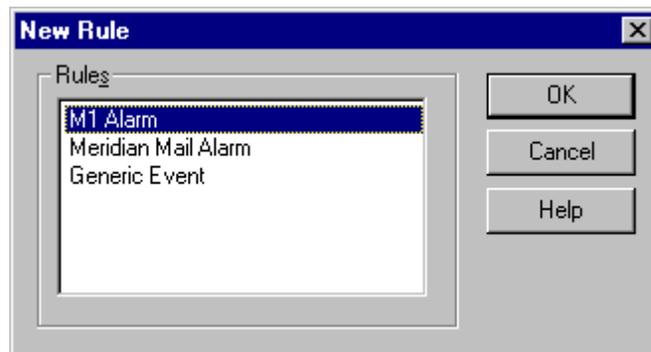


**M1 Alarm dialog box**

The M1 Alarm dialog box shown in Figure 74 defines the values for an M1 Alarm rule.

The *Event* edit box defines the text that will be used to determine if a match is found in the data stream. The *Event* field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The *Severity* field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical and Clear. The default value is Info.

The *Action Name* field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank meaning no action will occur if an event match occurs.

**Figure 74**   M1 Alarm dialog box
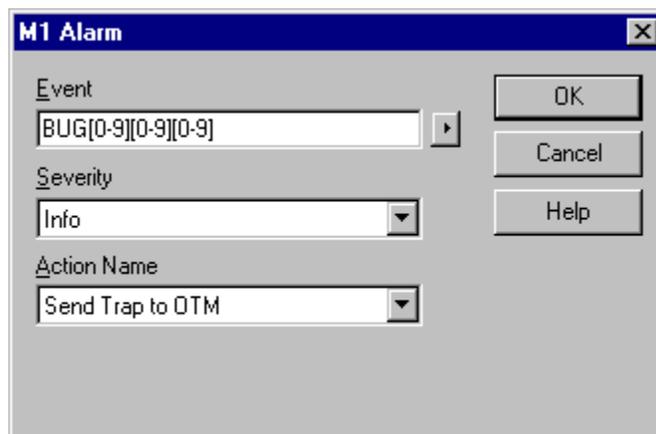


**Meridian Mail Alarm dialog box**

The Meridian Mail Alarm dialog box shown in Figure 75 defines the values for a Meridian Mail Alarm rule. The *Severity Level* field contains a list of predefined severity levels. The values provided are Information (INF), Minor (*), Major (**), Critical (***), Clear (OFF) and All. This allows the user to define the Meridian Mail severity level in the data stream, which is used in addition to the Event, to determine if a match is found. The option to chose All for severity level was added to allow the user to match the event regardless of the severity level sent from Meridian Mail.

The *Event* field defines the text that will be used to determine if a match is found in the data stream. The *Event* field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options. See Regular Expression Menu Button for more details.

The *Severity* field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical and Clear. The default value is Info.

The *Action Name* field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank meaning no action will occur if an event match occurs.

**Figure 75**   Meridian Mail Alarm dialog box
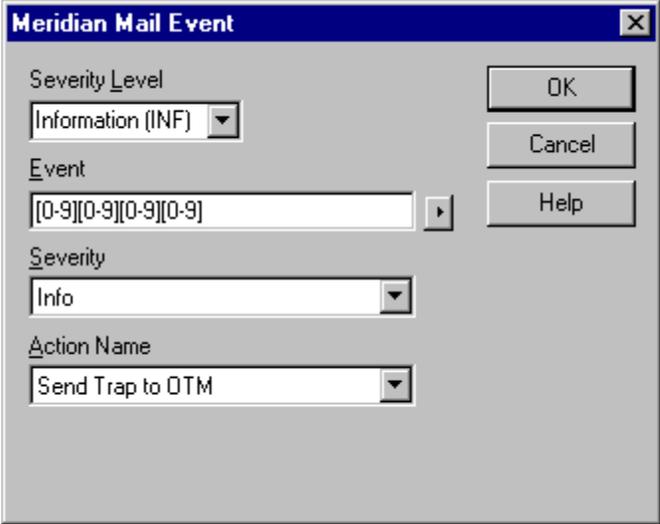


**Generic Event dialog box**

The Generic Event dialog box in Figure 76 allows you to define the values for a generic event rule. Generic systems are not Meridian 1 or Succession CSE 1000 systems.

The *Event* edit box defines the text that will be used to determine if a match is found in the data stream. The *Event* field accepts regular expressions for performing complex text comparisons. The menu button beside the field provides a list of regular expression options.

The Number of Lines in Event field defines the number of lines in the data stream to capture. The values are 1 to 5 (0 is the default). A value of zero records the event only.

The *Severity* field contains a list of predefined severity values. The values provided are Info, Warning, Minor, Major, Critical and Clear. The default value is Info.

The *Action Name* field contains a list of actions by action name. This list is dynamically created using the actions defined on the Actions page of the Configuration Property Sheet. The default value is blank, which means that no action will occur if an event match occurs.

**Figure 76**   Generic Event dialog box
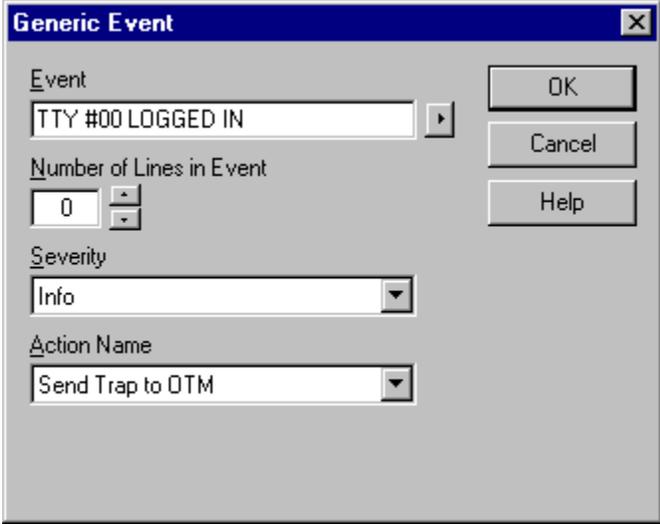
## Schedule a Backup or Retrieval

DBA allows you to schedule a single or routine backup of your Meridian 1 or Succession CSE 1000 system's database files. On an Option 11C or Succession CSE 1000 system, you can schedule the retrieval of buffered CDR and Traffic data from the Meridian 1 or Succession CSE 1000 system to the PC.

The following procedure describes how to schedule either operation in DBA.

> →  **Note:** A scheduled job does not configure the Meridian 1 or Succession CSE 1000 system. Use the correct LD 117 settings (DBK and BUF) for the Meridian 1 or Succession CSE 1000 system.

**1**  Select File > Schedule in the DBA main window.

The Select a M1 System for Scheduling dialog box opens.

**2**  Use the dialog box tree to select the Meridian 1 or Succession CSE 1000 system you want to schedule.

**3**  Click OK, or double-click on the selected system, to confirm your selection.

The Scheduled Job Properties dialog box opens (Figure 77).

**Figure 77**   Scheduled Job Properties dialog box



**4**  To change your system selection, click on Change to return to the last dialog box.

**5** (Optional) Enter the Host Name of the System in the indicated field.

> ➡ **Note:** The Host Name, IP Address, User ID, and Password data for the selected Meridian 1 or Succession CSE 1000 system are stored in the OTM database. The DBA application automatically fills these fields with the values from the OTM database. In the Scheduled Job Properties dialog box, these fields are read-only. If the values are not correct, enter the correct values in the OTM Navigator System Properties.

**6** Click on the check box of the operation you want to schedule:

M1 Database Backup - back up Meridian 1 or Succession CSE 1000 database files.

Data Retrieval - retrieve buffered CDR and Traffic data from the Meridian 1 or Succession CSE 1000 system.

> ➡ **Note:** The Data Retrieval check box only functions for Option 11C and Succession CSE 1000 systems. Data retrieval is only available for systems that are defined as Option 11C, Option 11C Mini, or Succession CSE 1000 in the OTM Navigator database.

**7** Click OK to confirm your settings.

The Scheduling dialog box opens (Figure 78).

**Figure 78** Scheduling dialog box



**8** Schedule the job by completing the items in the Scheduling dialog box and clicking the OK button.

## View session data

In a live session, you can view the collected CDR, Traffic, and serial data, and the session data collection statistics (Figure 79).

**Figure 79**   Sample session window displaying Statistics
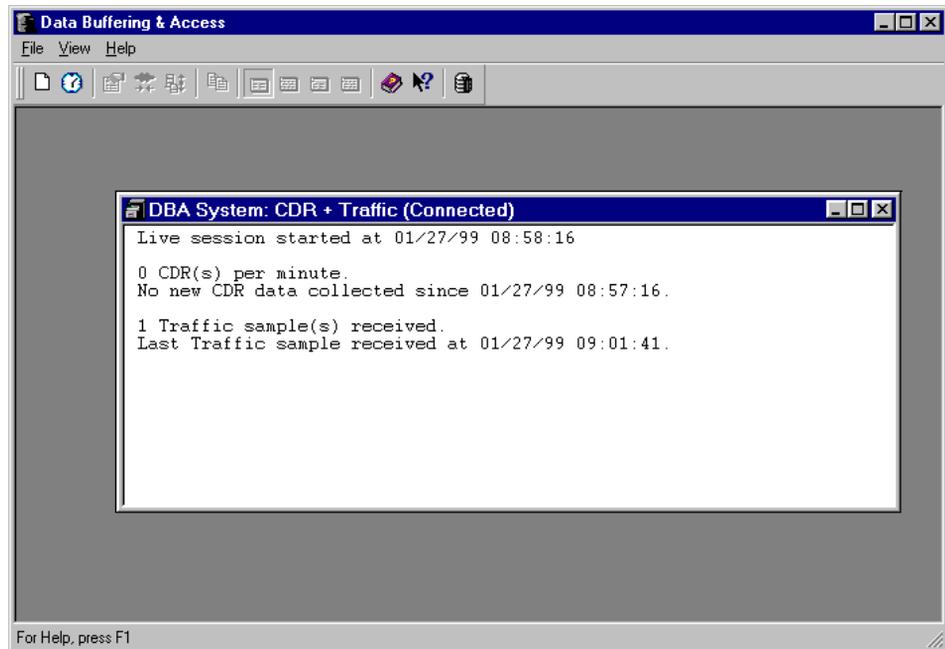


From the View menu, select one of the following:

• CDR Data to display a snapshot of CDR data collected by DBA (up to the last 15 minutes).

• TRF Data to display a snapshot of Traffic data collected by DBA (up to the last 15 minutes).

• Statistics to display the average number of CDRs per minute, the time of the last Traffic Sample, and the time of the last serial data connection.

• Refresh to update CDR, Traffic, and serial data views with the latest collected data.

You can use the following Edit menu commands to handle text in the session window.

• Copy to copy text from the session window.

• Select All to select all text in the session window.

• Find to locate selected text in the session window.

### Retrieving CDR data from Survivable IP systems

When in survival mode, the survivable expansion cabinets and survivable media gateways operate as if they are standalone Option 11C or Succession CSE 1000 systems. Call Detail Records (CDR) and Traffic Measurements (TRF) are only generated by the expansion cabinets and the media gateways when the systems are operating in survival mode.

In the event that an expansion cabinet or media gateway enters survival mode, it is possible to collect CDR records from the expansion cabinet or media gateway. These records must be manually retrieved, using the XModem procedure, when the expansion cabinet or media gateway returns to normal mode.

#### *XModem procedure*

Call Detail Records (CDR) are only generated by the Option 11C survivable cabinets and the Succession CSE 1000 survivable media gateways when the system is running in survival mode. The CDR are deleted from the survivable cabinet or survivable media gateway once they have been successfully transferred to the PC. The XCDR command in LD 143 transfers the CDR file from the Option 11C expansion cabinet or the Succession CSE 1000 media gateway directly to the OTM PC. There is one CDR file stored on each expansion cabinet or media gateway.

To retrieve the CDR files stored on the survivable expansion cabinets or the survivable media gateways using XModem:

1   Establish a connection between the PC and the main cabinet of the Option 11C or the call server of the Succession CSE 1000

    This may be done either remotely through the use of a modem or directly through the use of a serial cable and a modem eliminator.

2   Use a terminal emulation program such as HyperTerminal to begin a TTY session with the Option 11C or the Succession CSE 1000 system using either the modem or SDI cable.

3   From the PC, enter LD 143 and type XCDR.

4   When the system asks for an expansion cabinet number, enter the number assigned to the expansion cabinet or media gateway that contains the dba.cdr file that you want to retrieve.

The system will respond:

```
Getting CDR file for EXP_CAB <num>
Ready to transmit...
```

**5**  You must invoke the XModem protocol on the PC to receive the CDR file. For example, use the HyperTerminal transfer function to receive the file using XModem protocol.

**6**  Name the file.

You may give any name you want to the file being received.

> →  **Note:** Use a file name that will not overwrite any DBA specific files if DBA is used to retrieve CDR/Traffic files from the main cabinet of the Option 11C or the call server of the Succession CSE 1000 system.

**7**  Parse the file into the main cabinet or call server's database on the PC.

For information on importing CDR data into Billing applications, please refer to *Using Optivity Telephone Manager Telemanagement Applications* (553-3001-331).

## M1 Database Disaster Recovery

M1 Database Disaster Recovery provides a quick way to perform a Meridian 1 or Succession CSE 1000 database backup and restore, or to schedule a database backup. You can schedule or manually start a backup operation, and the application connects to the switch and retrieves the database files. You can manually start a restore operation to restore the database file to the Meridian 1 or Succession CSE 1000 system.

> →  **Note:** M1 Database Disaster Recovery runs separate from the normal Meridian 1 and Succession CSE 1000 database backup feature: Electronic Data Dump (EDD).

The M1 Database disaster recovery feature is available for all Meridian 1 and Succession CSE 1000 systems that are configured in the OTM Navigator. Since survivable expansion cabinets and survivable media gateways are configured as separate systems in the Navigator, the Disaster Recovery feature is available to both the main cabinet, or call server, and the survivable expansion cabinets, or

media gateways. You do not need to backup the expansion cabinets and media gateways. Any data that is restored to an expansion cabinet, or media gateway, while it is operating in survival mode will be overwritten by the database of the main cabinet, or call server, when the system returns to normal mode.

To perform a database backup or restore:

**1** Open and select a session window.

**2** Select M1 Database Disaster Recovery from the File menu.

The M1 Database Disaster Recovery dialog box opens (Figure 80).

**Figure 80** M1 Database Disaster Recovery dialog box
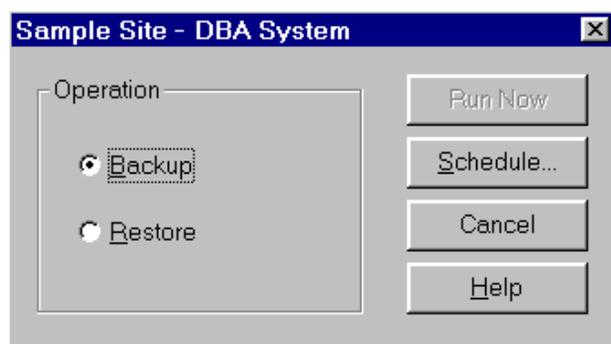


Click on one of the two radio buttons to select an operation:

— Backup - back up Meridian 1 or Succession CSE 1000 database files to the PC.

**Note:** A backup can be run on a PC that is not the PC used for collecting live CDR and/or Traffic data.

— Restore - transfer earlier backed up Meridian 1 or Succession CSE 1000 database files from the PC to the Meridian 1 or Succession CSE 1000 system.

⚠️ **Warning:** The Restore operation overwrites the existing database files on the Meridian 1 or Succession CSE 1000 system. Before you use the Restore operation:

•   Make sure that your back up files are valid.

•   Make sure that no other PC is performing a Backup or Restore.

**3**   Select one of the following buttons:

•   Run Now to begin the selected operation

•   Schedule to indicate a time for routine database backup. You cannot schedule a restore. The OTM Scheduling dialog box opens. Use the dialog box to schedule your database backup. .

The DBA application displays the status of the backup or restore operation.

## Hide and restore the DBA main window

To maintain a live data session, you must keep the DBA main window open continuously. To minimize screen congestion, hide the DBA main window to remove it from the Windows Desktop. DBA remains active and the DBA tray icon continues to appear on the Windows Toolbar.

To hide the DBA main window do one of the following:

•   Select Hide Application from the View menu.

•   Click the Hide Main Window button on the toolbar.

•   Double-click the DBA tray icon.

To restore your DBA main window, double-click the tray icon.

You can right-click on the tray icon to display a pop up menu containing the menu items, Hide Window or Restore Window. Use these commands to hide or restore the DBA main window, or select Exit to end the program.

# Utilities

## Scheduler

This section contains a general overview of the Scheduler. For more information about how to use the Scheduler windows, refer to the Scheduler online Help.

The Scheduler schedules an Optivity Telephony Manager activity (or any Windows application activity) for processing at a later date and time. With Scheduler, you can define the intervals you want to run the activity. If there are multiple tasks in a job, you can assign the tasks in a sequential order using the queue function.

The Scheduler normally runs in background mode. This means that if an OTM application is due to run at a certain time, the Scheduler automatically runs it at that time without interrupting current sessions.

> **Note:** The Scheduler must be running in the Windows environment at the time an event is to run. You can start the Scheduler application any time. An event and its tasks do not execute if the Scheduler is not running at the scheduled time.

### Access the Scheduler

There are two ways to access the Scheduler:

- From the OTM Navigator, choose Utilities > Scheduler and schedule the activity directly.
- From any supported application select the Schedule command where it appears in that application. For example, you can click Schedule in the Reporting dialog of the Telecom Billing System. You can use the Scheduler functions to enter the information to schedule this application.

### Jobs and tasks

The Scheduler represents scheduled activities (such as, data collection, synchronization and reporting) as jobs and tasks.

*What is a job?*

A job contains the scheduling properties of an activity. This includes such information as the activity's: initial execution time; interval for additional executions; status; name; and queue assignments. The job also contains the actual task that identifies the activity's actions. That is, each task that runs that actual activity will be assigned to a job. This way, the task can be scheduled. Only jobs can be scheduled; individual tasks cannot be scheduled without a job.

*What is a task?*

A task contains the actual command used to invoke the activity from the OTM application. This includes such information as the activity's: command line (the code used to invoke the activity); its priority in the list of tasks (when it should be executed in relation to any other tasks in the list); and any dependencies associated with it (physical resources on your PC that are needed to execute the activity).

In most cases, one job will have one task. This simplifies the process of defining and scheduling activities. You would simply schedule the activity, assign it as a task to a job, and then enter its scheduling criteria. There are instances, however, when it would be beneficial to assign multiple tasks to a single job (e.g., in situations where you wish to run multiple tasks all at the same scheduled time). The Scheduler allows you to assign multiple tasks to each job after they have been defined.

## Execution of tasks in the Scheduler queue

Any task in the Scheduler queue can be executed immediately by right clicking the task in the Scheduler window and selecting Start Now. Tasks in the queue that have the same priority and are scheduled to occur at the same time are executed simultaneously. When tasks in the queue have different priorities and are scheduled to occur at the same time, the higher priority tasks execute first and are followed by the lower priority tasks.

## About the Scheduler window

The following sections describe the Scheduler window and the menus of the Scheduler.

The main Scheduler window (Figure 81) contains sections which list the scheduled jobs and queues. These sections provide the interfaces for the Job, Queue, and Dependency Queue Managers and list the running tasks for each job. Use these sections to view and access your jobs and queues.

**Figure 81** Scheduler window
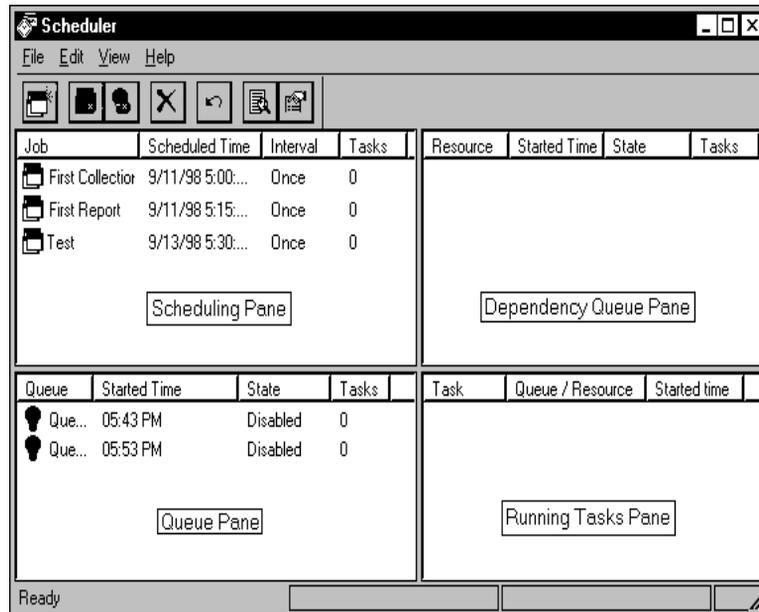


The main Scheduler window contains the following information sections.

### Scheduled jobs section

The Job Manager displays the details of all of the scheduled jobs in the top left section of the window. The display shows the job name, scheduled date and time for initial execution, intervals, and number of tasks in the job.

### Job in the queue section

The Queue Manager displays the current status of jobs in the queue in the bottom left section of the window. When the last task of a job completes, the queue record disappears.

*Dependency resource section*

The top right section of the window displays the current status of the dependency queues whose tasks are executing. The Dependency Queue Manager displays the information. A dependency queue is a collection of tasks requiring the same system resource (e.g., two tasks need to access a COM port at the same time).

The following describes the properties of a dependency queue's tasks.

- Each task in the dependency queue is a top task of some queue.
- The order of tasks in the task list of a dependency queue defines the order of task execution.
- You can move tasks in the list up or down or edit tasks, except a task that has started processing.
- When a task completes, its record disappears from the task list.
- Tasks requiring more than one system resource appear in more than one dependency queue. If you delete a task record from one dependency queue, the task record is automatically deleted from other dependency queues.

*Tasks running section*

The bottom right section shows the tasks that are running now. From here, you can delete any running tasks. When deleted, a task is no longer monitored by the Scheduler. If you delete a task, the application containing that task continues to run.

*File Menu*

From the File menu commands you can manage the Scheduler jobs and queues and exit from the Scheduler. Use the Help command to get detailed descriptions about the functions of each command.

*Edit Menu*

The Edit menu allows you to manage defined jobs or queues. Use its commands to enable or disable the defined jobs or queues. Use the Help command to get detailed descriptions about the functions of each command.

*View Menu*

The View menu allows you to:

- display or hide the Scheduler's toolbar and status bar
- view the task list of the highlighted job or queue
- arrange the jobs or queues within each section of the window

# Import and Export Utilities

This section contains a general overview of the Import and Export utilities. It describes their basic function and purpose.

The Import and Export utilities are used to import and export data to and from the Optivity Telephony Manager (OTM) data base files. These tools allow you to share data between the OTM data bases and other applications.

Examples of situations in which you would find the Import and Export utilities useful are:

- If you are installing a new Meridian 1 or Succession CSE 1000 system, and already have a source that contains user data (i.e., Names, Departments, Managers), you may import these fields into the OTM Directory. You can then use Station Administration to assign telephones to the imported user records.
- Synchronizing with an LDAP database to complete the unique identifier (UID) fields.
- The OTM Directory can be exported for external telephone book generation or for importing into other external data bases.

## Import utility

The Import utility is used to import data records from an external source to a specific site/system and convert them to a format compatible with the OTM data bases. This function is useful for quickly updating your data bases with data from another application.

When importing data, you can select from a predefined import configuration or you can define your own configuration. The following paragraphs outline how to import data using a predefined and custom configuration. Review the information later in this section for details on the functions and dialogs used to perform these steps.

*Import data using a predefined configuration*

To import data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records and their field parameters (character length, position etc.). OTM includes a set of predefined import configurations for common data base types. You can then select the source from where you will import the data (e.g., disk drive, CD-ROM etc.).

The following is a summary of the steps required to import data using a predefined configuration.

**1**   Access the Import utility.

**2**   Select the import configuration components.

**3**   Define the import configuration.

**4**   Import the data.

*Import data using a custom configuration*

To import data using a custom configuration, you must first define the import configuration. This configuration outlines the parameters of the data being imported. This includes such information as the format of the data, the types of records and their field parameters (character length, position etc.). You can then select from where you will import the data (e.g., disk drive, CD-ROM etc.).

The following is a summary of the steps required to import data using a custom configuration.

**1**   Access the Import utility.

**2**   Define the import configuration components.

**3**   Define the import configuration.

**4** Import the data.

## *Access the Import utility*

To import data using a predefined or custom configuration, access the Import utility. Depending on which application you are using, the Import utility may be accessed from several locations.

For example, if you are accessing the Import utility from the OTM Telecom Billing System, then you would click File | Import from its main window. The Import dialog will appear allowing you to select from a list of predefined configurations or add your own custom configuration. Once you have selected the predefined configuration and the source directories, click Go to import the data.

## *Selecting import configuration components*

The Import (Select an Import Configuration) function is used to select a predefined import configuration. To select a predefined import configuration:

**1** Click the import configuration name from the "Select an Import Configuration" drop-down list box.

**2** To define the components of the imported file, click the ellipsis command button (**…**). The Import Configuration Definition dialog will appear allowing you to select the tables or data bases you wish to import.

**3** Once you have selected the predefined configuration and the source directories, click Go to import the data.

## *Import configuration list*

If you are creating a new import configuration, then clicking the ellipsis command button (…) will access the Import Configurations List dialog. The Import Configurations List dialog contains a list of predefined import configurations. To create a new configuration:

**1**   Click Add. This will access the Import Configuration Definition dialog where you can enter the importing information.

> **Note:** To edit an existing configuration, click the name of the configuration and click Edit. Again, this will access the Import Configuration Definition dialog where you can enter the new definition.

**2**   To select an import configuration, click the name of the import configuration name to highlight in the list and OK to select it.

### *Defining an import configuration*

The Import Configuration Definition function is used to select and define the type of data being imported into the OTM data bases. Enter the following information to define the import configuration:

**1**   Configuration Name: Enter the name of this configuration. The name helps to identify this configuration from others in the Import Configurations List.

**2**   Tables/Database menu tree: Select the type of tables into which the data will be imported. For example, if you are importing data into the OTM Telecom Billing System, you can select from: Call Records; Organization Levels; and Tax Types to import data into these data bases.

**3**   File/Database Type: From this drop-down list box, select the type of data being imported. Select from the following:

   — dBase IV
   — Excel 5
   — Microsoft Access
   — ODBC Data Source
   — Text File (Comma Separated Values)
   — Text File (Fixed Width)

**4**   File/Database Location: To select the source of the imported data base file (i.e., the directory or drive from which the file will be imported), click the ellipsis command button (**…**) next to the File/Database Location field. From the Directory Location Form dialog that appears, select the drive and directory of the data base file being imported and click OK. Notice that this will appear in the File/Database Location field.

5   Import Profile Format: To select the format of the imported file, click the Format button. This will access the Import Format dialog in which you can select the field properties for the imported file.

6   File/Table Name: From this drop-down list box, select the filename of the data base being imported.

7   Update Activity: This option determines how this data base will be updated. Select from the options listed in Table 11.

**Table 11**   Import update activity options

| Option | Meaning |
|---|---|
| Append non matching | Appends non-matching records |
| Update matching | Updates matching records |
| Update matching or append | Either updates or appends as appropriate |
| Delete matching! | Deletes matching records |
| Delete all rows then append! | Purges entire table before appending |
| Recreate table then append! | Drops and recreates table before appending |

8   Purge records after writing: Turn on this check box to delete the records from the source file after they have been successfully written to the destination file.

> **Note:** This action is not reversible. Therefore, use caution if selecting this option.

9   Description: This field describes the contents of the table selected from the Tables/Database Name menu tree.

10  Once you have entered this information, click OK to save these edits and return to the previous dialog.

### *Import data*

11  Once you have selected the import information, click **Go** to proceed. The Import utility will then attempt to import this data into the site/system files.

*Example data import*

The following example will demonstrate how to import data using a predefined configuration.

This example outlines how to import data from the MAT Call Accounting Employee Database to a site/system while running the OTM Telecom Billing System. This example uses a fictitious import configuration entitled: MAT Import. For this example, the Employee Database file is located in C:\MAT. The filename is EMPLOY1.DAT.

**a** From the Telecom Billing System main window, click File | Import. The Import dialog appears.

**b** From the Select an Import Configuration drop-down list box, select MAT Import.

**c** To select the import values, click the ellipsis command button (…). The Import Configuration dialog appears.

**d** From the data base name menu tree, select Employee Database.

**e** To select the source of the imported data base file, click the ellipsis command button (…) next to the File/Database Location field.

**f** From the Directory Location Form dialog, select: C:\MAT and click OK.

**g** From the File/Table Name drop-down list box, select: EMPLOY1.DAT.

**h** From the Update Activity drop-down list box, select the default: Append All.

**i** To proceed with the data import, click Go.

*Restore Call Database using Import utility*

This example demonstrates how to restore the Telecom Billing System's Call Database from the A: drive. To restore the Call Database, perform the following steps.

**a** Access the Import utility by clicking File | Import from the Telecom Billing System main window.

**b** Select Merge CDR/Costed Data as the Import Configuration.

**c** To define the parameters for this restore operation, click the ellipsis command button (…) next to this list box. The Import configuration dialog appears listing CDR/Costed Data Merge as the destination (To Telecom Billing System).

**d** In the File/Database Location field, enter the source of this restore operation. For example, enter: A:\ for a floppy disk drive. Click the ellipsis command (…) to view a list of available drives.

**e** If you wish to restore a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.

**f** In the Filters dialog that appears, create a new filter definition and enter the range of call dates for this filter.

**g** Select this new filter name from the Filter drop-down list box.

**h** Click Go to proceed with the restore operation.

## Export utility

The Export utility is used to export data from the OTM data bases to an external source. This is useful for archiving a range of data for later retrieval. For example, if you wish to archive a range of CDR data to an external source, then you would use the Export utility to select a range of data and specify the external source.

When exporting data, you can select from a predefined export configuration or you can define your own custom configuration.

### *Export data using a predefined configuration*

To export data using a predefined configuration, you must first select the configuration and its component values. This configuration outlines the parameters of the data being exported. This includes such information as the format of the data, the types of records and their field parameters (character length, position etc.). OTM includes a set of predefined export configurations for common data base types. You can then select to where you will export the data (e.g., disk drive, CD-ROM etc.).

The following is a summary of the steps required to export data using a predefined configuration:

**1** Access the Export utility.

2    Select export configuration components.

3    Define export configuration.

4    Export the data.

### *Export data using a custom configuration*

To export data using a custom configuration, you must first define the export configuration. This configuration outlines the parameters of the data being exported. This includes such information as the format of the data, the types of records and their field parameters (character length, position etc.). You can then select to where you will export the data (e.g., disk drive, CD-ROM etc.).

The following is a summary of the steps required to export data using a custom configuration:

1    Access the Export utility

2    Define export configuration components

3    Define export configuration

4    Export the data

### *Access the Export utility*

To export data using a predefined or custom configuration, access the Export utility. Depending on which application you are using, the Export utility may be accessed from several locations.

For example, if you are accessing the Export utility from the Telecom Billing System, then you would click File | Export from its main window. The Export dialog will appear allowing you to select from a list of predefined configurations or add your own custom configuration. Once you have selected the predefined configuration and the source directories, click Go to export the data.

### *Select export configuration*

The Export (Select an Export Configuration) dialog is used to select a predefined export configuration. To select a predefined export configuration:

1   Click the export configuration name from the "Select an Export Configuration" drop-down list box.

2   To define the components of the exported file, click the ellipsis command button (…). The Export Configuration Definition dialog appears allowing you to select the tables or data bases you wish to export.

    If you are creating a new export configuration, then clicking the ellipsis command button (…) will access the Export Configurations List dialog.

3   Once you have selected the predefined configuration and the destination directories, click Go to export the data.

*Export configurations list*

The Export Configurations List dialog contains a list of predefined export configurations. To create a new configuration:

1   Click Add. This will access the Export Configuration Definition dialog where you can enter the exporting information.

> **Note:** To edit an existing configuration, click the name of the configuration and click Edit. Again, this will access the Export Configuration Definition dialog where you can enter the new definition.

2   To select an export configuration, click the name of the export configuration name to highlight in the list and OK to select it.

*Export configuration definition*

The Export Configuration Definition dialog is used to select and define the type of data being exported from the OTM data bases. Enter the following information to define the export configuration:

1   Configuration Name: In this field, enter the name of this configuration. This is for informational purposes and helps to identify this configuration from others in the Export Configurations List.

2   Tables/Database menu tree: From this menu tree, select the type of tables from which the data will be exported.

**3**   File/Database Type: From this drop-down list box, select the type of data being exported.

**4**   File/Database Location: To select the destination of the exported data base file (i.e., the directory or drive to which the file will be exported), click the ellipsis command button (…) next to the File/Database Location field. From the Directory Location Form dialog which appears, select the destination drive and directory. Click OK. Notice the destination you selected will appear in the File/Database Location field.

**5**   Export Profile Format: To select the format of the exported file, click the Format button. This will access the Export Format dialog in which you can select the field properties for the exported file.

**6**   File/Table Name: From this drop-down list box, select the filename of the data base being exported.

**7**   Update Activity: This option determines how this data base will be updated. Select from the following options.

**Table 12**   Export update activity table

| Option | Meaning |
|--------|---------|
| Append non matching | Appends non-matching records |
| Update matching | Updates matching records |
| Update matching or append | Either updates or appends as appropriate |
| Delete matching! | Deletes matching records |
| Delete all rows then append! | Purges entire table before appending |
| Recreate table then append! | Drops and recreates table before appending |

**8**   Purge records after writing: Turn on this check box to delete the records from the source file after they have been successfully written to the destination file.

→   **Note:** This action is not reversible. You should therefore use caution if selecting this option.

**9**   Description: This field describes the contents of the table selected from the Tables/Database Name menu tree.

**10** Once you have entered this information, click OK to save these edits and return to the previous dialog.

### Export data

**11** Once you have selected the export information, click Go to proceed. The Export utility will then attempt to export this data from the site/system files to the external device or file.

### Archiving Call Database using Export utility

This example demonstrates how to archive the Telecom Billing System's Call Database to the A: drive. To archive the Call Database, perform the following steps:

**1** Access the Export utility by clicking File | Export from the Telecom Billing System main window.

**2** Select Archive CDR/Costed Data as the Export Configuration.

**3** To define the parameters for this archive operation, click the ellipsis command button (…) next to this list box. The Export configuration dialog will appear listing CDR/Costed Data as the source (From Telecom Billing System).

**4** In the File/Database Location field, enter the destination of this archive operation. For example, enter: A:\ for a floppy disk drive. Click the ellipsis command (…) to view a list of available drives.

**5** If you wish to archive a range of call records based on their dates, then click the ellipsis command (…) next to the Filter drop-down list box.

**6** In the Filters dialog that appears, create a new filter definition and enter the range of call dates for this filter.

**7** Select this new filter name from the Filter drop-down list box.

**8** Select the Purge Records After Writing option to delete the range of call records from the original Call Database once the call records have been copied to the external source. This will clear up disk space on your PC.

**9** Click Go to proceed with the archive operation.

# Database Compact/Repair Utility

This section describes the functions and purpose of the OTM Database Compact and Repair utility. For complete details on using this utility, refer to the online Help included with the software.

Use the Compact and Repair utility to compact or repair the OTM data base files for specific sites and systems. This utility will compact or repair any Microsoft Access format data base files of the same version as OTM (e.g., Access 97).

The following are two common reasons to compact data base files:

• Increase in size

  CDR data that is accessed by OTM Telecom Billing System and OTM Directory is stored in data base files. These data base files grow as records are added and deleted. Periodically, the data base files should be compacted to increase access performance. This is especially true of very active files such as CDR data base files.

• File fragmentation

  As you update the OTM data bases, the files can become fragmented and use more disk space than necessary. Use the Compact command to compact these data bases and optimize the disk space used by these data base files. Compacted data bases can often be accessed more quickly. This will save time and system resources when you perform such operations as data base backups.

In some cases, the OTM data bases can become corrupted and may no longer be accessible by the OTM applications. Use the Repair command to try and repair these data bases so they can be accessed by these applications.

**Caution:** This utility creates a temporary copy of the data bases as they are compacted. Therefore, you must have enough disk space for both the original and the duplicate data bases. This operation will fail if the system runs out of disk space.

> **Note:** You cannot run this utility for a specific system if you are running an application within that system. Before proceeding with this utility, exit from the application that is running within that system.

To compact a data base:

**1** Click the desired system in the OTM System menu tree.

**2** Select Compact from the Utilities menu. The Compact Database dialog appears.

**3** Specify the files you wish to compact or repair and click Compact.

**Figure 82** Access Database Compact/Repair Utility window
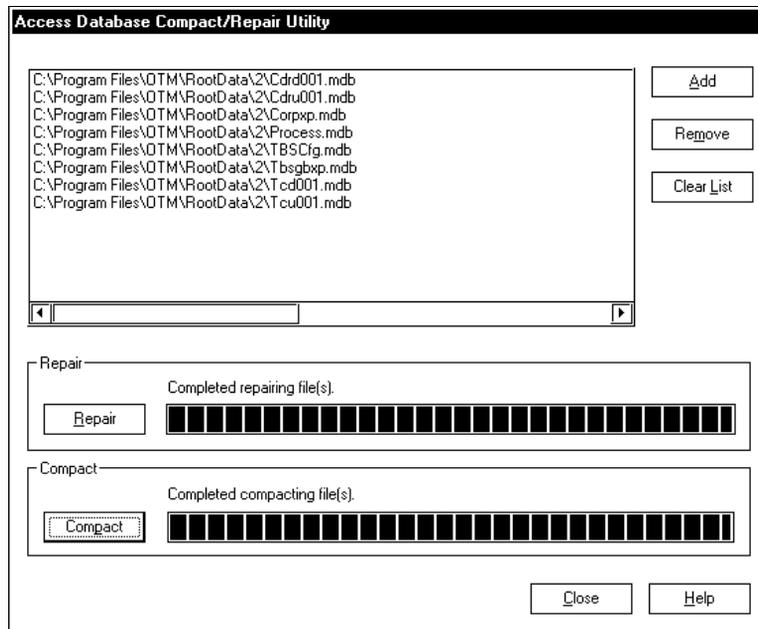
# Backup and Restore

OTM's Backup and Restore utilities provide convenient options for safeguarding, cloning, and restoring OTM data on a PC. The Backup utility lets you create a OTM backup file of PC-based system property and application data for any or all sites and systems. The Restore utility lets you restore a backup file to the same or different sites and systems on the same or other PCs.

> **Note:** The Backup and Restore utilities have no effect on Meridian 1 or Succession CSE 1000 data. To secure OTM data that has been uploaded to the system, you must use OTM's Electronic Data Dump feature described on .

## Media, files, and data types

You can create an OTM backup file on the PC's hard drive, a network drive, diskettes and other removable disks, or any other available media that meets your requirements for convenience and file space.

All backup data is written to a single folder for each backup operation. This folder includes the following files:

- Zip file (*.ZIP), the backup file in compressed format
- Log file (*.LOG), providing the backup file's date; type; OTM version; and sites, systems, and applications by name

You can back up and restore data for all or any combination of the following OTM applications:

- Telecom Billing System
- Call Tracking
- ESN
- Station Administration
- Traffic Analysis

You can back up and restore data for these applications across multiple sites and systems at the same time.

Applications are associated with specific sites and systems. All backups of application data include the system property data associated with the selected site or system.

When you restore data from a backup file, you have the option ***not*** to restore system property data. This option is useful in cases where the destination site or system is pre-configured and you do not want to overwrite its system property data. For example, system property data such as communication ports, modem configuration, and user ID and password, may be different from one PC to the next.

## Benefits

The Backup and Restore utilities provide several key benefits:

- cloning
- moving data offsite
- disaster recovery

### *Cloning*

The process of copying system property and application data associated with one site or system to another site or system is called *cloning*. Copying data to another site or system can be a great timesaver. It can save you from having to enter a large amount of similar data one item at a time.

After cloning selected data, you can simply focus on making whatever changes are necessary to the cloned data. This operation is very flexible. The destination site or system can be new or already exist, and it can be on the same PC or on another PC.

→ **Note:** If you back up data from one PC and restore it to another, you must perform this operation under the same version of OTM. You cannot back up data from a PC with an older version of OTM and then restore the data to a PC with OTM. Upgrade the older version of OTM before performing this type of cloning operation.

### Moving data offsite

If you want to maintain or occasionally modify OTM data offsite, a OTM backup file provides the solution. You can restore the backup file on any PC that has the same version of OTM installed.

When you finish modifying OTM data, create a new backup file. Then you can restore the modified data to the original or primary PC where OTM is installed.

> **Note:** This operation works particularly well for modifying application data. Remember *not* to restore system property data from one PC to another if the PCs need to have different configurations for the corresponding sites and systems.

### Disaster recovery

An important part of safeguarding your OTM data is having a disaster recovery plan. This plan should consider who makes the backups, what is backed up, how often, on what media, and where the backups are stored.

The Backup utility includes a more comprehensive backup option that is designed for disaster recovery. This option automatically backs up all sites, systems, and applications, and additionally saves user-created files such as scripts and customized reports. Consider performing this type of backup at least once a month and storing the backup file in a safe place.

In the event of unrecoverable data loss, restore your disaster-recovery backup file first. All file contents are restored to the PC. Then, if you have backups for selected sites, systems, and applications that are more recent, restore them next.

> **Note:** OTM executables and files that can be reinstalled from the OTM CD are *excluded* in a disaster recovery backup. If OTM executables have been damaged or lost due to a hard-disk crash, for example, you will need to reinstall OTM on your repaired or replaced PC before restoring your disaster recovery backup.

## Running the Backup utility

To run the Backup utility:

**1** Select Backup from the Utilities menu of the Navigator window. This invokes a wizard to help you define the following parameters:

- Type of backup (single site, single system, all sites and systems, or disaster recovery)
- Applications (TBS, Call Tracking, ESN, Station, Traffic and/or GCAS)
- Destination directory for backup files
- Temporary directory for working files created during the operation

> **Note:** The destination and temporary directory screens display a computed space requirement for the files. You can back up and restore data for these OTM applications across multiple sites and systems at the same time.

**2** The next screen to appear is a dialog box (Figure 83) that summarizes your choices. Click OK to start the backup operation, or Cancel to return to the wizard and change your options.

**Figure 83** OTM Backup Information dialog box
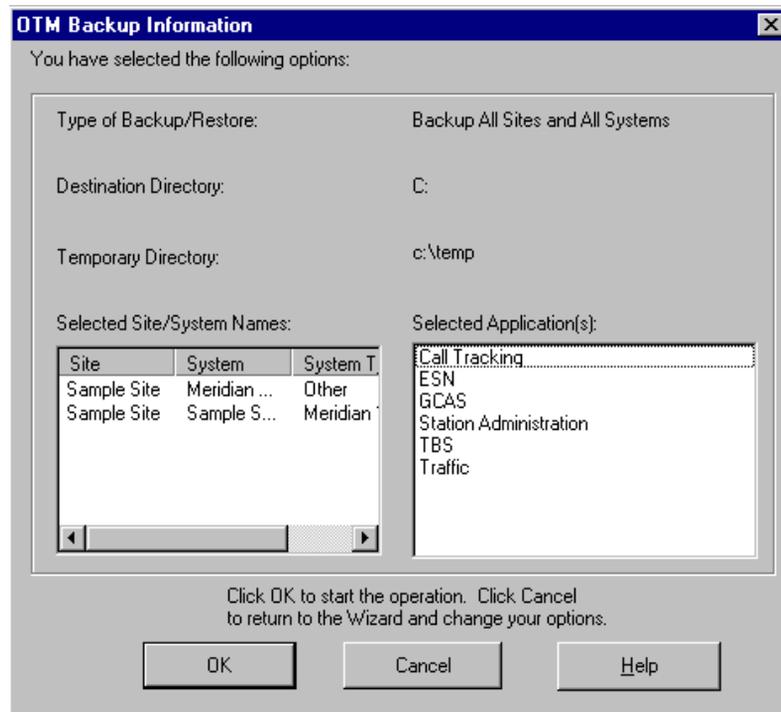


## Running the Restore utility

To run the Restore utility:

**1** Select Restore from the Utilities menu of the Navigator window. This invokes a wizard to help you define the following parameters:

- Type of restore (single site, single system, all sites and systems, or disaster recovery)

- Specific backup file and destination directory

- Temporary directory for working files created during the operation

**2** The next screen to appear is a dialog box that summarizes your choices. Click OK to start the restore operation, or Cancel to return to the wizard and change your options.

# LDAP Synchronization

The LDAP Synchronization utility synchronizes user data between the OTM Directory, Station Administration data base, and the LDAP directory. LDAP Synchronization is a scheduled activity that runs in the background, or can be performed manually.

In this section, LDAP server refers to an external corporate directory that is Lightweight Directory Access Protocol (LDAP) compliant.

OTM supports four types of LDAP servers:

- Netscape Directory
- Exchange Server
- Novell NDS
- Active Directory

> **Note:** Each type of LDAP server supported by OTM has specific constraints regarding the maximum number of characters that you are allowed to enter for a given attribute. Synchronization and update operations may fail if these limitations are not taken into consideration when entering data in the OTM directory.

There are two parts to LDAP synchronization:

- LDAP synchronizations are set up and scheduled from the Utilities menu in the Navigator window.
- When a new user is added to the LDAP compliant external corporate directory, you can manually add the user entry to the OTM directory for the appropriate Meridian 1 or Succession CSE 1000 system. Use the LDAP Synchronization menu in the System window.

Before attempting to set up LDAP Synchronization you must know the address of the LDAP server, and also values for the Search Root, Bind to Server as, and Password boxes. In addition, you must know the server type and attribute names. OTM must be given the ability to write to the LDAP server.

LDAP Synchronization is enabled for OTM Directory entries which are in the "Published" status. Only entries in the LDAP compliant external corporate directory that have matching unique identifiers (UIDs) in the OTM Directory are synchronized. You can manually enter the UIDs in the OTM Directory entries or import them using the procedure outlined in "Import and Export Utilities" on page 188.

## Setting up LDAP synchronization

To access the LDAP Server Setup dialog box:

→ Choose Utility > LDAP Setup in the OTM Navigator window

The LDAP Server Setup dialog box opens with the Directory Server tab displayed (Figure 84).

**Figure 84** Directory Server tab - LDAP Server Setup
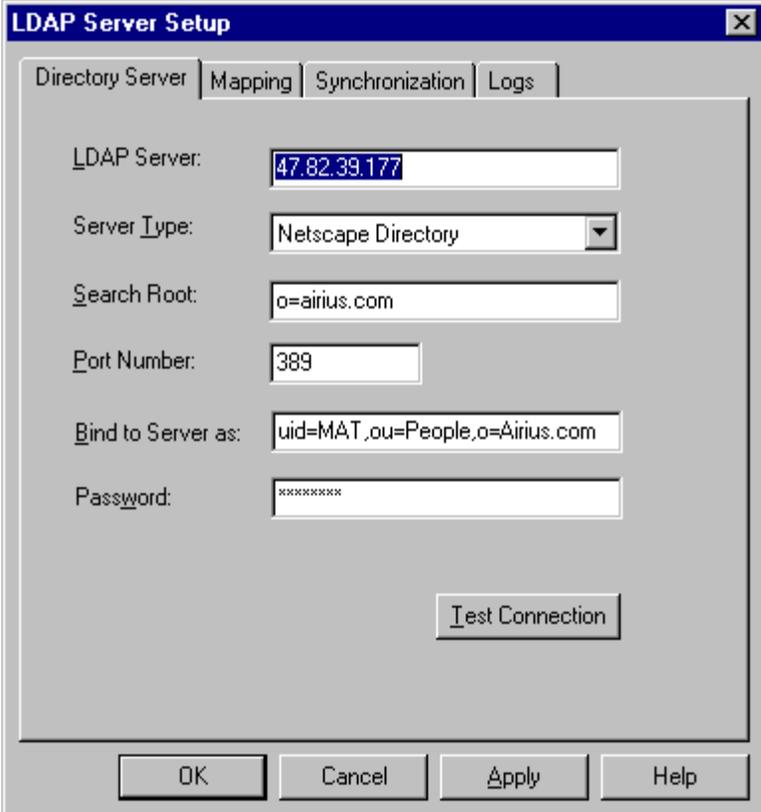


*Directory Server tab*

The Directory Server tab (Figure 84) defines the LDAP Server.

Enter the server information, then click the Test Connection button to verify the settings

> **Note:** The Test Connections button tests whether or not the server responds and verifies the LDAP Server IP address and port number only.

> **Caution:** You must click the Apply button to apply any changes made in the Directory Server tab before selecting another tab.

*Mapping tab*

The Mapping tab (Figure 85) identifies how the data between the OTM Directory and the LDAP Server is synchronized.

**Figure 85**   Mapping tab - LDAP Server Setup
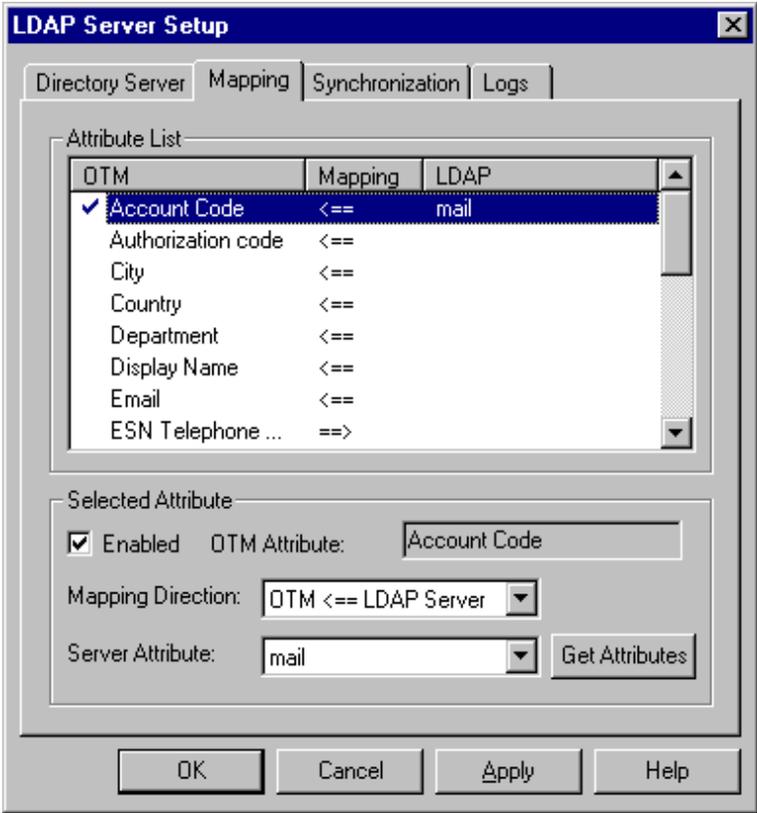


To refresh the displayed attributes on the Server Attribute drop down menu, highlight one item from the Attribute List and then press the 'Get Attributes' button.

> **Note:** You must select an attribute in the Attribute List box before you click the Get Attributes button in the Selected Attribute box.

To map individual data items, click on the OTM data element in the list, select the mapping direction, and select the associated attribute in the LDAP Server. See for more information.

Only elements which you enable via the check box are synchronized during the scheduled synchronization periods.

> **Note:** On a new OTM installation, the Display Name field is not visible in the Attribute list. The Display Name is added to the OTM Directory after synchronization with the Meridian 1 or Succession CSE 1000 system. You should perform LDAP synchronization after synchronization with the Meridian 1 or Succession CSE 1000 system.

## *Synchronization tab*

Use the Synchronization tab (Figure 86) to schedule the synchronization between the OTM directories and the LDAP Server. The list contains all Meridian 1 and Succession CSE 1000 systems defined in the OTM Navigator.

> **Note:** It is not necessary to schedule a separate synchronization for each site or system. Also, when you add new systems to the OTM Navigator it is not necessary to schedule additional synchronization tasks. Nortel Networks recommends that you modify your existing synchronization task to include the new systems,

**Figure 86**   Synchronization tab - LDAP Server Setup
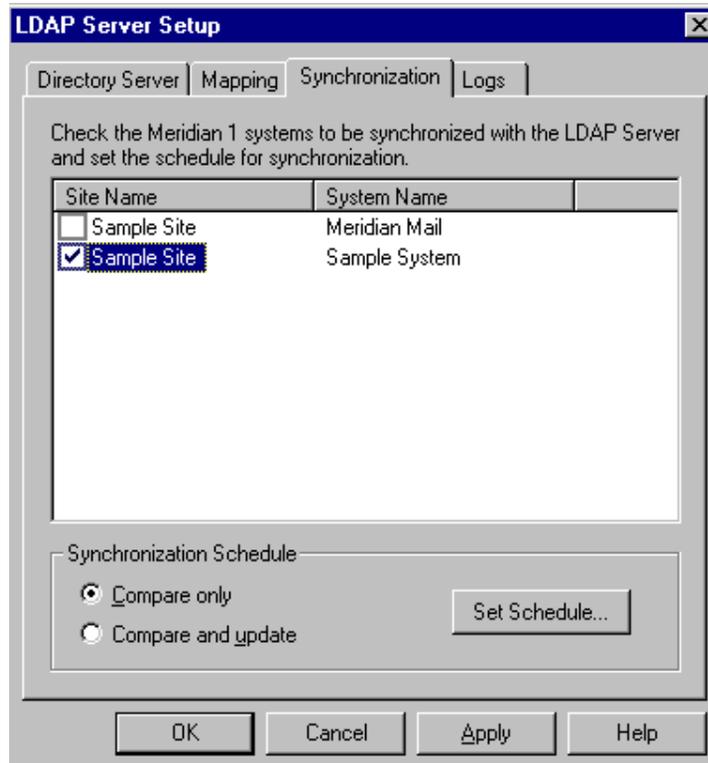


> **Note:** Scheduled synchronization will only synchronize OTM Directory entries for which the "Published" attribute has been enabled. Synchronization will also only compare or update entries which have the same "Unique Identifier (UID)" between OTM Directory and the LDAP Server. A UID can be manually set up using the LDAP Synchronization Utility (See "LDAP Synchronization Utility" on page 213), or by using the Import / Export capability (See "Importing LDAP ID (UID) Using an Entity's Extension Number (DN)" on page 218).

Check the systems to be synchronized and set the schedule. You can choose to compare the data only, or to actually perform updates.

## Logs tab

A background routine performs synchronization at the scheduled time, and stores the results in a log in an OTM directory. The Logs tab (Figure 87) displays the log files. You can open a file for viewing, or delete a file.

**Figure 87** Logs tab - LDAP Server Setup
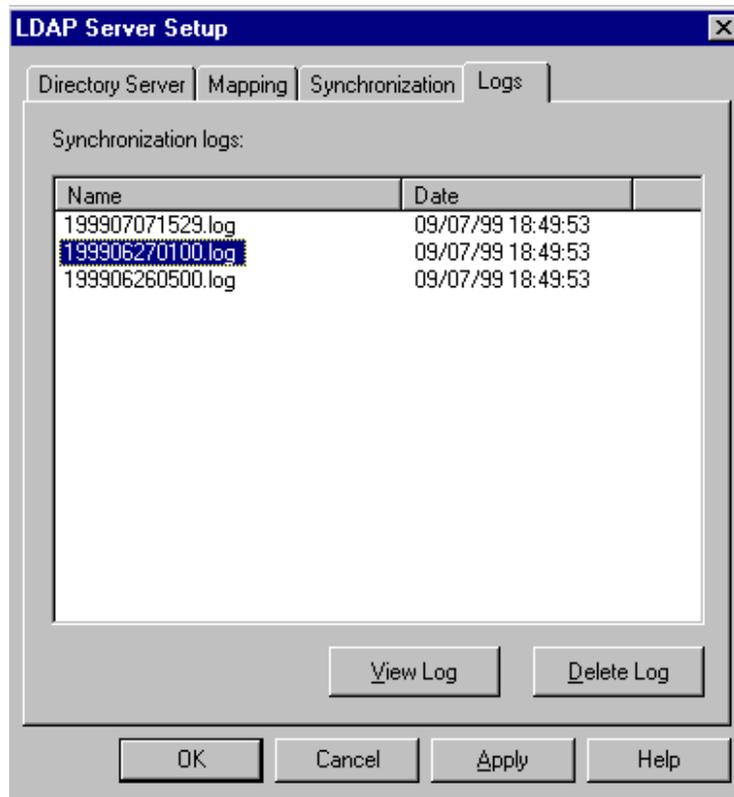


> **Note:** Synchronization results can also be viewed from the Web. See "Directory LDAP sync Report page" on page 245

*LDAP Synchronization Utility*

You can use the LDAP Synchronization window (Figure 88) to manually synchronize data between the LDAP Server and an OTM directory. In doing so, you assign a Unique Identifier (UID) for each OTM Directory Entity. To start the utility, double-click on the LDAP Synchronization icon in the System Window.

You can perform manual synchronization when a new employee is added in the LDAP Server and you want to add the employee data into the appropriate OTM directory.

**Figure 88**   LDAP Synchronization window
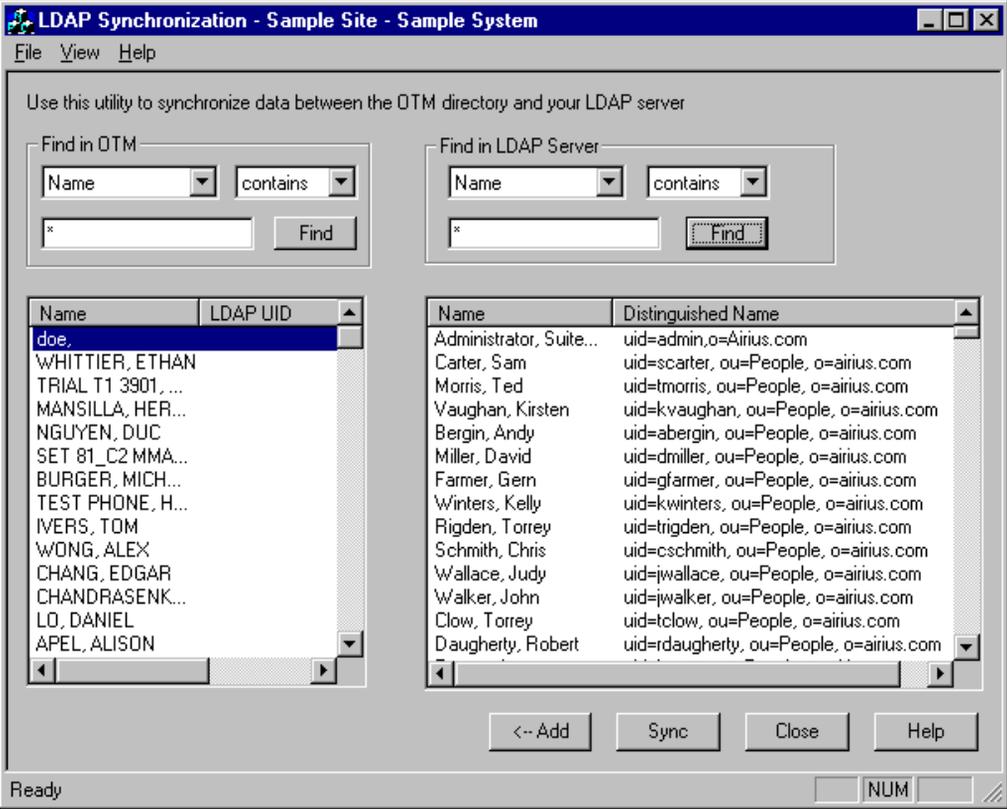
To delete a record that you may have added to the OTM Directory in error, you must use OTM Directory Services. See "Delete employees" on page 112 for more information.

> **Note:** The LDAP Synchronization window does not provide a report of success or failure in synchronizing data.

> **Note:** During the synchronization process you are not provided with a indication of progress. To estimate the time required for the synchronization process, check the start and end times for past synchronizations in the PC Event list.

## *OTM fields and LDAP attributes*

LDAP attributes are mapped to OTM fields during synchronization (or manually by clicking on the Sync button, or at a scheduled time). The fields are mapped according to the configuration set in the Mapping table (see Figure 85).

When you click the Add button in the LDAP Synchronization dialog box, the LDAP attributes shown in Table 13 are copied to the corresponding OTM fields.

> **Note:** Only the fields that are mapped from LDAP to OTM are copied when you click the Add button.

> **Caution:** UID, Last Name, and First Name must be mapped. You will receive a warning message when you exit the Mapping tab if they are not mapped.

Table 14 provides the recommended mapping between LDAP Directory attributes and OTM Directory attributes.

**Table 13**   Mapping table for Adding an Employee

| OTM Field | LDAP Attribute |
|-----------|----------------|
| UID | uid, or cn (Active Directory) |
| Last Name | sn |

**Table 13**   Mapping table for Adding an Employee (continued)

| OTM Field | LDAP Attribute |
|-----------|----------------|
| First Name | givenname |
| Job Title | title |
| Manager | manager |
| Department | department or departmentNumber (Exchange) |
| Email | mail |
| Telephone | * |
| Fax | * |
| Street/No | postalAddress |
| City | l |
| Prov./State | st |
| Postal/Zip | postalCode |

**Note:** (*) The Telephone and Fax fields are not copied during the add process.

**Table 14**   LDAP recommended mapping (Sheet 1 of 3)

| OTM Directory Attribute | Allowed Mapping Direction | Typical LDAP Directory Attribute | Comment |
|-------------------------|---------------------------|----------------------------------|---------|
| Unique Identifier (uid - new directory cross referenced field) | linkage | uid, or cn (Active Directory) | "uid" or "cn" must be entered in the OTM Directory before the synchronization routine can synchronize the entry with LDAP. |
| Identification (UsrID) | both | employeeNumber, or employeeID (Active Directory) | |
| Last Name (EmpLName) | both | sn | |
| First Name (EmpFName) | both | givenName | |
| Middle Name (EmpMName) | both | Initials | Not mapped by default. |
| Department (derived) | both | departmentnumber (Netscape, Active Directory), department (Exchange), or orgnaizationalUnitName (Novell) | Department is the end "node" of the organization path in the OTM Directory. |

**Table 14**  LDAP recommended mapping (Sheet 2 of 3)

| OTM Directory Attribute | Allowed Mapping Direction | Typical LDAP Directory Attribute | Comment |
|---|---|---|---|
| Email (Email) | both | mail | |
| Manager (ManagedBy) | both | manager (Netscape, Novell) | |
| | <== | manager (Exchange, Active Directory) | |
| Job Title (JobTitle) | both | title | |
| Station Location (derived: site-system-cross reference field) | ==> | otmFullPhoneID | Must be present if telephone attributes (extension number, external telephone number, Terminal Number, etc.) are mapped. Telephone Location consists of a "Site-System-PhoneID" string formed from the OTM site and system and the location configured in Station Administration. This allows you to uniquely identify a telephone. This is not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. |
| Display Name (NameDisplay) (new cross referenced field) | both | otmTelephoneNameDisplay | This is not a regular field in LDAP. This field contains the display name (CPND) for the Directory Numbers belonging to the user. If desired, define as a new field in LDAP for OTM. |
| Extension (cross referenced field) | both | otmTelephoneNumber | |
| External Telephone Number (ExternaltelephoneNumber (derived) | ==> | otmExternalTelephoneNumber | Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. |
| ESN Telephone Number (ESNtelephoneNumber (derived)) | ==> | otmESNtelephoneNumber | Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. |
| Terminal Number (TelephoneTerminalNumber (derived)) | ==> | otmTelephoneTerminalNumber | Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM. |

**Table 14** LDAP recommended mapping (Sheet 3 of 3)

| OTM Directory Attribute | Allowed Mapping Direction | Typical LDAP Directory Attribute | Comment |
|---|---|---|---|
| Account Code (cross referenced field) | both | otmTelephoneAccountCode | Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM. |
| Authorization Code (cross referenced field) | both | otmTelephoneAuthCode | Not a regular field in LDAP. If desired, define as a new field in LDAP for OTM. Typical mapping direction: LDAP to OTM. |
| Street/No (address) | both | postalAdress | Typical direction LDAP to OTM |
| City (City) | both | l | Typical direction LDAP to OTM |
| Prov/State (Prov/State) | both | st | Typical direction LDAP to OTM |
| Country (Country) | both | co | Typical direction LDAP to OTM |
| Postal/Zip (Postal) | both | postalCode | Typical direction LDAP to OTM |
| LoginID (cross referenced field) | | | This field allows you to associate a Web user with their OTM Directory record. For Windows NT login authentication, this field would contain the user's Windows NT Login ID. |
| Desktop User Group (cross referenced field) | | | This field allows you to assign a user template (filter) for Desktop Services. User templates are defined in the Web Navigator. |

## Importing Attributes to OTM Directory

Use the Import/Export Utility to import data from external sources to the OTM Directory. The example that follows shows how to import a UID from an LDAP database to a user with an extension number in OTM Directory. The same method can be used to import a UID using other data such as Manager's Name, E-Mail Address etc.

*Importing LDAP ID (UID) Using an Entity's Extension Number (DN)*

In the following example, the LDAP ID of a user (Alex Wong) is imported using his extension number (7409).

> **Note:** The entity should be the prime owner of the extension for this import to be successful.

**1** Create a text file that maps the extension number of the entity to his/her uid. The first row should state the name of the column: in this case column 1 is Extension and column 2 is the UID. More records can be added to the file. In this example, the file is named C:\extuidmap.txt, and contains the following text:

```
"Extension", "UID"
7409, wongldapid
```

**2** Launch the Import/Export system. This can be launched from a number of applications, e.g. Telecom Billing System (TBS). The Import Configuration dialog is displayed (Figure 89).

**Figure 89** Import configuration dialog box
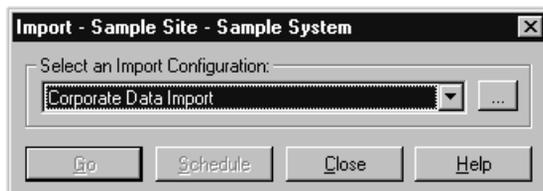


**a** Select "Corporate Data Import" from the drop down list of types of Import Configuration.

**b** Click on the ellipse button to launch the configuration.

**3** In the resulting dialog, select the file from which you want to import data. In this case, this is the text file created in Step 1. Then press the Edit button.

**4** In the Import dialog box (Figure 90), select Corporate Data Views and check the Corporate Entity View item.

**Figure 90**   Import dialog box
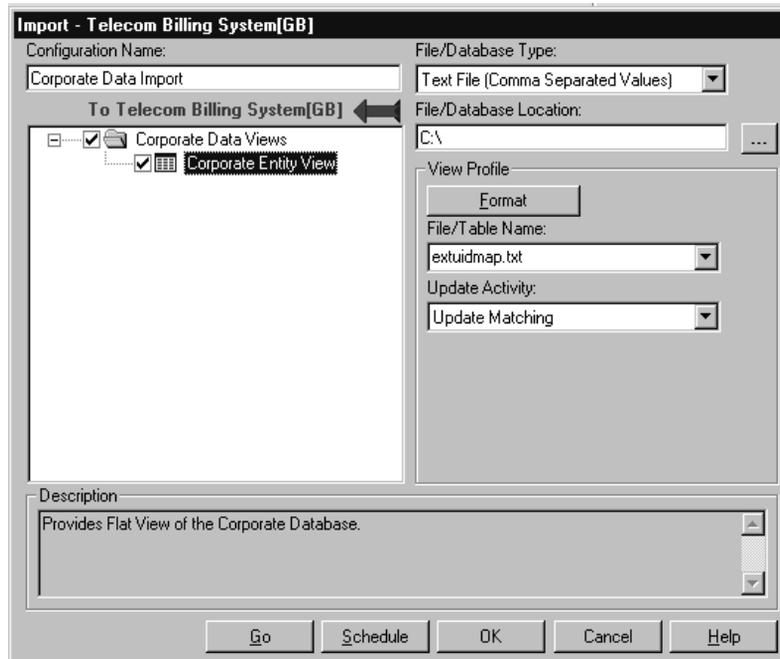


**5** Select Text File (Comma Separated Values) from the drop down list of available File/Database Types.

**6** Select the File/Database Location. In this example, the file created is stored in C:\.

**7** Select the File/Table Name. In this example, this file is called extuidmap.txt.

Select Update Matching as the Update Activity. This indicates that only records satisfying the search criteria will be updated.

**8** Click on the Format button to launch the format dialog to set the mappings.

The next step in the procedure is to map the extension and UID fields in the corporate directory to the correct columns in the text file.

**9** Using the left double arrow button, clear the Selected Columns list.

**10** Select the Extension Field by clicking on the EXTNAsset_ in the Available Columns List and then clicking on the right arrow button. This is the field in the corporate directory.

**11** To map this field to the column in the text file that was created, select the proper External Column Name. In this example, the first column in the text file was called "Extension" (as shown in Figure 91).

**Figure 91** Mapping extensions and UID field to Corporate Directory
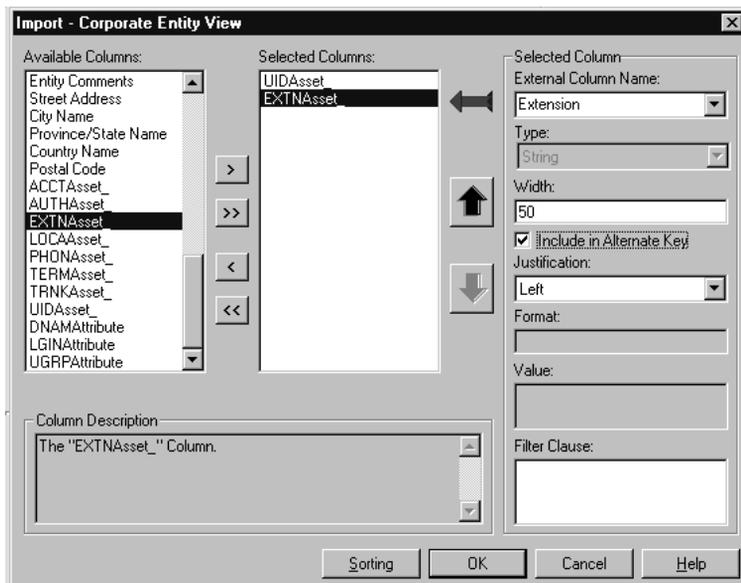


**12** Ensure to check the Include in Alternate Key check box. This means that the extension will be used as the search criteria. The system will add the LDAP ID to the entity owning this extension (i.e. the Prime Owner).

**13** Using the same procedure, select the UIDAsset_ and map it to the "UID" external column. However, ensure not to check the Include in Alternate Key check box for this field.

**14** Click on OK to close the format dialog and begin the Import. Click on the GO button in the configuration dialog (as shown in Figure 89). When the import is completed, the Corporate Data Import summary dialog box is displayed (Figure 92).

**Figure 92**   Corporate Data Import summary
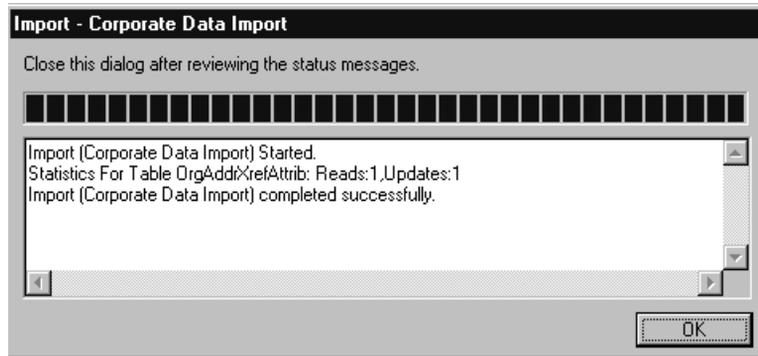


Here, we can see that one record was read in and one record was updated.

**15** The last step is to verify if the LDAP ID was added into the Corporate Directory. To do this, launch the Corporate Directory Editor. Click on the LDAP Synchronization icon, initiate a 'Find in OTM, and the Employee Record. The Employee Editor confirms that the LDAP Unique ID for this user (wonglapid) is listed (Figure 93).

**Figure 93** Employee Editor dialog box



## Client Utility

Use the Client Utility to update the OTM database when the host name or IP address of an OTM Client machine has changed. You also use the Client Utility to remove an OTM Client machine from the OTM database when you want to re-assign the Client license to a new OTM Client.

To launch the Client Utility:

→ Select Utilities > Clients in the OTM Navigator window.
The dialog box shown in Figure 94 opens.

**Figure 94**   Client Utility dialog box
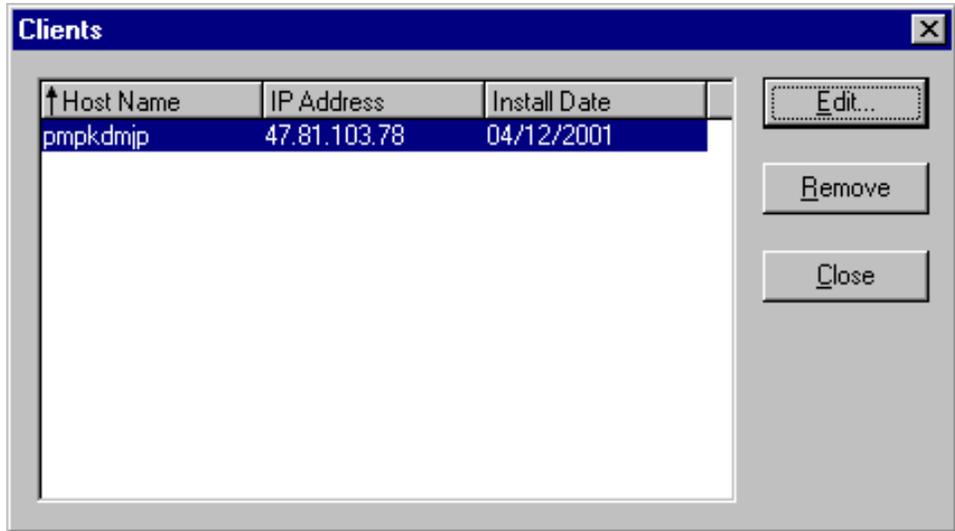
To change the host name or IP address assigned to an OTM Client:

**1**   Select an OTM Client from the Client Utility dialog box.

**2**   Click the Edit button.

The Client Properties dialog box opens (Figure 95).

**Figure 95**   Client Properties dialog box
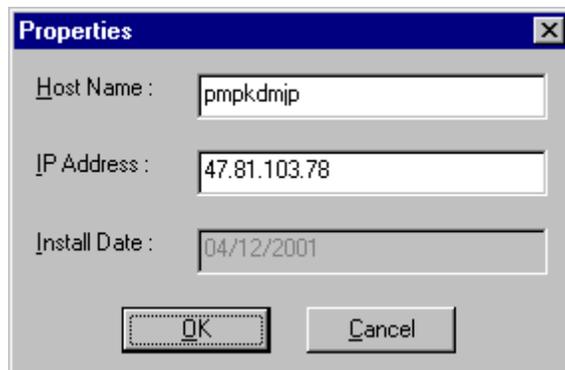
**3**   Edit the host name or IP address as required.

**4**   Click the OK button to update the OTM database.

To remove an OTM Client:

1   Select an OTM Client from the Client Utility dialog box.

2   Click the Remove button.

    A confirmation dialog box opens.

3   Click the OK button to remove the OTM Client from the database.

# Electronic Data Dump

OTM's Electronic Data Dump (EDD) is a critical data base update operation on the Meridian 1 and Succession CSE 1000 systems. This operation dumps (saves) modified data from the switch's resident memory to data base files on the switch's hard disk. These data base files contain the active configuration information for phone-system terminals and users.

## Synchronizing and securing data

Using OTM's Station Administration and ESN applications, you can modify station data, Call Party Name Display (CPND) data, and Electronic Switched Network (ESN) data. OTM stores these changes in its PC data base files. The phone system cannot recognize these changes, however, until you upload the modified data to the Meridian 1 or Succession CSE 1000 system. This operation synchronizes switch data with current OTM data on the PC.

Updating the switch's data is a two-step process. The first step is to transmit modified OTM data from the PC to the switch's resident memory. OTM's Station Administration and ESN applications include a Synchronize menu for this purpose. The second step is to use OTM's EDD feature to dump modified data from the switch's resident memory to the switch's hard disk.

To secure modified data on large, non-Option 11C, Meridian 1 systems, you must dump it to the switch's hard disk. Optionally, your distributor technician can set up the switch so that you also dump data to a diskette that you insert in the switch's floppy drive.

Power interruptions erase all data in resident memory. When power is restored, switch data is automatically restored from its data base files on the hard disk. Modified data that was *not* previously dumped to these data base files is lost at the switch. Further, this data may be difficult to isolate in the PC's OTM applications, since *all* previously uploaded data shares the same TRN (transmitted*)* status. For these reasons, *always* perform or schedule data dumps after uploading data to the switch.

## Accessing EDD

You can access EDD from the File menu of the System window. The EDD selection is called Data Dump. This selection has its own submenu with the options Now, Schedule, and View Log.

You can select Now to perform the data dump immediately, Schedule to set up the operation to run automatically, or View Log to review status and error information from the most recent data dump.

> **Note:** If you select Now, your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

The data-dump operation takes just a few minutes. While modified OTM data is being dumped at the switch, status and error information about the data dump is actively logged to the PC. Both Now and View Log open the EDD Data Dump dialog box for viewing or reviewing, respectively, this status and error information. This log is saved to the PC's hard disk and each data dump overwrites the existing log file.

> **Note:** To access error information, open the Events window after the data dump and double-click each error event of interest. This invokes help that is specific to each error.

**Figure 96**   EDD Data Dump dialog box
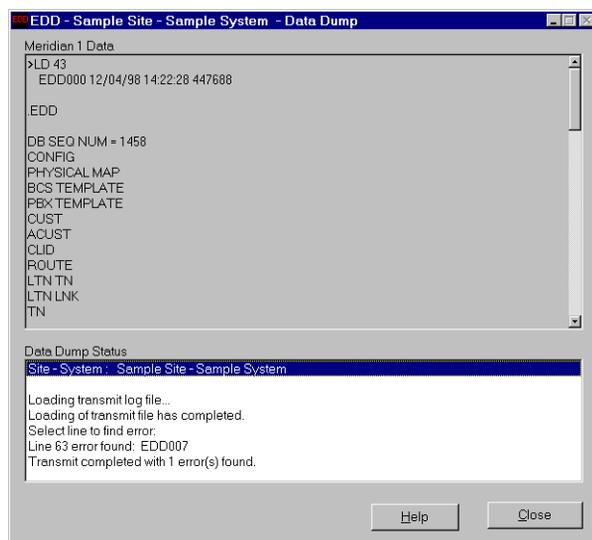


The Schedule option opens the Scheduling dialog box. Here you can select when and how often you want to dump data at the switch. It is best to schedule this operation for a time soon after uploading OTM data to the switch. The OTM Scheduler sends the job to the Queue Manager at the designated time.

## Responding to a connection failure

If you are connected to a Meridian 1 or Succession CSE 1000 system and that connection fails, a warning message appears (Figure 97).

**Figure 97**   Connection Failure dialog box
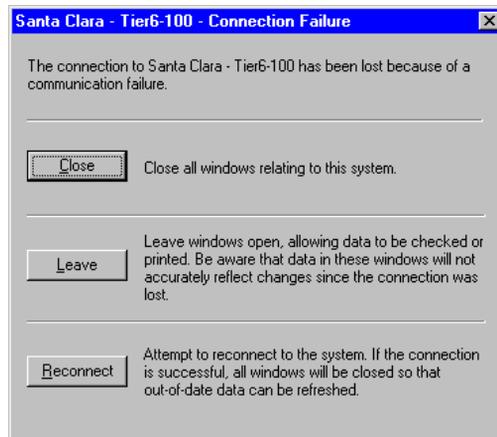


You are given the following options:

- Close all system windows and reconnect to the system
- Leave the system windows open so that you can copy or print any or all of the following information:
    - Command results in the System Terminal window or any open Maintenance window.
    - Alarms or events in the System Event Log.
    - Maintenance window objects, such as network loops within the Network Loops window.

> **Note:** When you have finished printing the desired information, close the system window and reconnect to the system.

- Attempt to reconnect to the system.

# Chapter 3
# Web Services

OTM provides both Web (http) and Microsoft Windows versions of many of its applications. This chapter discusses the Web versions of those applications:

- OTM Web Navigator
- OTM Web Alarm Browser
- OTM Maintenance Pages
- Customizable Web Help
- User Access and Session Monitor pages
- Web System Terminal
- Desktop Services (an end-user application which provides web pages that display the configuration of the user's telephone as well as provide telephone troubleshooting and feature information. With appropriate permissions, the end-user is also provided with the ability to change keys and features.)

## OTM Web Navigator

Access to the OTM Web Navigator is set up using the users and groups functionality in Windows NT and Windows 2000.

The OTM Web Navigator provides the following:

- A list of systems and devices; users click on a system or device to:
  — open a Web System Terminal or URL to manage a system or device
  — open Maintenance Pages for performing maintenance operations on Meridian 1 or Succession CSE 1000 hardware
- Web-based alarm browser to view alarms and events from multiple systems and devices

- The ability to locate telephones, view and change configuration data
- Web-based Maintenance Pages to perform maintenance operations (enable, disable, etc.) on Meridian 1 or Succession CSE 1000 system hardware.
- OTM Web configuration pages (login access, LDAP sync reports, and so forth).

The OTM administrator has the responsibility of installing, configuring, and maintaining OTM Web Services.

## User Login and Security

The user logs into the OTM Web Navigator using their Microsoft Windows NT userID and password. Login security for OTM Web Services ensures protection against unauthorized entry and enforces access permissions for logged on users.

There are three categories of users:

- Administrators — OTM administrators
- HelpDesk — OTM help desk users
- EndUser — OTM end users

In addition, there is a Default user category. Default users are able to successfully log in to the Web Navigator, but they do not have an access profile defined in their Directory record.

OTM administrators and help desk users have user accounts in a Windows NT domain. End users may have accounts either in a Windows NT domain or through an LDAP server.

OTM administrators and help desk users can access and change their own telephones through either the Web Navigator or the Desktop Services end user pages. Access to the end user pages requires the appropriate OTM directory setup (user login and user group) for these administrators and help desk users.

OTM Web application access permissions are controlled by the Administrator on a per-Windows NT user group basis. For example, the administrator may limit the OTM users access to only some of the OTM Web-based functionality. The OTM Web Navigator controls access to applications by shielding Web links that the user does not have access to. The directories and files comprising those applications are similarly protected.

The administrator configures Windows NT user groups and individual users using the Windows NT user interface. The administrator then determines the access permissions for each user group by using the OTM Web Navigator page. For more information about setting user access, refer to "OTM Web Navigator Access" on page 259.

> **→**  **Note:** As a security precaution, with any upgrade or reinstallation of OTM software, access profiles for all user groups except Administrator are reset. Using the Web Access Security feature, any member of the Administrator user group can log in and set up access profiles for members of the Help Desk, End User and Default user groups.

When an administrator or help desk user first points a browser to the OTM Navigator Web site, a check is performed to see if the user has the required OTM Java plug-in. If the plug-in is not installed, the administrator or help desk user is given the option of downloading and installing the plug-in. This operation is similar to the standard download operations in that the user must download the plug-in to their hard disk then it self installs onto the machine.

While the plug-in check is being performed, the OTM splash screen is displayed. If the plug-in is installed, or after installation of the plug-in, the user is taken to the login page.

The default OTM URL is the end user login page. To navigate to the administrator login page, place **/admin** after the OTM IP address or host name.

Figure 98 shows the OTM Login page. If the login is successful, a blank OTM Web home page appears. If login is denied, an error message appears.

**Figure 98** OTM Navigator Administrator login page



## Access permissions

When OTM starts for the first time, the Administrator profile is the only active profile. You must assign access permissions for the other Windows NT Groups that you have setup on the OTM Server.

### Administrator Group access permissions

Persons belonging to the Administrators user group on the OTM Server can log on to the OTM Web site and get unrestricted access. The Administrators group has unrestricted access by default. You are not able to alter access permissions for the Administrators user group.

Users of the OTM Administration Site belong to a distinct user group and are assigned the security profile for that user group. For example, the Administrators user group has access to all Web applications.

> **Note:** Important advisement for localized operating systems — There must always be an "Administrators" Windows NT group with the spelling exactly as shown. This group should include the names of any users that will require Administrator level access. For systems that are running on operating systems that have been localized into languages other than English, members of this group should include the members of any group that is a translated version of "Administrators". If this group does not appear on the server - such as in the German OS where it is called "Administoren", create it. Make the administrator and other users who require OTM Web Administrator permissions members of this group.

## User group access permissions

You, the network administrator, log on to the OTM Administration Web site and assign access permissions to the other Windows NT groups. By default a member of any group other than Administrators does not have any access to OTM Web Applications unless you specifically grant that group appropriate permissions.

From the Web Navigator Access page you grant or deny access to web applications to a group - not to individual users. To change the security access for individual users their group membership should be changed from Windows NT. For new groups added to the Windows NT system, the Administrator must assign access permissions for web applications before any users from that group can log on. For more information about setting user access, refer to "OTM Web Navigator Access" on page 259.

All OTM Web Navigator users for the Administration site should have a Windows NT account on the local OTM Server.

When you select an access group other than Administrators for the first time, you may get a data retrieval error message. OTM will automatically generate a new profile. Select Administrators again and then select the group that initially gave the error. You will now be able to assign access permissions for the new group.

With the exception of Administrators, do not place a person in multiple groups. The first group detected by OTM is used to determine access permissions. There is no restriction on the Administrators group. A user may belong to other groups but if they belong to the Administrators group the Administrators profile will override all other profiles.

While assigning access permissions be certain that you select the top level application for every sub application that you assign. For example if you are selecting "System Alarms" you must also select "Equipment". Failure to do so may result in members of the user group being denied access to the Web site.

## OTM Status page

The OTM current status page is shown in Figure 99. As the administrator, you can access this page at anytime by clicking the Home button.

The OTM Status page contains:

- Release version of the OTM software
- Last login date and time
- Real time status of OTM Server applications:
  - Started
  - Running
  - Not Responding
  - Stopped
- Number of logged in users

**Figure 99**   OTM Administrator Status page
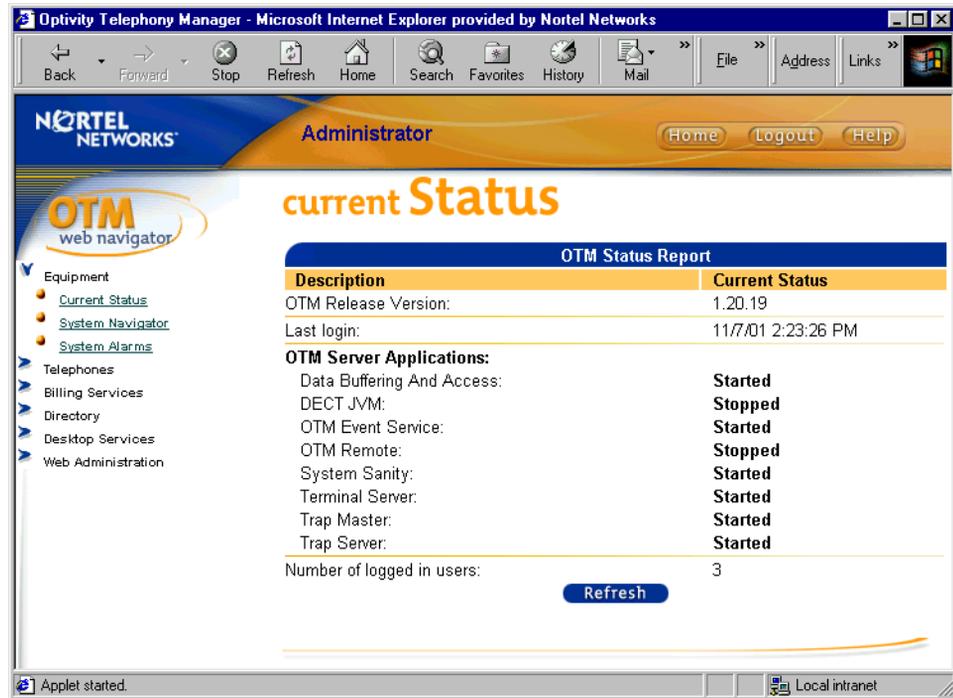


## OTM System Navigator Page

The System Navigator page contains a list of systems defined in the OTM
Windows Navigator. You can click on the system and select an application on the
right. The list of applications depends on the software packages installed, your
security access permissions, and the type of system device you select.

For Meridian 1 and Succession CSE 1000 systems:

- Web-based Virtual System Terminal connection to the overlays with help
- Web-based Maintenance Pages
- Alarms for the selected Meridian 1 or Succession CSE 1000 system. This
  opens the Systems Alarms page with only the alarms for the selected
  Meridian 1 or Succession CSE 1000 system displayed.
- OTM DECT launches the Digital Enhanced Cordless Telecommunications
  (DECT) system management tool. The DECT product is distributed primarily
  in Europe.

- Web TBS provides access to the Telecom Billing System Web Reporting application.

For generic systems:

- Web-based Telnet connection
- Management URL for the system
- Alarms for the selected system. This opens the Systems Alarms page with only the alarms for the selected generic system displayed.

The list of applications is determined by the OTM System Properties in the OTM Windows Navigator and the Virtual Terminal Setup. See "OTM Web Virtual Terminal Service" on page 261.

> **Note:** The dongle on the OTM Server is checked each time a user attempts to launch an OTM Web application. If the user login fails because the dongle is missing, the message "Login failed because the OTM Server is missing the required security device" is displayed.

**Figure 100**   OTM Administrator System Navigator page



## OTM Alarm browser page

The Alarm browser page contains a list of alarms received by the Alarm Manager Service running on the OTM Server. The list contains alarms and events from multiple systems and devices. You can perform the following actions:

- sort the alarms by clicking on a column header
- resize the columns
- filter the list via the Show check boxes
- page through the list via the First/Last/Next/Previous buttons or use the Page drop down box to jump to a particular page.
- set the auto refresh interval
- double click on an alarm for help

- single click on an alarm to view full alarm details in the Alarm details pane.

See Chapter 5, "Alarm Management," on page 529 for more information.

**Figure 101**   OTM Alarm browser page



## OTM Maintenance Pages

Maintenance Pages are based on the existing Maintenance Windows application. You can use them to perform maintenance operations on Meridian 1 or Succession CSE 1000 system hardware. Figure 102 shows the browser page that opens when you launch Maintenance Pages. For more information on OTM Maintenance Pages, See "Web-based maintenance" on page 603.

**Figure 102**   Maintenance Pages
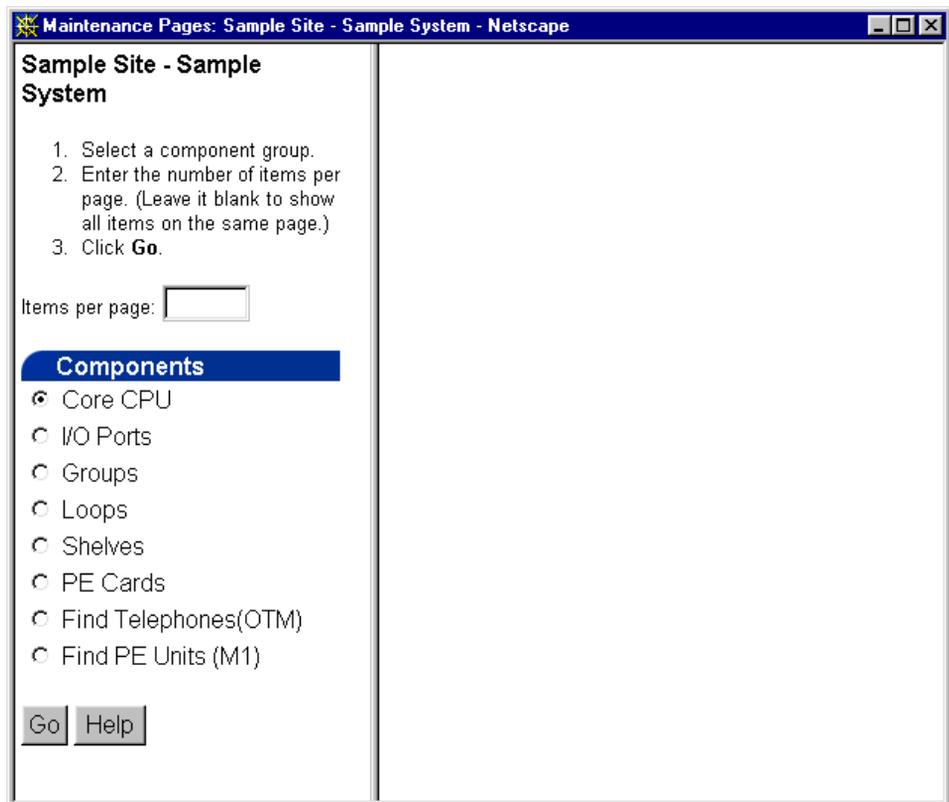


## Find Telephones page

The Find Telephones page allows you to search for telephones in the OTM station database. If allowed by the system administrator, Help Desk users may also have access to this page. See "Desktop Services" on page 271. Select a system, and enter the desired search criteria. The search returns a list of telephones.

- The drop down list of systems contains all Meridian 1 and Succession CSE 1000 systems supported by this web site. The list contains both the site and system names as defined in the OTM Windows Navigator.
- The station database search only retrieves Prime DNs.
- The default search is by Last Name.

**Figure 103** OTM Administrator Find Telephones search page
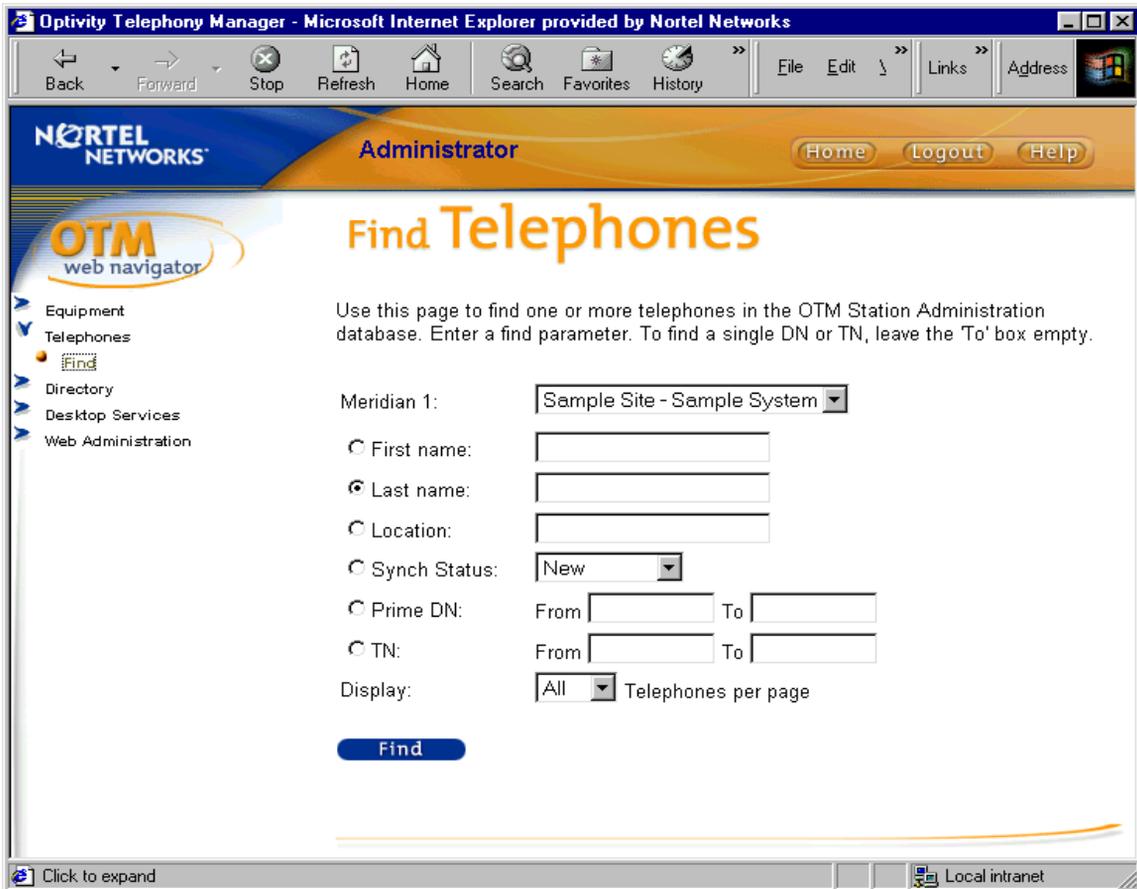


## Find Results page

The Find Results page displays the list of telephones matching the search parameters.

- By clicking on the Location link, you open up a new browser window; which displays the Telephone pages for the telephone set. These are the same pages that appear when a desktop user displays his telephone using Desktop Services (see "Desktop Services" on page 271). Using the Web browser, however, you can access the Maintenance Help page for the telephone set by clicking on Troubleshoot Problems.

- Above the results, the number of items found and the numbers associated with the currently displayed items are displayed.
- You can sort on any field via the "Sorted by" drop down list. When you select a new sort, the results are displayed starting at the first page.
- Clicking on Find Again takes you back to the find page.
- If there are no telephones matching the search parameters, a "Found None" message appears with a Find Again button (that takes you back to the Find page).

**Figure 104**   OTM Administrator Find Telephones results page



## Directory update page

This page is used to perform global changes on the following OTM directory fields:

- User group
- Login
- Reporting access group
- Publish status

The user group field determines the degree of access that the user has to the Desktop Services Web pages. You may set the user group field to Administrator, Help Desk, Default, or End User. For information on the degree of access provided to the different user groups, see "Telephone access profiles page" on page 246.

The login field is the user's Windows NT login name. When the user logs in to the Desktop Services web pages, OTM validates the log in with Windows NT. If log in is successful, OTM looks up the user's Desktop User Group field in the OTM Directory to determine which telephone features to display.

The reporting access group field determines the user's access to the Web reports feature in Telecom Billing Services. You may set this field to All, Peer, Managed, Personal, or No Access. See "Telecom Billing Services" in *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331) for information on the Web reports feature.

The Publish status field determines whether or not information on an employee or entity in the OTM Directory is synchronized with the LDAP server. Only employees who are published are synchronized with the LDAP server.

To make a Directory update:

**1** Click on Directory update which is located under Directory in the OTM Web navigator tree.

The Directory update page opens as illustrated in Figure 105. Use this page to select the Meridian 1 or Succession CSE 1000 system and to find the directory entries that you want to change.

**Figure 105**   Directory update - find entries
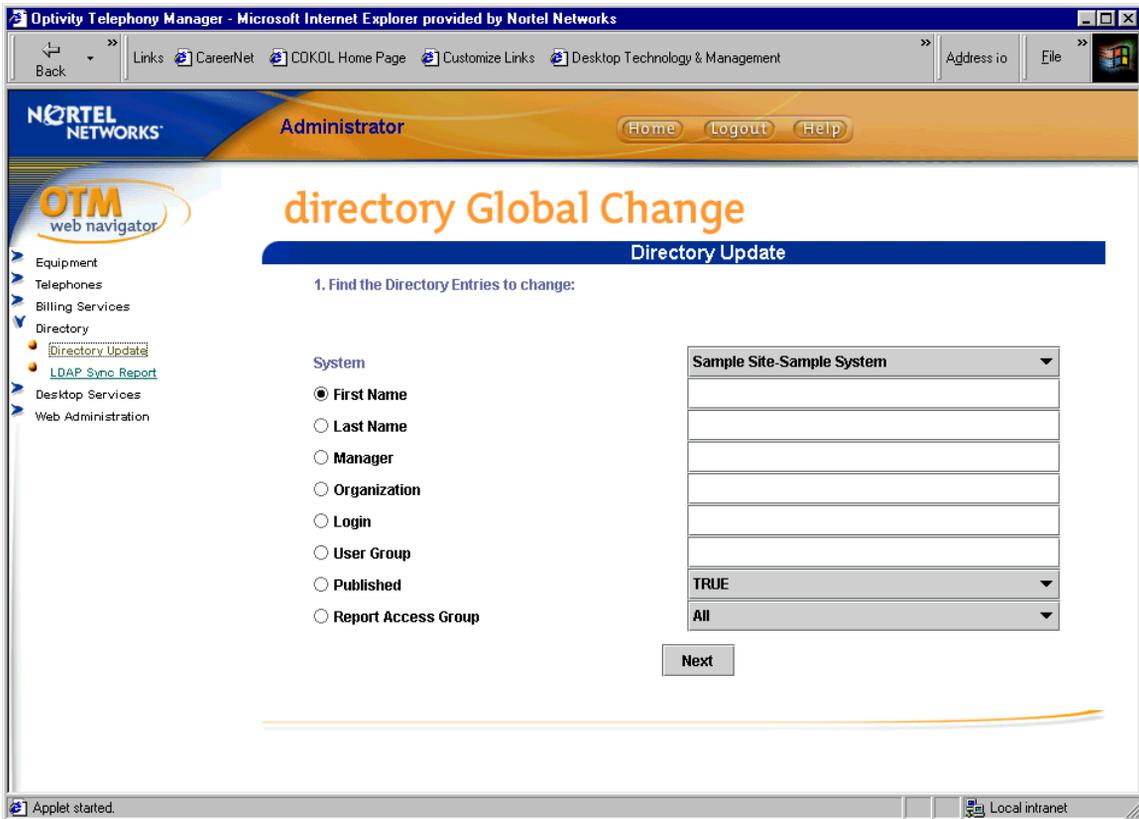


**2**   From the drop-down menu, select the Meridian 1 or Succession CSE 1000 system that contains the directory that you want to update.

**3**   Click the radio button next to the field that you want to use as your search criteria. Only one field may selected for each search.

**4**   Depending on the search criteria selected in step 2, do one of the following:

- Enter a first name in the First Name edit box.

→   **Note:** You may enter the wildcard character "*" in the fields with edit boxes. For example, both jo* and j*h would find directory entries with the first name John.

- Enter a last name in the Last Name edit box.

- Enter a manager's name in the Manager edit box.
- Enter a user's login in the Login edit box.
- Enter a user group in the User Group edit box.
- Select True to find all published employees or False to find all private employees in the Published drop-down menu.

> **Note:** The publish flag is supported for employees only. Directory update does not support the publish flag for an entity's assets.

- Select a access level from the Reporting Access Group drop-down menu.

**5** Click the Next button.

The Directory update page shown in Figure 106 opens. Use this page to set the new value and select the directory entries that you want to change.

**Figure 106** Directory update - set value

**6** From the Change drop-down menu, choose the field that you want to change.

**7** Depending on the field selected in step 6, do one of the following:

- Enter a user group.
- Enter a login.
- Select a reporting access group, All, Peer, Managed, Personal, or No Access.
- Select a publish status, Published or Not Published.

**8** From the table of Directory entries, select the entry or entries to change.

> **Note:** The table only supports shift-click for multiple selections; therefore, you can only select a contiguous block of entries.

**9** Click the Submit button to make the change.

> **Note:** To make the same change for entries in the table that are not contiguous, go back to step 1. The search criteria from the previous change are retained. Click the Next button. Select a second block of contiguous entries, and click the Submit button.

## Directory LDAP sync Report page

The LDAP sync Report page initially shows a list of the existing LDAP Sync Reports (sync of employee data between the OTM Directory Service and the customer's LDAP Sever). Click on a report to view it. Figure 107 shows the report format.

**Figure 107** OTM Administrator LDAP sync report page
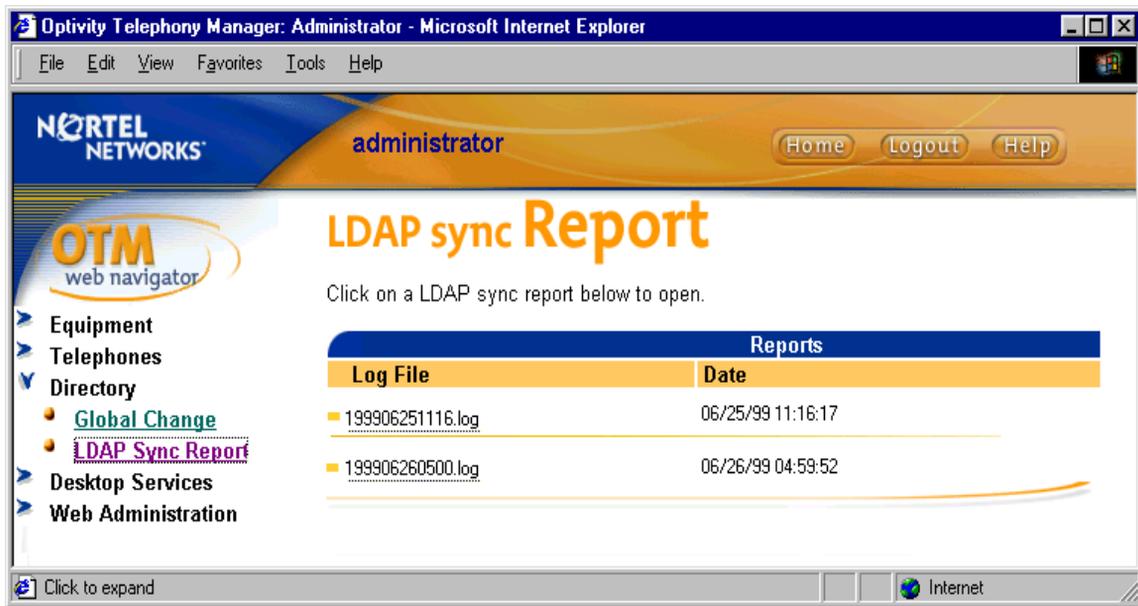


## Telephone access profiles page

The Telephone access profiles page determines which features are available on the Telephone features page. You also use the Telephone access profiles page to indicate which profiles are permitted to make changes to the General and Keys pages.

→ **Note:** When you upgrade from an earlier version of OTM, the custom settings in access profiles are lost. The Administrator and End User profiles are reset to the default values.

• The feature list contains all the non-key features listed alphabetically by prompt in LD10 & 11. Each feature is assigned a restriction of Hidden, Read Only, or Read/Write. If Hidden, the feature does not appear in the end user Feature drop down list.

→ **Note:** Read/Write capability requires the OTM Premium package.

- There are four access profiles: Administrator, Help Desk, End User, and Default. The default setting for the Administrator and Help Desk profiles is Read/Write. The default setting for the End User and Default profiles shows 21 Read Only features with the remaining features Hidden.
  - The Administrator profile is used when you view the telephone through the Web Navigator Find Telephone pages.
  - The Help Desk profile allows you to establish an access profile which permits Help Desk users to access and make selected changes to telephones through the Web navigator's Find Telephones page.
  - The End User profile is used when you log on to the end user web site.
  - The Default profile is the profile that users get when they successfully log in to the Web navigator, have access to the Find Telephones page, but do not have an access profile defined in their Directory record.

> **Note:** When the Help Desk access profile name is entered into the User Group field in a user's Directory record, the entry must match the access profile name exactly. This is primarily a concern when OTM is operating in a language other than English. In this case, the access profile name "Help Desk" may have been translated into the local language.

- The Show restrictions drop down list contains: All, Hidden, Read Only, and Read Write. This is used to limit the size of the list.
- If checked, the Automatic Meridian 1 synchronization check box permits users to immediately sync their changes with the Meridian 1 or Succession CSE 1000 system. This is accomplished by scheduling a sync to occur in the next minute. The entire process will take a few minutes. If this check box is not checked, you must manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system using Station Administration.
- If checked, the Allow changes to the General page check box permits users to make changes to the three writable fields on the General page.
- If checked, the Allow changes to the Keys page check box permits users to make changes to all keys on the Keys page.
- If checked, the Allow changes to the Features page check box permits users to make changes to the features listed on the Features page. If this check box is not checked, features that are listed as having a Read Write restriction will be treated as Read Only.

- If checked, the Allow user to restore pending changes check box permits users to restore changes to General, Keys, and Features pages.

> → **Note:** The default setting for the check boxes is: checked for the Administrator and Help Desk access profiles and unchecked for the Default and End User profiles.

- Clicking the Submit button submits all changes that you have made to the current profile. Selecting a different profile before clicking the Submit button will cancel your changes to the current profile.
- Clicking the Reset button restores the current profile to the values defined in the last submit.

The Telephone access profiles page is shown in Figure 108.

**Figure 108** OTM Telephone access profiles page

# Customizable Web Help

The Custom Help page allows you to customize help text for OTM Web-based applications. Typically, you will only customize help that is for end users.

All Web-based help files can be customized. You can either:

- replace them with customized help provided by you (the administrator), or
- annotate the help files

The custom help page provides a list of all Web-based help files. You can use a custom help file instead of the standard help by copying and then editing and/or annotating the standard help.

OTM includes sample HTML files that you can use to create customized help for the end user. Sample help files are provided for the following help screen topics:

- dialing plans
- system speed call lists
- flexible feature codes

Each individual help page has Content and Index buttons to return you to the Help table of contents or index. Next and Previous buttons allow you to navigate to the next help for topic. A Java applet shows the table of contents and index as navigation frames. Versions of the table of contents and index are also available without frames.

## Customizing Standard Help Files

The following procedure shows how to create and annotate a custom Help file. All Help customization pages appear in the Content frame of the Web Navigator.

To create and annotate a custom Help file:

**1** Click on Custom Help under Desktop Services in the Web Navigator tree.

The Help Groups page opens (Figure 109).

**Figure 109** Selecting the standard OTM Help files - Help Groups
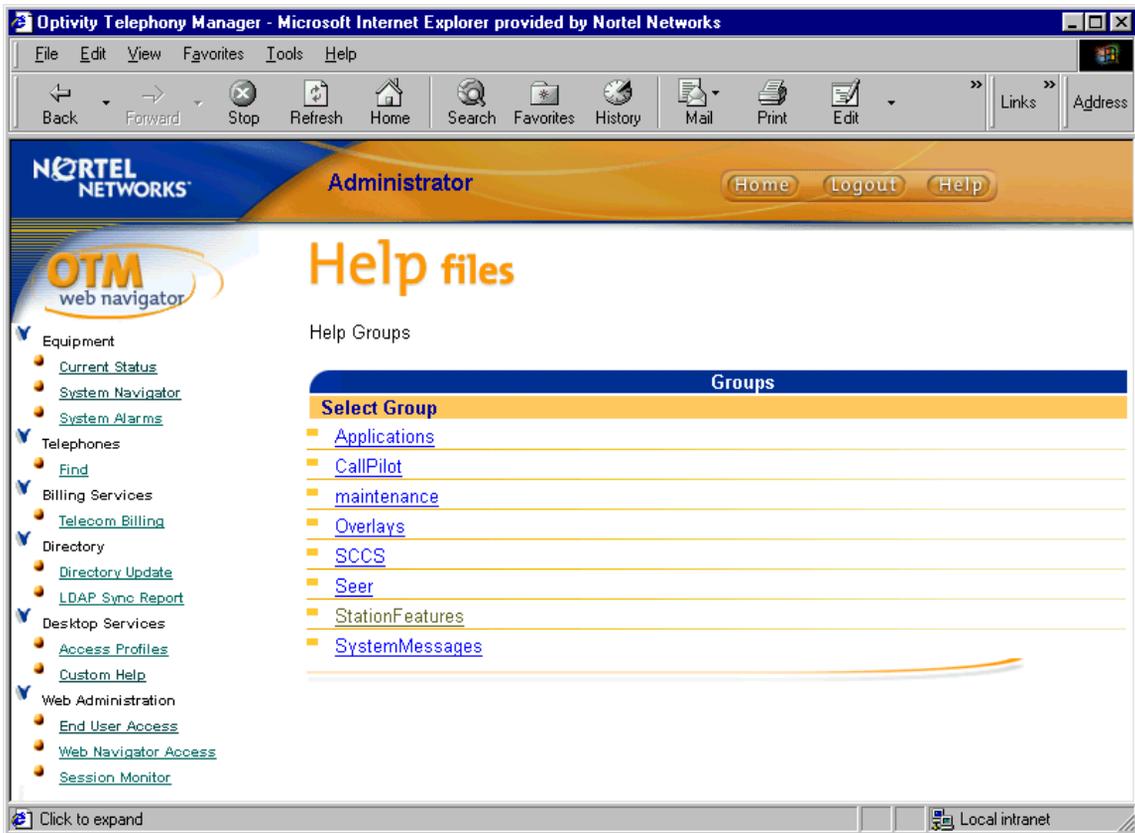


**2** Click on a Help Group. In this example, click on StationFeatures.

The Help Subgroup page for StationFeatures opens as shown in Figure 110.

**Figure 110** Selecting the standard OTM Help files - StationFeatures subgroups
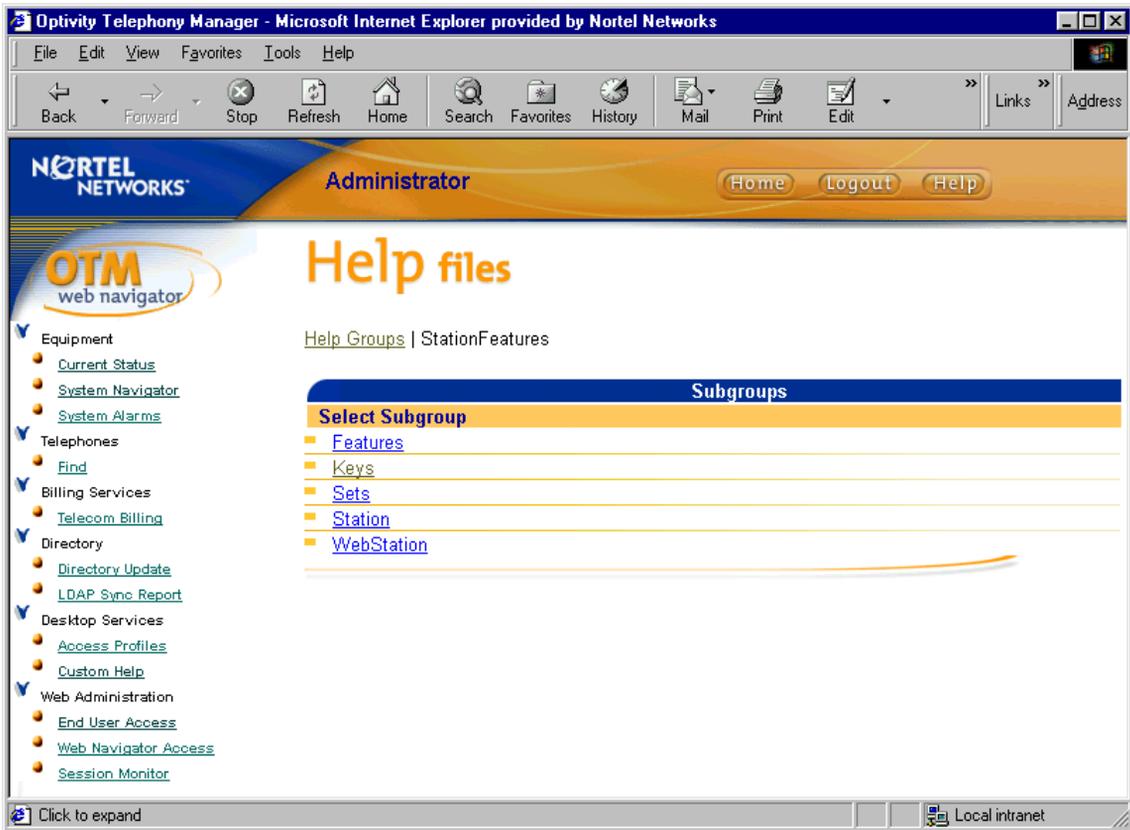


**3** Click on a Help Subgroup. In this example, click on Keys.

A page that displays a list of the Help files for all key-based features opens as shown in Figure 110.

**Figure 111** Customizing standard Help files



Table 15 explains the function performed by each of the buttons in the Custom Help feature.

**Table 15**   Custom Help buttons

| Button | Explanation |
|:------:|-------------|
|  | Copy the standard Help file to the custom directory. |
|  | Annotate the Help file in the custom directory. |
|  | Edit the annotated Help file. |
|  | Delete the annotation or delete the entire custom Help file. |
|  | View the custom Help file. |
|  | Enable end user viewing of the custom Help file. |
|  | Disable viewing of the custom Help file and use standard Help. |

**4**   Click the Copy button in the Custom column for ACD Answer Agent (AAG).

The buttons in the Custom and Annotate columns change as shown in
Figure 112.

**Figure 112**   Copy a standard Help file
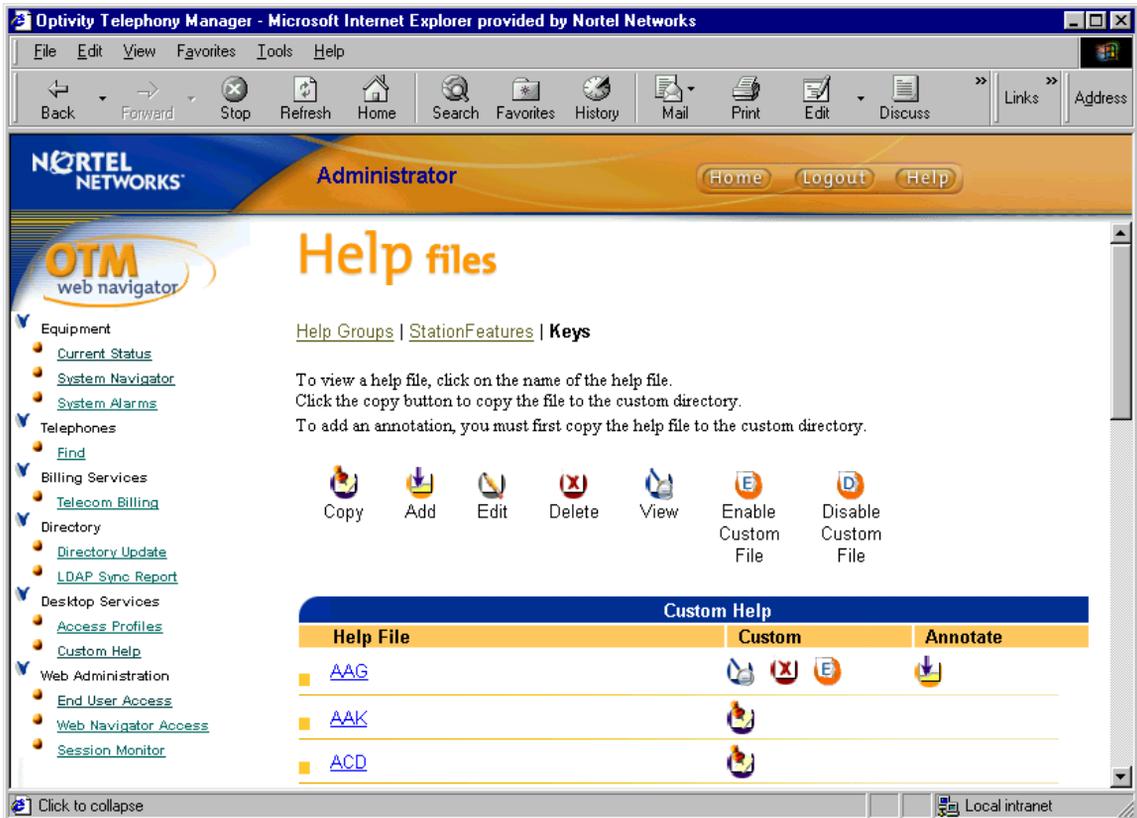


**5**   Click the Add button in the Annotation column to add your annotation.

The annotation entry page opens as shown in Figure 113.

**Figure 113**   Annotating custom Help files
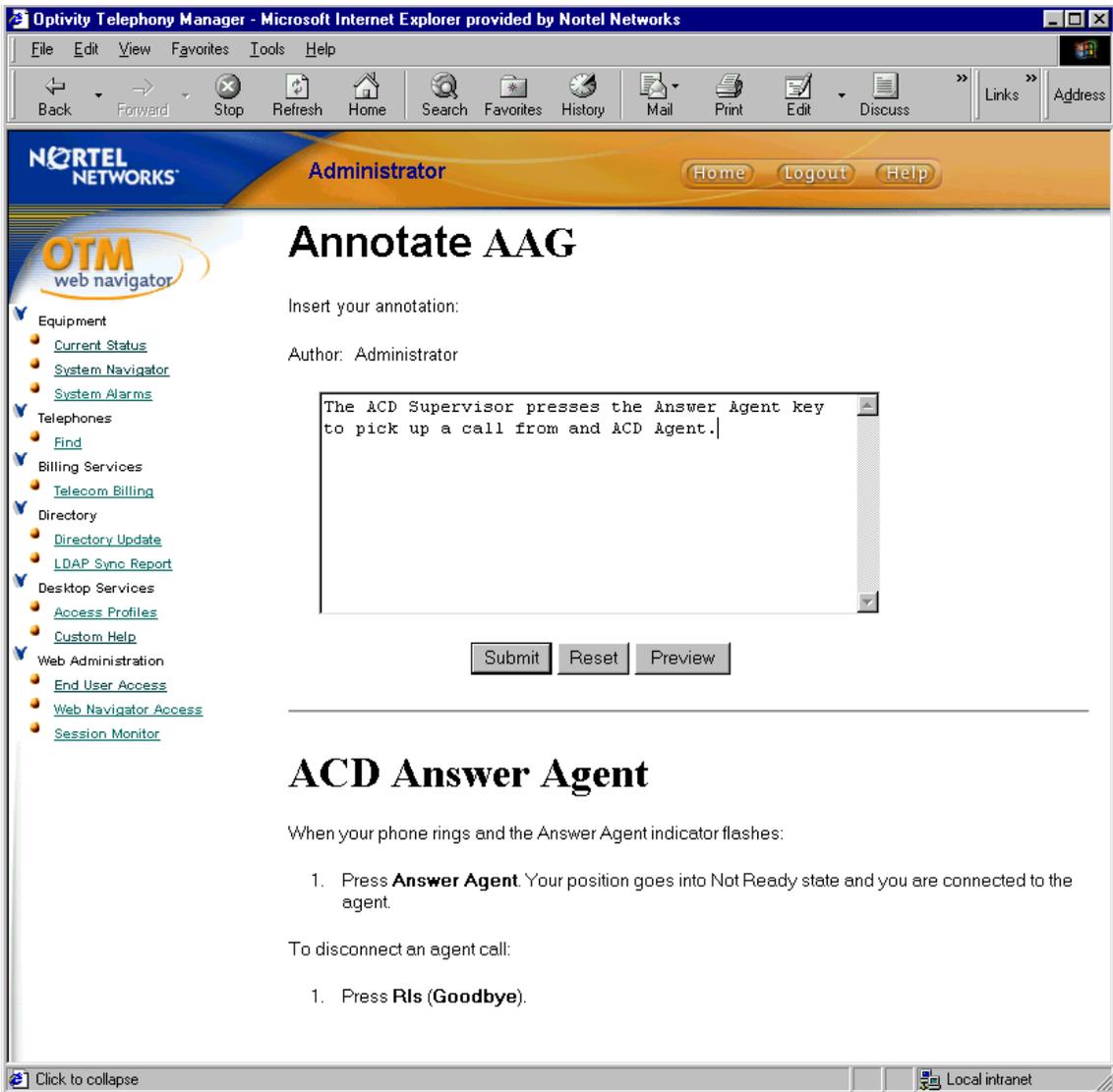


> **Note:** Only custom Help files can be annotated.

**6**   Add your annotation and press the Submit button.

**7**  Click the Enable button to enable viewing of your annotated file.

**8**  Click the View button to display your annotated file.

The custom Help file is displayed as shown in Figure 114.

**Figure 114**   Viewing an Annotated Help file
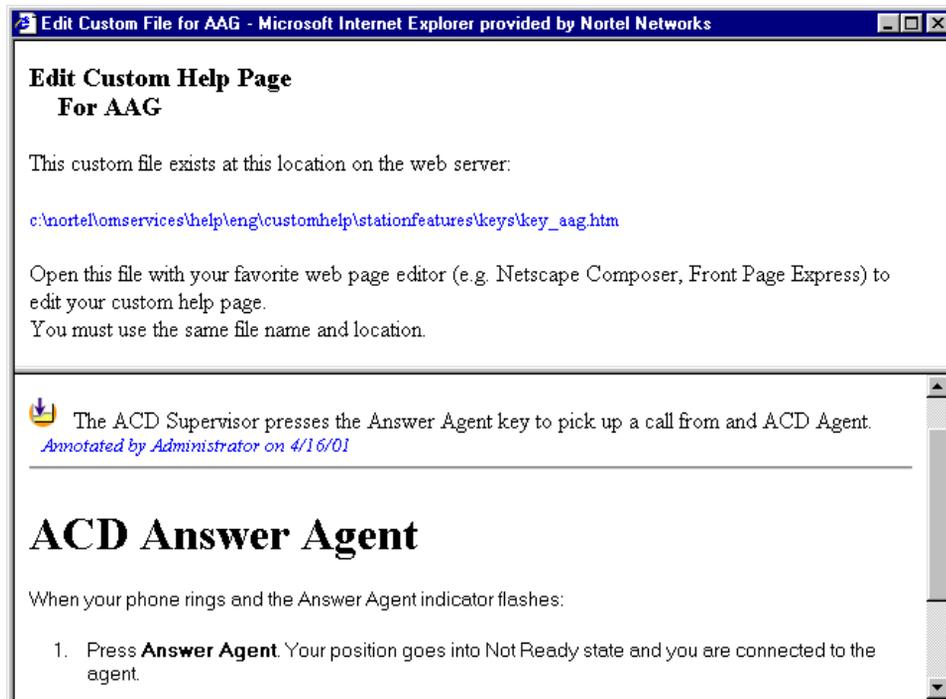


## Additional Help topics

In addition to Help on features and keys, Web-based help is available for a variety of maintenance and administrative tasks that can be performed using OTM. Figure 115 shows the Web-based help file for overlay 02.

**Figure 115**   Sample Web-based Help screen
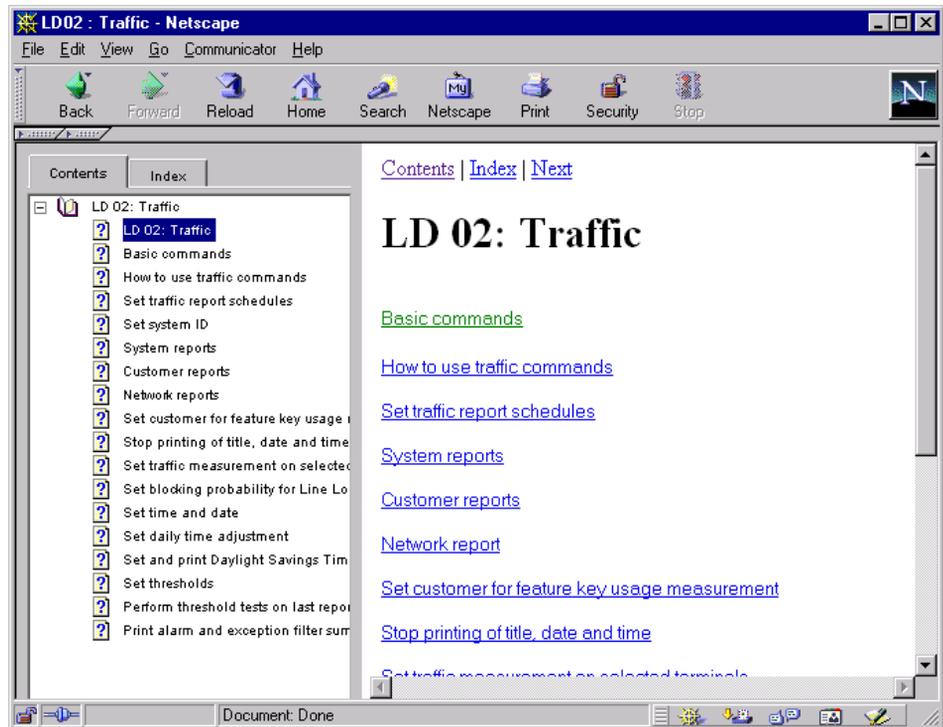


# User Access and Session Monitor

## Desktop User Access

The Desktop User Access page allows you to select the method of user login authentication. The options are:

- LDAP Server

> **Note:** User login identification is required for LDAP. The drop down menu only contains employee ID (UID) and e-mail.

• Windows NT Domain.

---

➔ **Note:** The edit box for the Windows NT domain name is required for Windows NT authentication.

---

For information on configuring users for desktop access, see "Enable Web desktop access" on page 116.

**Figure 116** OTM Administrator End User Access screen
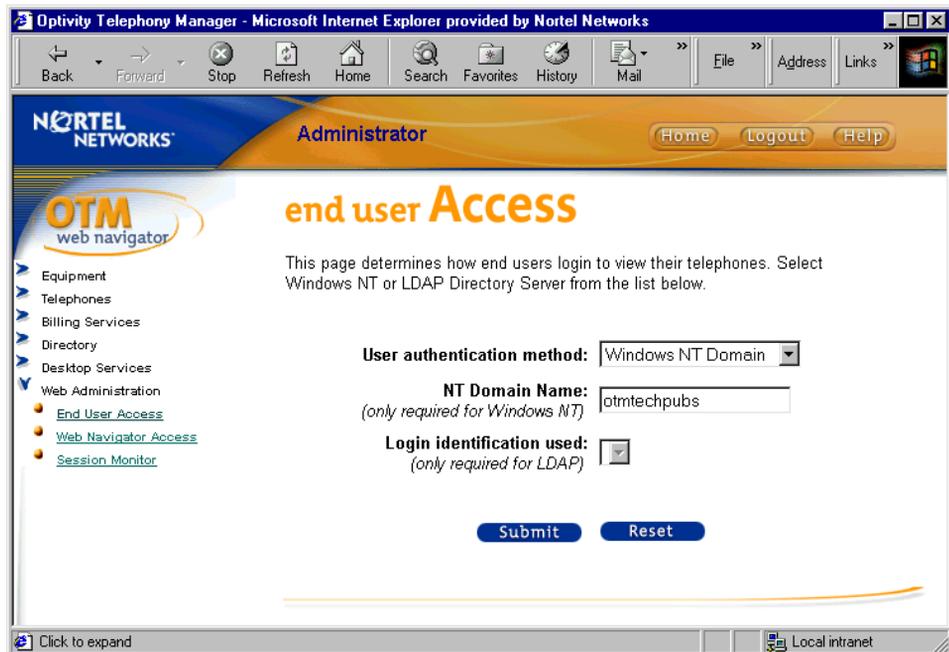
## OTM Web Navigator Access

The OTM Web Navigator Access page determines which OTM Web Navigator pages are available to users. Before you can set access permissions for a group, you must create the group using the Windows NT or Windows 2000 Server user interface. Select the user group from the drop down and then check the pages that you want to be visible to users in that group. The list of pages mirrors the hierarchical structure in the OTM Web Navigator tree.

> → **Note:** The Save button only submits the changes on the selected User Group.

**Figure 117**   OTM Administrator Web Access Security page

## Session Monitor

Login security prevents the web pages from being accessed without first successfully providing a valid login name and password combination. The Session Monitor page (Figure 118) contains a list of logged in users with the login time and IP address.

The administrator may log out users by clicking the corresponding Log Out check boxes and then clicking the Log out button.

**Figure 118**   OTM Administrator Session Monitor screen

# OTM Web Virtual Terminal Service

The OTM Web Virtual Terminal Service provides a single point of connectivity for a Web-based terminal window. Launch the OTM Web Navigator from Internet Explorer or Netscape Navigator, and select the system to connect to from the GUI. This does not require knowledge of such items as IP addresses and serial port settings because the information is stored on the server. You determine who gets access to what, and you can change the settings without interrupting everyday operation.

The OTM server connects to devices over IP network and serial ports on the OTM server. Virtual Terminal supports connection primarily to a Meridian 1 or Succession CSE 1000 system via:

- Meridian 1 or Succession CSE 1000 system pseudo-TTY (PTY) port
- Direct serial connection
- Telnet

# OTM Web System Terminal

The OTM Web System Terminal resembles the OTM Windows System Terminal application. When you connect to a Meridian 1 or Succession CSE 1000 system, it provides similar context sensitive help for the overlays and error messages. When you connect to other devices it provides a basic Telnet connection. The OTM Web System Terminal is a Java applet embedded in an HTML page.Once connected to the Terminal Server, the OTM Web System Terminal communicates with the selected device through the Terminal Server. Only the first client that connects to a port can send character input to the host.

The OTM Web System Terminal displays most messages in a window. However, some messages that do not require immediate attention, appear between the < > characters in the terminal screen. See Figure 119 These messages are not sent to the host device or logged on the server. The messages can be:

- Status of this client (connected, disconnected, read-only connection, etc.)
- Status of other client (monitoring this port, disconnected)
- Broadcast message (received from another client, sent to another client)

**Figure 119** Terminal Client showing messages
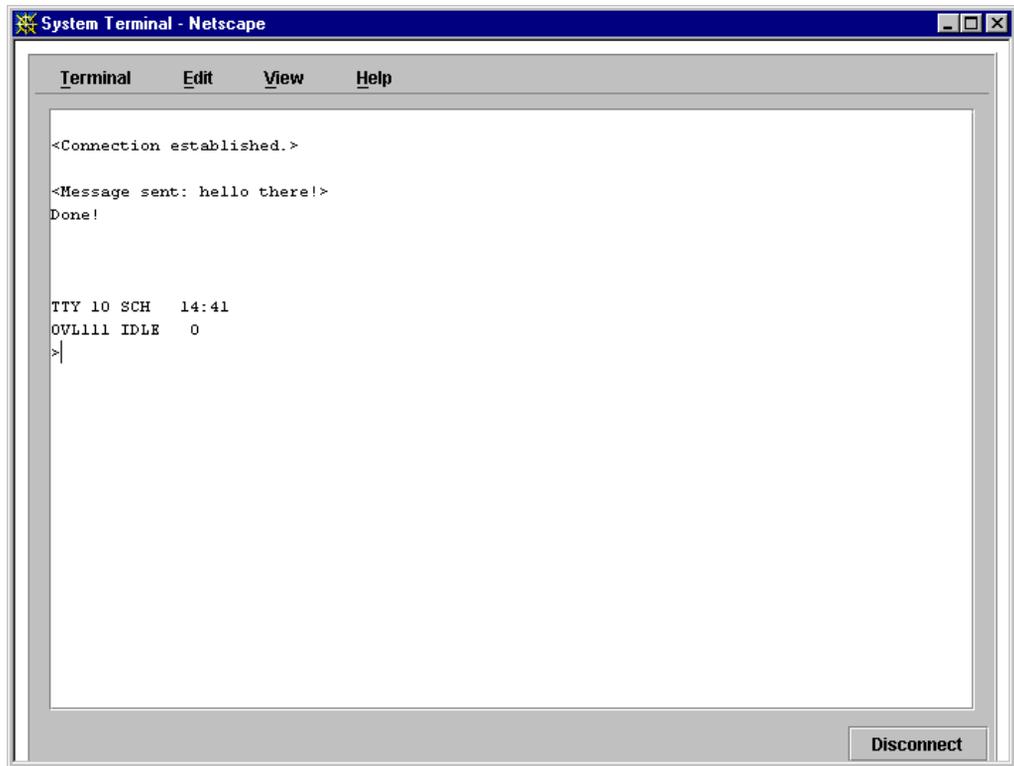


## OTM Web System Terminal Menus

The OTM Web System Terminal window has the following menu items:

File menu

- Connect - Connect to a virtual port. This item appears when the client is not connected to a port.

→ **Note:** For a non-administrator user, if a port is already in use by someone else, then the connection is not allowed.
If you have administrator privilege, you may connect to a port already in use by someone else. However, you may only monitor the session, and cannot send text to the host.

- Disconnect - Disconnect from a virtual port. This item appears when the client is connected to a port.
- Disconnect Others - Disconnect all other clients from a virtual port. This item appears only for a user with administrator privilege.

> **Note:** If you select Terminal > Disconnect Others, then all other clients to the virtual port are disconnected, and you are then allowed to send text to the host.

- Send Message - Display a Send Message dialog. This allows you to "broadcast" a message to all other users on the same virtual port.

**Figure 120**   Send Message dialog box



- Parse M1 Output - This menu has a check mark to enable parsing of overlay interaction to provide the context sensitive help. To reduce some unnecessary CPU overhead, you should uncheck this menu item for a "Generic" device. If it is checked, then the Help->Current Overlay and Help->Current Prompt menu items become visible to provide context-sensitive help for the Meridian 1 and Succession CSE 1000 overlays.

Edit Menu

- Copy - Copy the selected text to the clipboard.
- Select All - Select all text in the output window.

View Menu

- Look & Feel - cascading menu determines the look of and feel of the user interface. You can choose:
  Java
  Windows
  Motif

- Overlay Passthru Mode - Make the applet behave like the MAT System Terminal application. It provides a separate edit box to enter commands, which allows for backspace while working in the M1 overlay environment.

> **Note:** If this menu item is checked, then the Help->Search M1 Help Files menu item becomes visible. If this menu item is unchecked, then it behaves like a standard terminal window.

Help Menu

- Current Overlay - Display help for the current overlay in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.

- Current Prompt - Display help for the current overlay prompt in a separate browser window. The OTM Web System Terminal monitors character I/O to keep track of the overlay information.

- I/O Navigator - Display the Overlay Enhancer dialog. This allows you to search for help on an overlay, overlay prompt, or M1 message.

> **Note:** Like the MAT and OTM System Terminal, the OTM Web System Terminal has context-sensitive help. It monitors M1 input and output to determine the current overlay and prompt. You can also search for help for an overlay ("LD22", for example), overlay prompt ("LD22 REQ", for example), or M1 message ("AMH0007", for example). You can either select text from the terminal screen and then select Help->Search, or select Help->Search and then type in the string to search for.

**Figure 121**   I/O Navigator Overlay Enhancer dialog box



## Terminal Server Setup

The Terminal Server application is a Windows application that uses the OTM database to obtain site, system, and IP address information. The Terminal Server supports direct serial connections and Meridian 1 or Succession CSE 1000 overlay connection over an IP network. If you connect over an IP network to a Meridian 1 or Succession CSE 1000 system, you can customize the Meridian 1 or Succession CSE 1000 port user types (SCH, MTC, BUG, TRF).

To launch the Terminal Server application:

→ From the Start menu, select Programs > Optivity Telephony Manager > Terminal Server.

The Terminal Server dialog box opens as shown in Figure 122.

**Figure 122**   Terminal Server dialog box
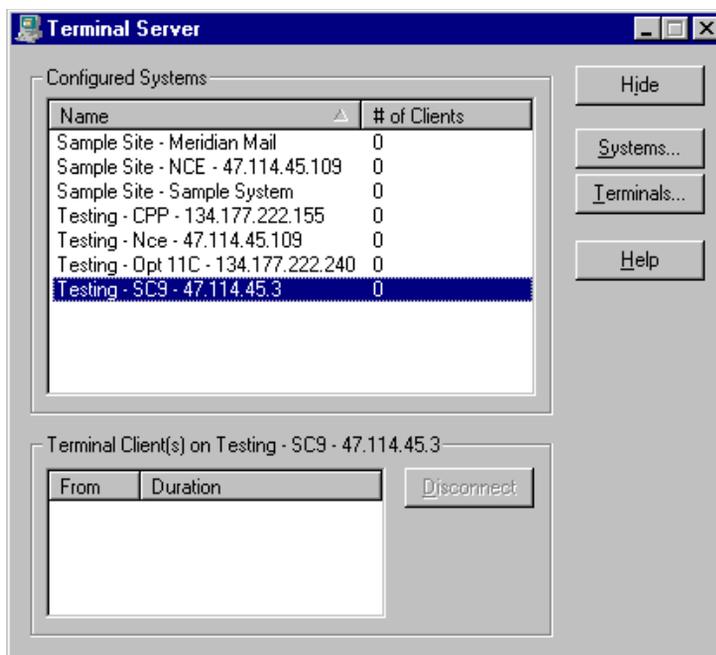


The Terminal Server window displays two lists:

- configured systems
- configured ports

The configured systems list displays information on the virtual port that is configured:

- Name:
  As defined in the OTM Windows Navigator
- Number of clients:
  The number of terminal clients using the port

When you select an entry in the Configured Ports list, the Clients on Port list displays the following information for each terminal client using the port:

- From:
  IP address of the terminal client

- Duration:
  How long the connection has been in use

The Disconnect button next to the Clients on Port list allows you to terminate the connection to one or more terminal clients.

The Terminal Server application also has the following buttons:

- Hide - Hide the application window. During normal operation, the Terminal Server application runs without user input, so hiding its window frees up some desktop space. You can view the window at any time by double clicking the Terminal Service icon in the Task Bar tray.
- Systems - Configure the virtual ports. See Virtual ports below.
- Terminals - Configure the starting network socket port number for communications between the OTM Server and the OTM Web System Terminal. The default is 4789. Typically you will not need to change this.
- Help - Get context-sensitive help on the application.

**Figure 123**   Terminal Properties dialog box
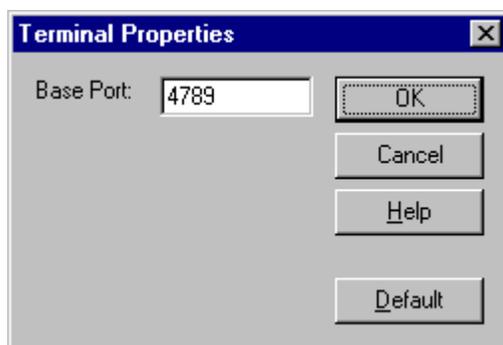


## Virtual Ports

In the Terminal Server application, the Virtual Ports Properties window allows you to enable or disable connection to a particular device. It displays the virtual port number for each configured device, and the corresponding serial or network settings.

In the Virtual Port Properties window, a tree displays the devices that can be connected via a virtual port. For serial ports, the window retrieves the available serial ports from the Registry. For network connections, the window retrieves the site and system information from the OTM database. The virtual port for a system uses the same IP address assigned to System Terminal. The tree mirrors the tree in the OTM Navigator. It uses the communication profile in System Properties, determined as follows:

- For a Generic system, it uses the profile (serial or network) selected in the Application page in System Properties.
- For a non-Generic system, it uses the communication settings from the profile (serial or network) assigned to VT220 in the Applications page in System Properties.
- For a any system, if a network (Ethernet) profile is selected, Terminal Server uses a Telnet connection.

To configure virtual port connection for a device click the Systems button in Terminal Server window, or double-click a Configured System in the list (this selects the corresponding device in the Virtual Port Properties window allowing you to quickly change the settings for a particular device).

To enable virtual port connection for a device:

- Double-click the disabled port in the tree, or
- Select the item and check the Enabled check box, or
- Click the Enable All button. This enables all the items listed in the tree with the default configuration. The item becomes bold to show that it's enabled.

The field to the right of the Enabled check box automatically fills in the Site - System name for the selected device. This is the name displayed in the Terminal Server's main window.

To disable a virtual port:

**1** Double-click an enabled item in the tree, or
Select the item and uncheck the Enabled check box, or

**2** Click the Disable All button. This disables all the devices listed in the tree. The item is no longer bold, and does not appear from the Terminal Server main window when you click OK.

## Serial Connections

The Terminal Server application supports all the serial ports on the OTM server PC plus the systems configured in the OTM Navigator. However, while more than 8 serial ports may be configured, the Terminal Server is limited to 8 simultaneous serial connections. (The limit depends on the OTM server hardware, the network capacity, the server's CPU capacity, etc.)

For a serial connection, Direct to Com x appears, where x is the com port number. The fields for serial settings are enabled. The default is the serial settings from the OTM database. You can change the settings in the dialog box.

**Figure 124**   Virtual Port Properties (Serial with Logging enabled)
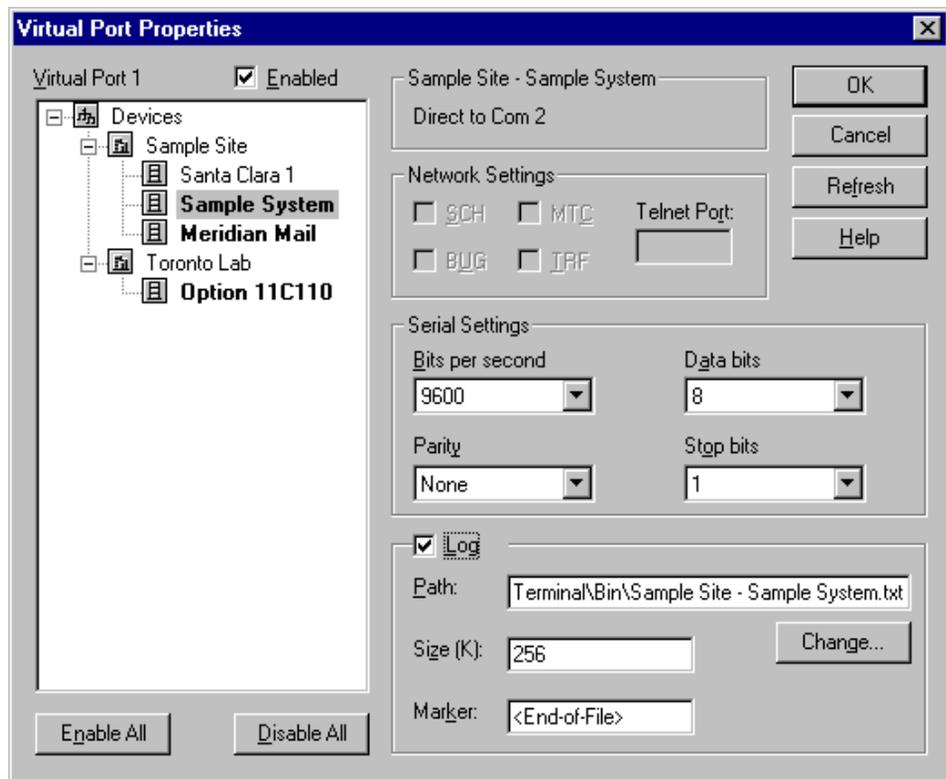
## Network Connections

For a network connection, the IP address appears. It also appears whether the system is an M1 or Telnet.

• Make sure the IP address is correct. If the IP address is different from the OTM database's setting, click the Refresh button to update all of the network ports with the latest settings from the OTM database.

• If you select an M1 System, the fields for M1 port settings are enabled (default = SCH). The Telnet port field is disabled.

• If you select a non-M1 System, the fields for both serial and M1 port settings are disabled. The Telnet port field is enabled.

• Check the Log check box to turn on data capture. The log file name defaults to the Site - System name plus a .txt extension. The path and the file name can be changed by typing in the edit box or clicking the Change button.

• The maximum size of the log file is customizable (in the Size field) on a per-system basis, and defaults to 256K. Once the file size reaches the limit, the Terminal Server starts from the beginning of the file, overwriting the oldest logs.

• Because of the circular nature of the log, the Terminal Server writes an end-of-file marker (customizable in the Marker field) at the end of the log entries.

• The log records the time and date of when a client connects and disconnects to the virtual port, and writes all text received from and sent to the host. This allows a network administrator to keep an activity log of the virtual port connection.

• If this ASCII log is to be viewed from a web browser, the file should be stored in a web-accessible path.

**Figure 125** Virtual Port Properties (Network with Logging disabled)
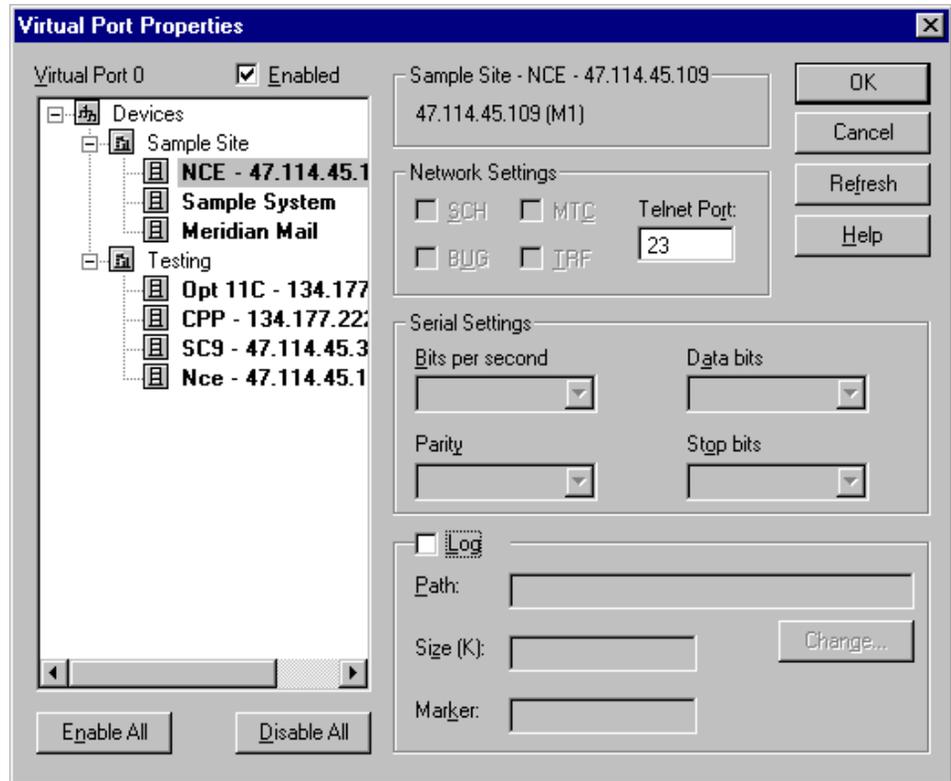


## Desktop Services

OTM Web Desktop Services allows help desk users and end users to view and modify the configuration of their telephones via a web browser.

The Web display includes a graphical view of the telephone, and shows the configured features. Help text is available for the features configured on the telephone. See "Telephone access profiles page" on page 246 for information on your ability to restrict the display of certain features to specific access profiles. For example, most Class of Service "features" are irrelevant for end users; therefore, you should specify that they not be displayed.

# Installation and Configuration of Desktop Services

The following procedure outlines the steps that you must take to install and configure Desktop Services:

1. Install OTM. See *Installing and Configuring Optivity Telephony Manager* (553-3001-230).

2. Create Windows NT accounts for Help Desk users and End Users as required.

3. Log on to the Web Navigator as Administrator and go to the Access Profiles page.

> ➡ **Note:** To navigate to the Administrator Login page. place **/admin** after the OTM IP address or host name in your Web Browser.

4. Configure the Help Desk, Default, and End User Access Profiles as desired.

> ➡ **Note:** By default, Help Desk users are given read/write access to all features. Default and End Users have read-only access to 21 features.

5. Go to the Web Access Security page and set the Web Navigator access permissions for the Help Desk and Default user groups. See "OTM Web Navigator Access" on page 259.

> ➡ **Note:** To allow Help Desk users to make changes to other user's telephone configuration data, make sure that they have access to the Find Telephones page.

6. Enter the Help Desk users' Login Name and Access Profile in the users' OTM Directory entry. See "Enable Web desktop access" on page 116.

7. Enter the End Users' Login Name and Access Profile in the users' OTM Directory entry. See "Enable Web desktop access" on page 116.

8. Select the desired Web Reporting Role in the user's OTM Directory entry.

provides reference information for Web Desktop Services end users. You may
want to distribute copies of this appendix to the end users once you have installed
and configured Desktop Services.

## User Login page

Login security ensures protection against unauthorized entry and enforces access
permissions for logged on users.

When a user points a web browser to the OTM end user URL a login page
appears. If login is successful, the user's personal Desktop Service main page
appears.

**Figure 126**   User Login page



## End User Main Page Layout

The Web Desktop Services end user main page includes the following common
elements:

- **Information Banner** (top): Contains the Nortel Networks logo, plus a Help, Logout, and Home button. The Help button takes you to general help on how to use these web pages. The Home button takes you to the My Profile page. The logout button takes you to the login page.
- **Navigation Bar** (left side): Lists hypertext links to various Desktop Service pages. When you single click on an item in the Navigation bar, the related page appears in the Content Frame of the standard Web page.

> **Note:** In the rare situations where a user has telephones on different switches managed by the OTM Server, the Navigation Tree expands to include the systems as the main nodes. The user selects the My Profile or Telephone(s) in the desired system.

- **Content Frame**: Contains the page based on the selection in the Navigation bar. There are four types of pages:

  Home page - general information about the user (name, department, etc.). The information displayed is determined by the administrator.

  Telephone pages - contains telephone configuration data. User may have more than one telephone; however, configuration data can be displayed for only one telephone at a time. The information displayed is determined by the administrator.

  Billing Reports - in OTM 1.2 and later releases, the TBS Web Reporting application displays billing reports in the content frame. For information on TBS Web Reporting, see *Optivity Telephony Manager Telemanagement Applications* (553-3001-331).

  Other Links - contains links provided by the administrator.

A line is placed at the bottom of each content page to visually indicate the end of the page. If vertical or horizontal scrolling is required, the entire page is scrolled.

## My Profile page

Once a user with an EndUser or HelpDesk access profile logs in to the User Login page, the My Profile page opens. This page contains general information about the user. The system retrieves this information from the OTM Directory. Click the Home button in the Banner or My Profile in the Navigation bar to go to this page.

The information that appears is fixed and cannot be changed. If there is no information for a field, it is left blank. Hidden fields will not appear. Only fields that are listed as read-only are visible.

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Org Path (this is extracted from the Organization Path in the OTM directory).
- Manager
- E-mail address
- Login Name
- User Group
- Web Reporting Role
- Address fields
- Description

Figure 127 shows an example of a My Profile Page.

**Figure 127** My Profile page

# Telephone pages

Administrators and Help Desk personnel access the Telephone pages by logging into the Web Navigator and using the Find telephones page. See "Find Telephones page" on page 239 for more information. End users access the Telephone pages by logging into the end user pages as described in "User Login page" on page 273.

> ➡️ **Note:** When using the Find telephones page to access the Telephone pages, the Information Banner and the Navigation Bar shown in Figure 127, as well as the My Profile page, are not displayed.

Once logged in, the end user is presented with a list of telephones in the Navigation Bar. The telephones are identified by prime DN. In order to get this list, the Web Server scans all the employee databases, one per Meridian 1 or Succession CSE 1000 system, on the Server. If the employee has telephones in different systems, served by different OTM servers, then the employee will need to log in to the different servers to access these telephones.

When a user clicks on a telephone in the Navigation Bar, the Telephone page appears in the Content Frame.

The Telephone page has a small graphic in the top left corner. This graphic is detailed enough for the user to recognize the type of telephone. The user's name and the prime DN of the telephone also appear.

The telephone has up to four sub-pages, accessed by links below the small telephone graphic. The capabilities provided by these web pages depends on the telephone type.

## Current Configuration/Pending Changes

When the information for the telephone has been changed, but the changes have not be synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows the user to select which configuration is shown.

When there are pending changes, and the user has been assigned the "Allow M1 Synchronization" and "Allow user to restore pending changes" options in their access profile, the drop down box is presented along with Schedule and Restore buttons. If the user 's access profile allows changes to the General, Keys, or Features pages, the Validate button is also presented as shown in Figure 128.

**Figure 128**   Configuration indication with synchronization allowed



### Validate button

The Validate button is available to users who are allowed to make changes to the General, Keys, or Features pages. The Validate button is not available when the user is viewing the current configuration of a telephone. When a telephone has been marked for deletion in the OTM database, the Telephone pages will show the deleted configuration. The Validate button is not available when the user is viewing the deleted configuration. The user clicks the Validate button to validate the changes that have been made to the configuration. The validation process determines whether or not there are any errors that could cause problems during synchronization with the Meridian 1 or Succession CSE 1000 system. When the user clicks the Validate button, if there are no errors, the page shown in Figure 129 opens. If there are errors, the Station Validation Results will indicate the errors that are present in your telephone configuration (Figure 130).

**Figure 129** Station Validation Results with no errors
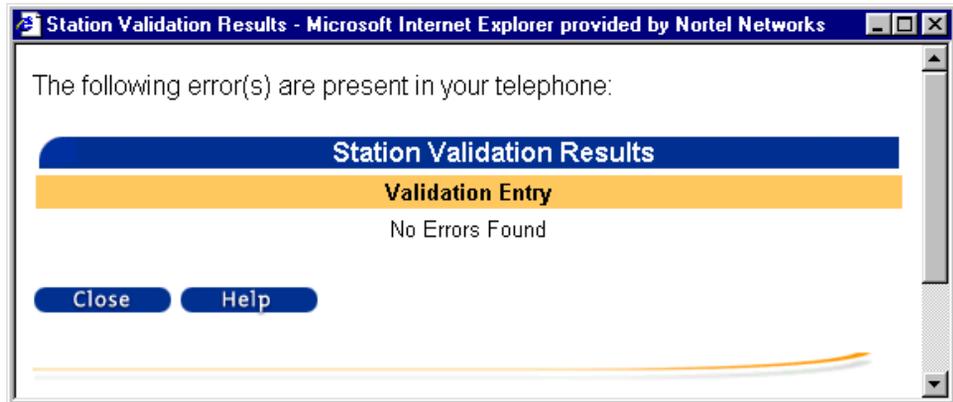


**Figure 130** Station Validation Results with errors
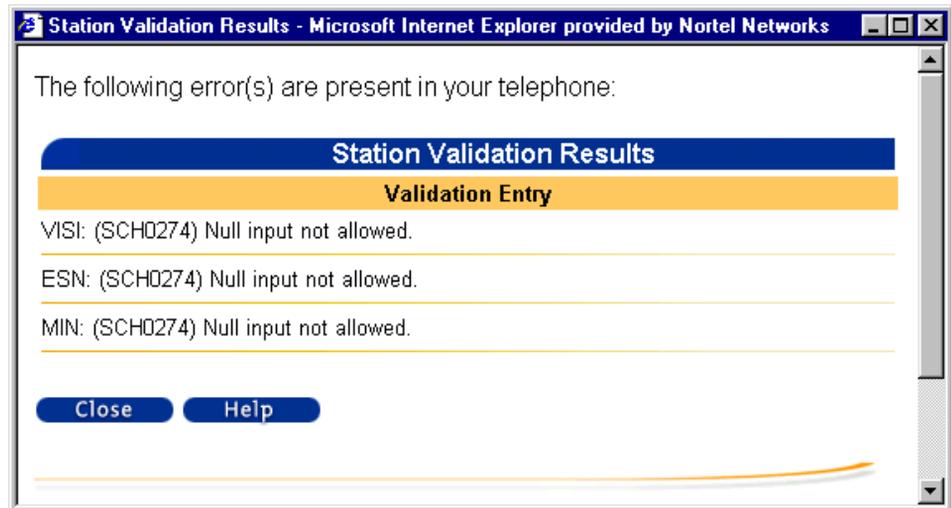


*Schedule button*

The user clicks the Schedule button to schedule synchronization with the Meridian 1 or Succession CSE 1000 system. When the user clicks the Schedule button, the dialog box shown in Figure 131 opens.

**Figure 131** Schedule Changes dialog box
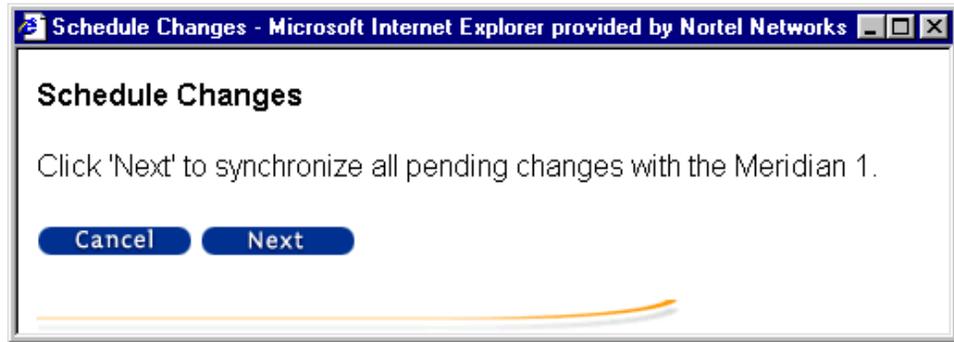


If the user clicks the Cancel button the dialog box closes. If the user clicks the Next button, the dialog box shown in Figure 132 opens.

**Figure 132** Schedule Changes confirmation
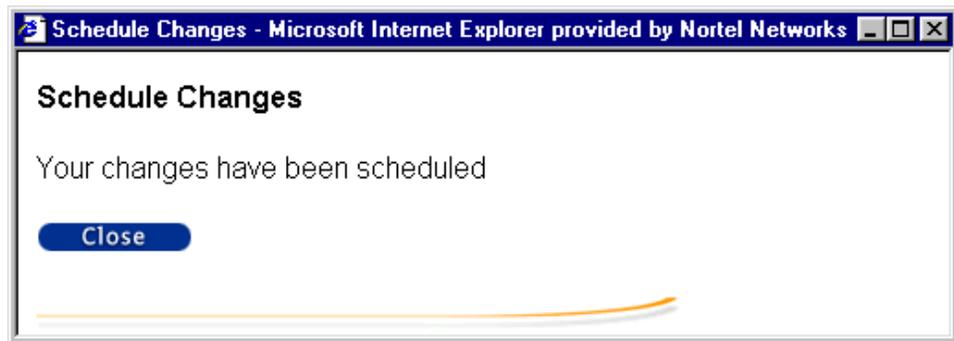


*Restore button*

When the user clicks the Restore button, the dialog box shown in Figure 133 opens.

**Figure 133**   Restore Changes dialog box
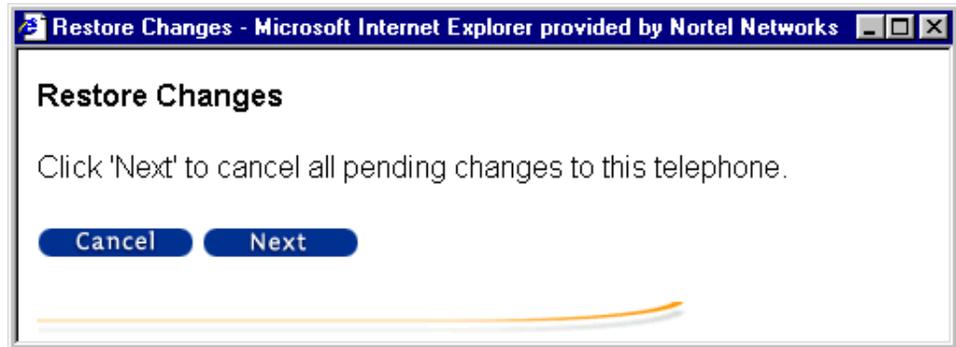


If the user clicks the Cancel button the dialog box closes. If the user clicks the Next button, the dialog box shown in Figure 134 opens.

**Figure 134**   Restore Changes confirmation



When there are pending changes, and the user does not have the "Allow M1 Synchronization" option, the drop down box along with the Validate and Restore buttons are presented as shown in Figure 135. The user is not allowed to schedule synchronization.

**Figure 135** Configuration indication with synchronization not allowed



When the telephone and the Meridian 1 or Succession CSE 1000 system are synchronized, "Current Configuration" appears at the top of the page, and the drop down box is no longer displayed (Figure 136).

**Figure 136** Configuration indication when there are no pending changes



## Telephone General page

The General Page provides general information about the telephone. The following information is displayed on the Telephone General page:

- **Station Location** - a text field similar in purpose to the System field. You may want to use this to provide more user friendly names.
- **System** - identifies the site, system, and customer number, if applicable, where the phone is connected. This information is retrieved from OTM common services and displayed in the format "Site - System - Customer x".
- **Phone type** (M2317, M2616, M3903, etc.)
- **Terminal Number** (TN): Address of the telephone
- **Key Based Modules**
- **Designation** - a unique 1-8 character telephone identifier. This data is stored in station data and the overlays. This field is often used to identify the location of the phone within the building, for example, cable pair, and is the response to the prompt DES in LD 10/11.

Figure 137 shows an example of the Telephone General page.

**Figure 137** Telephone General page



The following fields may be changed by the user if allowed by the access profile:

- Station Location
- Key Based Modules
- Designation

If the user changes one or more of these fields and clicks the Submit button, the Confirm Changes dialog box opens as shown in Figure 138.

**Figure 138**   Confirm changes to the General Phone Properties page
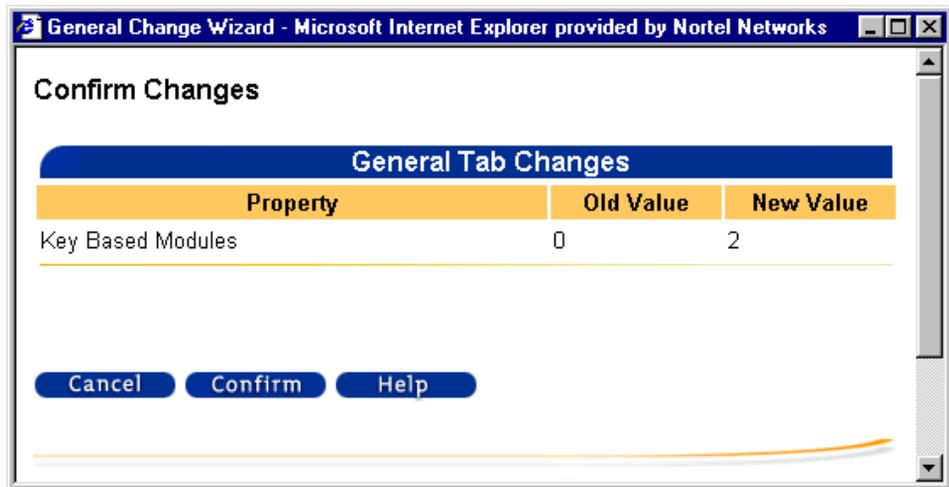


The user verifies the information and clicks the Confirm button. If there are no errors, a change confirmation page opens. See "Change confirmation pages" on page 307 for more information. If there is an error in the proposed change, error details will be displayed instead of the change confirmation page.

The Troubleshoot Problems link, at the bottom of the Telephone General page, provides access to the Telephone Trouble Shooting page.

## Telephone Trouble Shooting page

You can access the Telephone Troubleshooting page from the General Page via the Troubleshoot Problems link. The Telephone Troubleshooting page is shown in Figure 139. The Reset My Phone button performs an enable and status command on this telephone via a Maintenance Windows API.

**Figure 139** Telephone Troubleshooting page
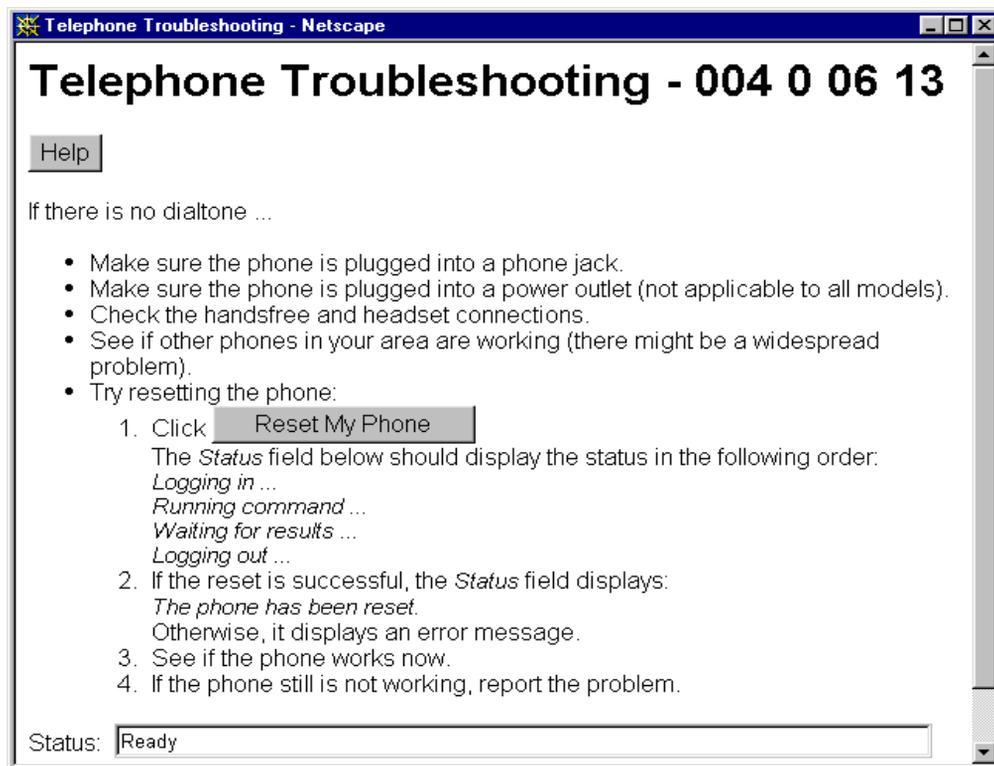


## Telephone Keys page

The Telephone Keys page displays a graphical layout of the function keys assigned to the telephone. The layout varies for different telephone types.

All current feature key assignments will always be visible. The key labels on the graphic match the labels in Station Administration. For M3900 series telephones these labels match the soft labels on the set and the text is shortened to 7 characters. When the page first appears, key 0 is selected. You can select other keys by clicking on a key. Figure 140 shows an example of the Telephone Keys page for an M2616 telephone.

When a key is selected the following occurs:

- The key is highlighted. The method used to highlight depends on the phone type.
- The name of the key and its configurable parameters, if any, are displayed beside the telephone graphic.

A Help button takes you to help on how to use the selected key.

**Figure 140**   Telephone Keys page



If the telephone has key-based expansion modules, a graphic indicates which set of keys is displayed. Use the Next and Previous buttons to "scroll" the graphic from one set of keys to the other.

Figure 141 shows the user interface for the keys associated with a key-based expansion module attached to the M2616 shown in Figure 140.

**Figure 141** Telephone Keys page — Key-based Expansion Module keys

## Changing a key

If permitted by your Access Profile, when you click the Change button after selecting a key, a new browser window opens with the appropriate controls for changing the key you selected. In this browser window, a list of the possible key choices is displayed as shown in Figure 142. This list is dynamic and is based on both the telephone type and the key selected. For example key 17 on an M2317 telephone must be a transfer key.

**Figure 142**   Select Auto Dial key type
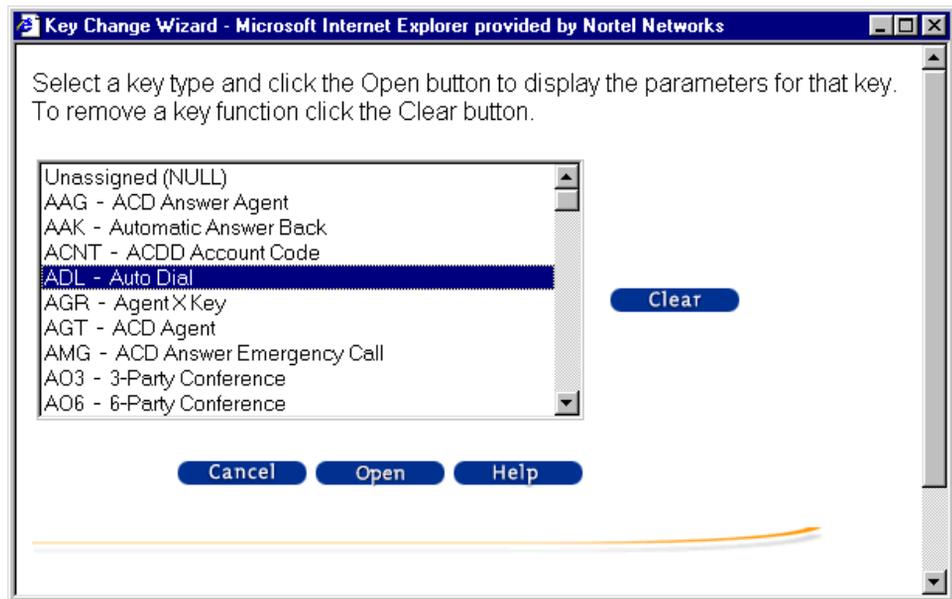


The Help button is context sensitive and accesses the information in the Input/ Output guide on configuring a key for the selected feature or service.

The key's parameters, if any, are displayed on subsequent pages of the wizard.

> → **Note:** The Clear button removes the key function and takes the user to the next page in the key change wizard. As shown in Figure 142, if the telephone key that you have selected is currently unassigned (null), the Clear button does not appear.

*Changing the parameters of an Auto Dial key*

Use the following procedure to change the telephone number assigned to an Auto Dial key:

**1** Click on an Auto Dial key in the graphic on the Telephone Keys page.

**2** Click on the Change button. The Key Change Wizard launches.

**3** Click "ADL — Auto Dial" in the list of key types. See Figure 142.

**4** Click the Open button.

**5** Type the new maximum number of digits and the new Autodial DN in the edit boxes. See Figure 143.

> **Note:** If you change the Number of Auto Dial digits to a value that is greater than the default number in the Meridian 1 or Succession CSE 1000 system, or if you enter an Auto Dial Number that has more digits than the default value, you will receive a validation error.

> **Note:** The Find DN button is used to look up Directory Numbers. It appears whenever there is a DN edit box. For information on using the Find DN button, see "Finding Directory Numbers" on page 299.

**Figure 143** Autodial key change wizard



**6** Click the Submit button.

The key change summary page opens as shown in Figure 144.

**Figure 144**   ADL key change summary
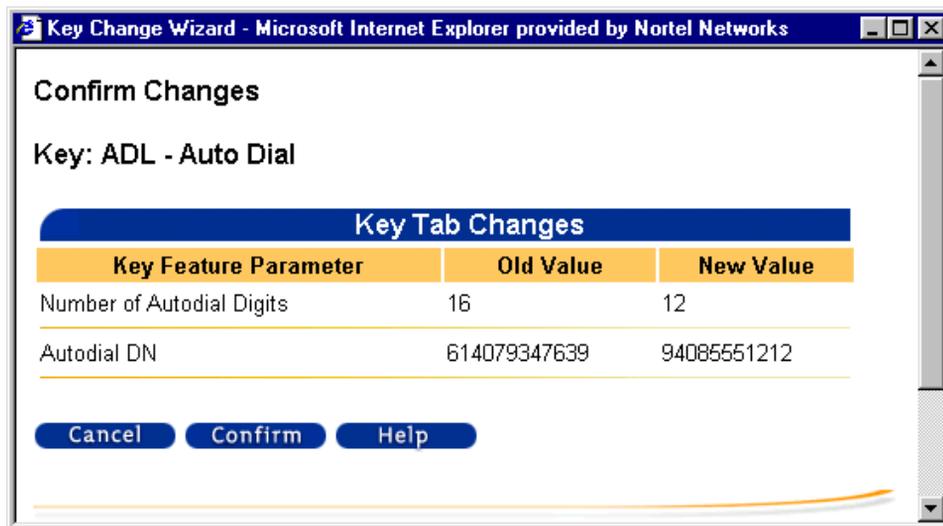


**7**   Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page 307.

### Changing the parameters of an MCR DN key

Use the following procedure to change the first name and last name parameters associated with an MCR DN key:

**1**   Click on an MCR DN key in the graphic on the Telephone Keys page. See Figure 140.

**2**   Click the Change button.

The Key Change Wizard launches. The current key type, "MCR - Multiple Call Ringing", is highlighted. See Figure 145.

**Figure 145** Select Multiple Call Ringing key type
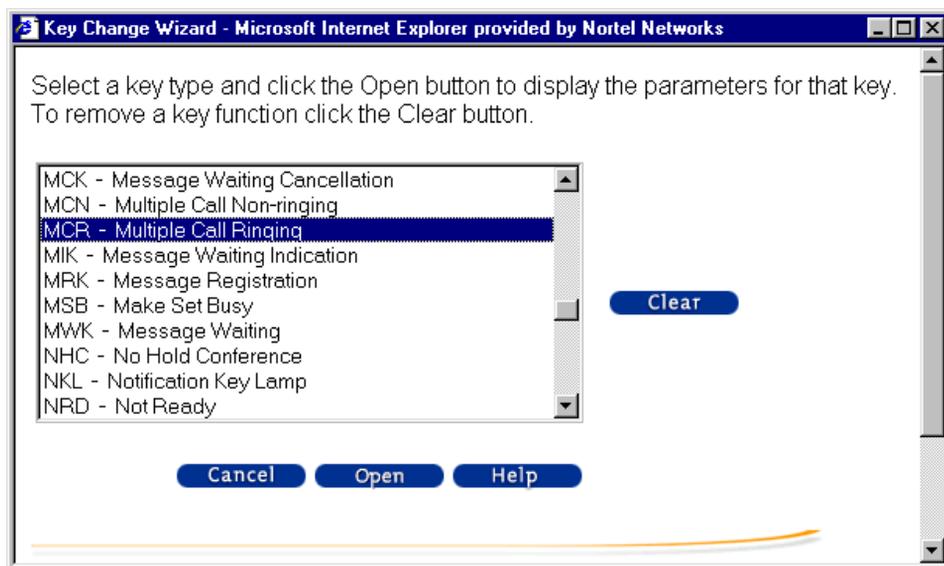


**3** Since you are not changing the key type, simply click the Open button.

The key change wizard displays the current parameters for the selected key. See Figure 146

→ **Note:** You can only modify the DN, CPND, and CLID. You may not view or change the DN's Voice Mailbox, ANI, or MARP.

→ **Note:** When the Name Display Link to Directory check box is checked in Station Administration, the values for the First Name and Last Name fields are obtained from the directory and are not editable.

→ **Note:** If the key change wizard does not display a Directory Number, or if you want to change the Directory Number, see "Finding Directory Numbers" on page 299.

**Figure 146**  Current parameters for Multiple Call Ringing DN key



**4**  Change the First Name and Last Name as shown in Figure 147.

**Figure 147**  Changed parameters for Multiple Call Ringing DN key

**5** Click the Submit button.

A summary page opens that displays your changes as shown in Figure 148.

**Figure 148** MCR key change summary page
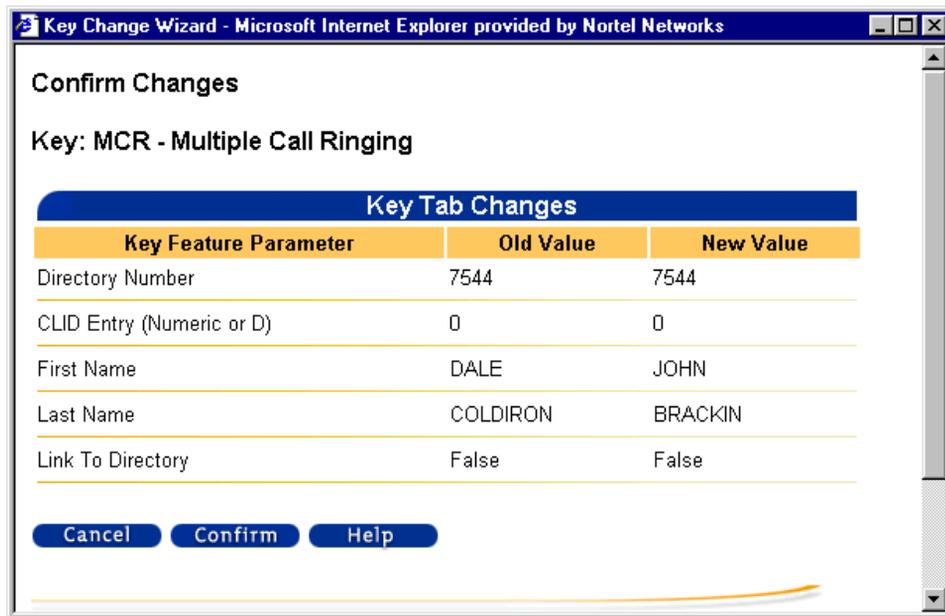


**6** Click the Confirm button. A confirmation page is displayed. See "Change confirmation pages" on page 307.

*Changing a key type*

Use the following procedure to change a Conference key to a Call Forward key:

**1** Click on the Conference key in the graphic on the Telephone Keys page. See Figure 140.

**2** Click on the Change button.

The Key Change Wizard launches. The current key type is highlighted as shown in Figure 149.

**Figure 149**   Key Change Wizard displaying current key type
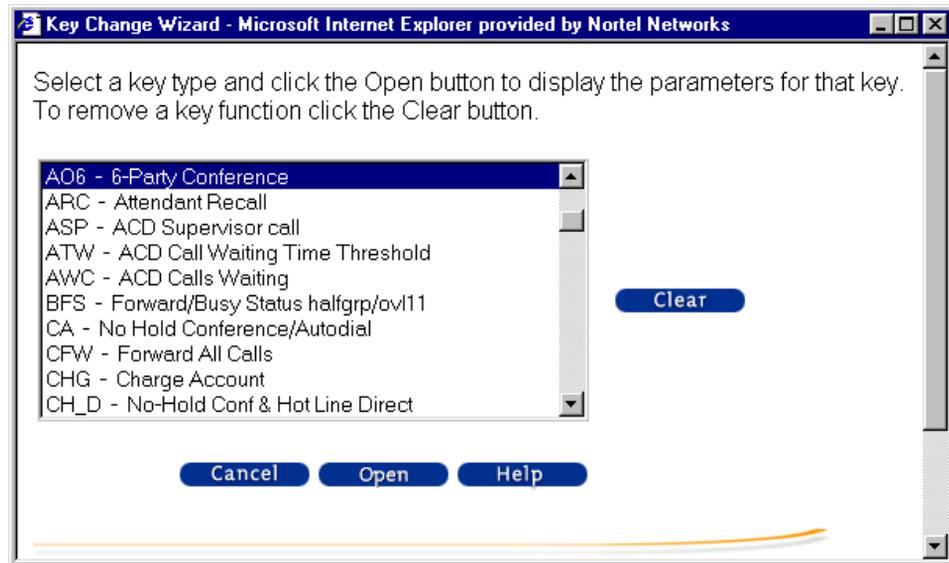


**3**   Click "CFW - Forward All Calls" in the list of key types. See Figure 150.

**Figure 150**   Select the Forward All Calls key type
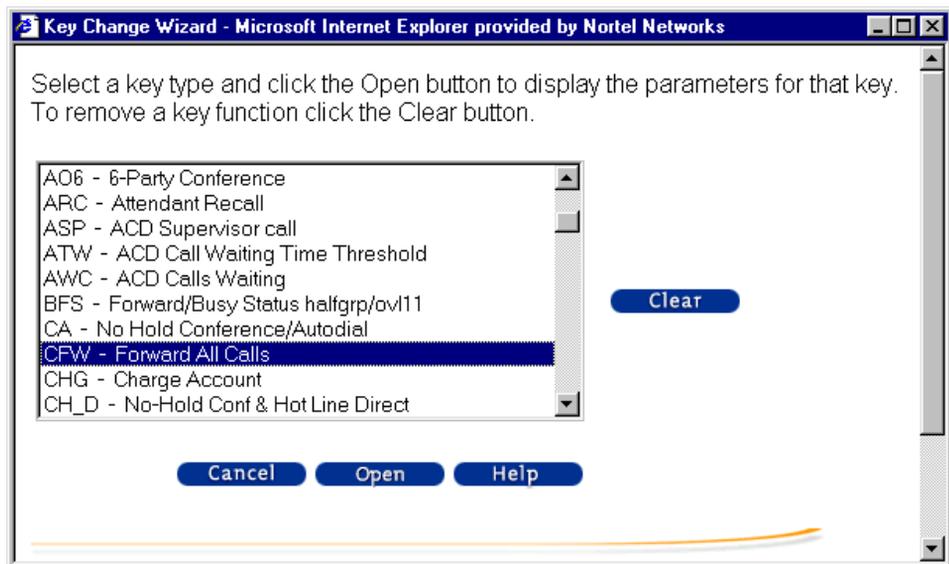


**4**   Click the Open button.

**5** Enter the Redirection DN Length and Redirection DN in the edit boxes. See Figure 151.

> **Note:** When changing a key type, the default values are not displayed. If you enter a Redirection DN length that is greater than the default value in the Meridian 1 or Succession CSE 1000 system, or if you enter a Redirection DN that has more digits than the default value, you will receive a validation error.

**Figure 151**   Forward All Calls key change wizard



**6** Click the Submit button.

The key change summary page opens as shown in Figure 152.

**Figure 152**   CFW key change summary page
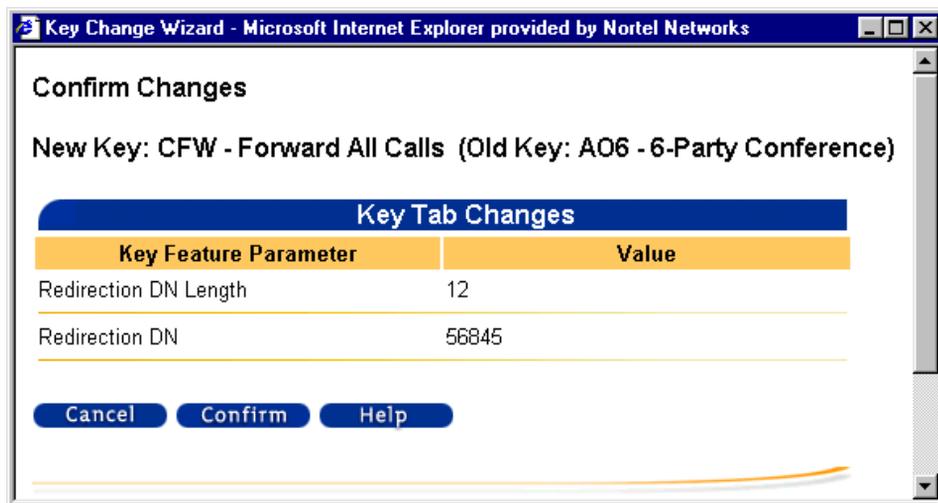


**7**   Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page 307.

*Removing a key*

Use the following procedure to remove the function associated with a key, creating a blank, or unassigned, key:

**1**   Click on a key in the graphic on the Telephone Keys page. See Figure 140.

**2**   Click the Change button.

The Key Change Wizard launches. The function associated with the selected key is highlighted in the list, Forward All Calls in this example. See Figure 153.

**Figure 153** Current key function displayed in the key change wizard
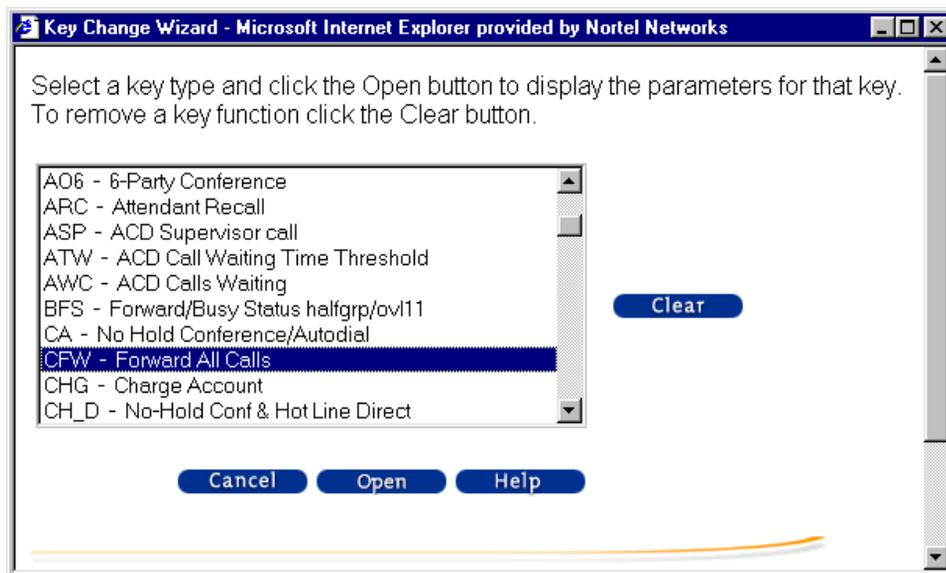


**3** Click the Clear button.

The key change summary page opens as shown in Figure 154.

**Figure 154** Unassigned key change summary page
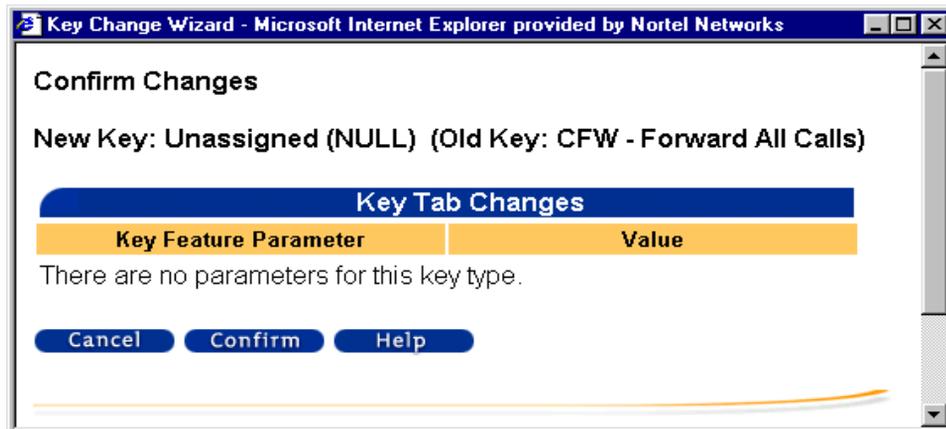


**4** Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page 307.

*Finding Directory Numbers*

The Find DN button is used to look up used or unused Directory Numbers. It appears next to the edit box for any DN key.

**Find Used Directory Numbers**

**1**    Click on the Find DN button. See Figure 146. The Find Directory Numbers page opens as shown in Figure 155.

**Figure 155**    Find Directory Numbers page



**2**    Click on the Find Unused DNs radio button.

**3**    Enter a range of DNs on which to search.

> **Note:** You must have a Numbering Plan defined in the System Properties in OTM Windows Navigator to use the Find Unused DNs feature. If the Numbering Plan is not defined, or if there are no unused DNs, an error message is displayed. See Figure 157.

**4** Click the Find Button. If unused DNs are found, a page similar to the example shown in Figure 156 appears. If there are no unused DNs found, the message shown in Figure 157 appears.

**Figure 156** Find results when Unused DNs exist
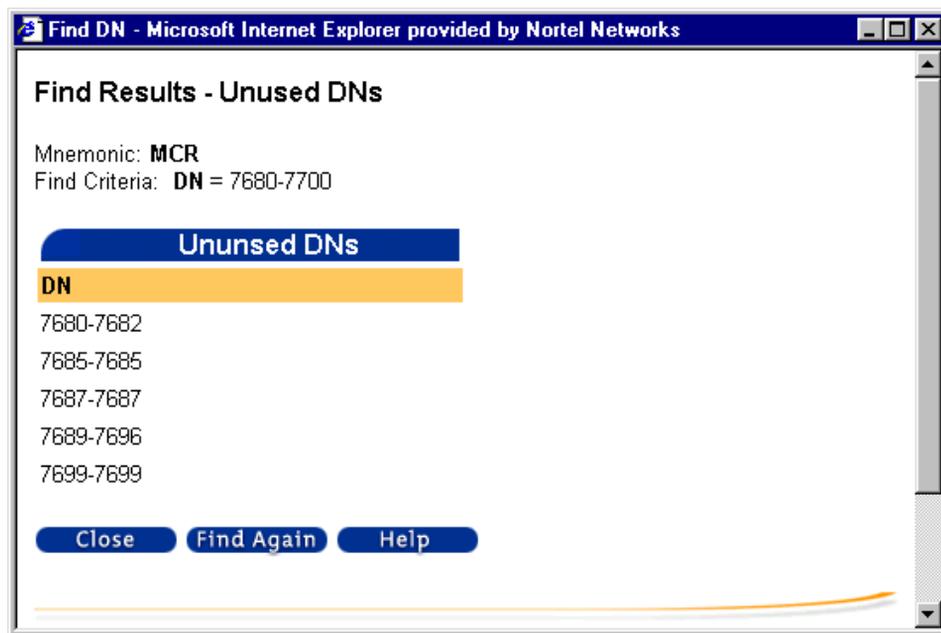


**Note:** Only the unused DNs belonging to the same site, system, and customer as the telephone are shown.

**Note:** If you press the Find Again button, you return to the previous screen and you can enter a different range of DNs.

**Figure 157**   Find results when no Unused DNs exist
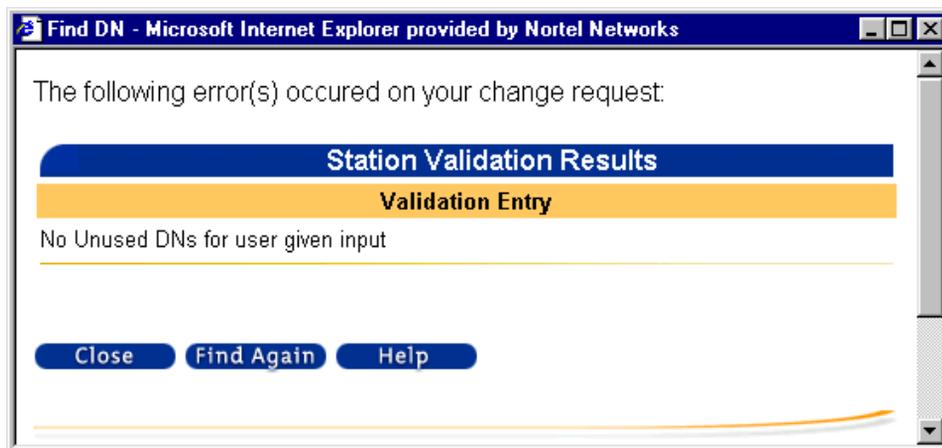


**Find Used Directory Numbers**

**1**   Click on the Find DN button. See Figure 146. The Find Directory Numbers page opens as shown in Figure 155.

**2**   Click on the Find Used DNs radio button.

**3**   Click on the radio button that corresponds to your search criteria

- To search by DN, enter a range of DNs on which to search.
- To search by last name, enter the last name of the person whose name is assigned to the DN you are seeking.
- To search by first name, enter the first name of the person whose name is assigned to the DN you are seeking.

**4**   Click on the Find button. If DNs that match your search criteria are found, a page similar to the example shown in Figure 158 appears. If there are no DNs that match your search criteria, a message similar to the one shown in Figure 159 appears.

**Figure 158** Find results when there are matching used DNs
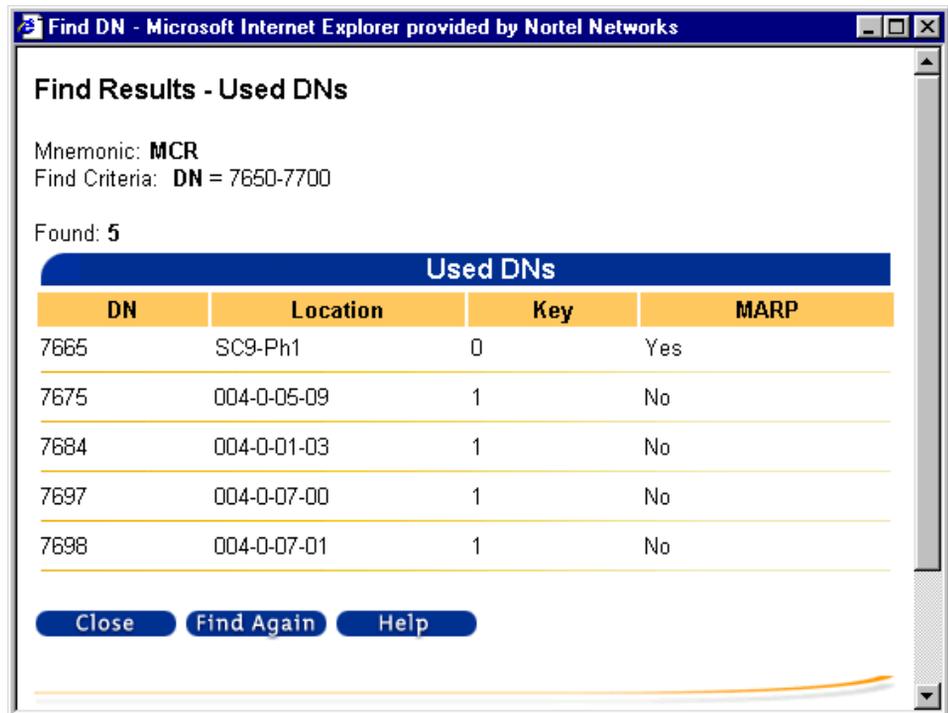


**Figure 159** Find results when there are no matching used DNs
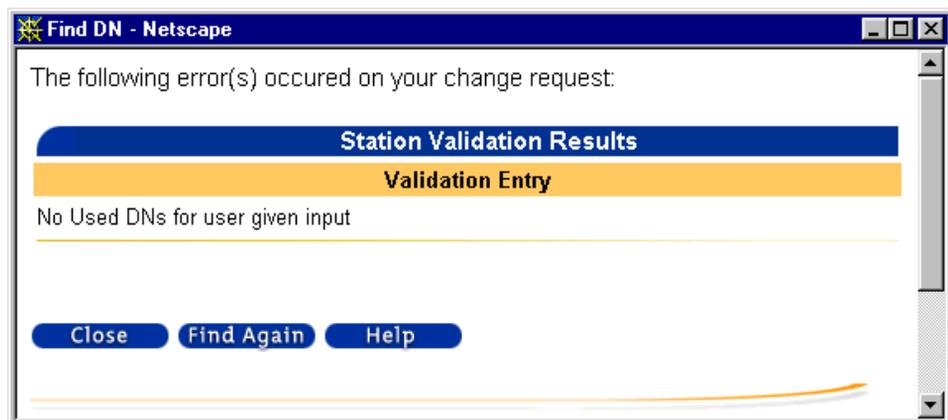
## Telephone Features page

The Telephone Features page allows you to view and change features that are not assigned to keys. Features are related to individual prompts in LD 10 or 11, with one or more configurable parameters.

The administrator determines which features the user can see in the list. If the user's Access Profile allows changes, the Submit and Reset buttons appear as shown in Figure 160.

Whenever possible, a drop down list box containing all possible values for the feature is provided. In cases where this is not possible, for example when entering a call forward DN, an edit box is provided.

**Figure 160** Telephone Features page

# Telephone Details page

The Telephone Details page provides a summary of the complete telephone configuration. It consists of two tables, one for the keys (Figure 161), and one for the features (Figure 162).

**Figure 161**   Telephone Details layout (keys)

**Figure 162** Telephone Details layout (features)

# Change confirmation pages

A confirmation page appears when you click the Confirm button in the change summary page for the General, Keys, or Features tab. The confirmation page varies based on the user's access profile.

When the user's access profile allows the Meridian 1 or Succession CSE 1000 synchronization option, the page shown in Figure 163 appears.

**Figure 163**   User confirmation with automatic synchronization
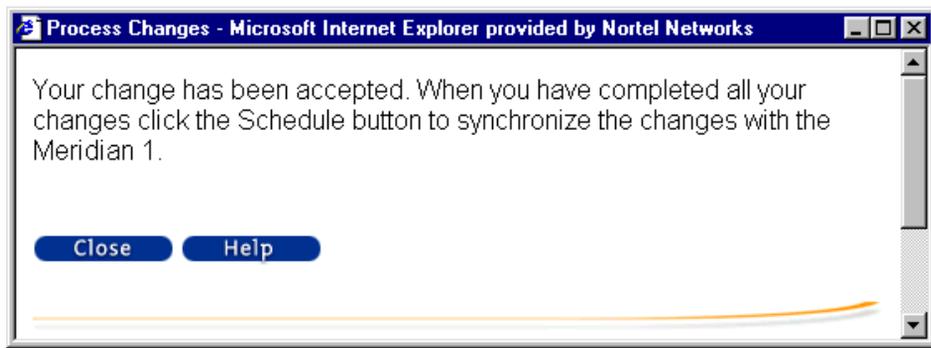


If the user's access profile does not permit automatic synchronization, any changes that have been input will occur the next time you perform a synchronization, and the page shown in Figure 164 appears.

→ **Note:** Use Station Administration to view pending changes. Revert any scheduled changes that you do not want to occur prior to synchronization.

**Figure 164**   User confirmation when system administrator approval is required
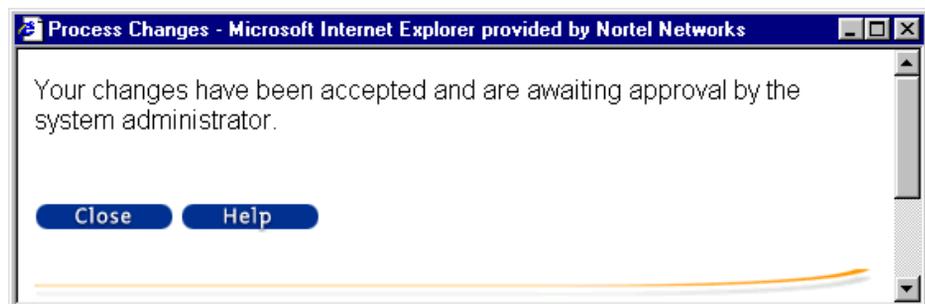
If there is a validation error, the user is presented with an error message similar to the example shown in Figure 165.

**Figure 165** Example of a validation error message
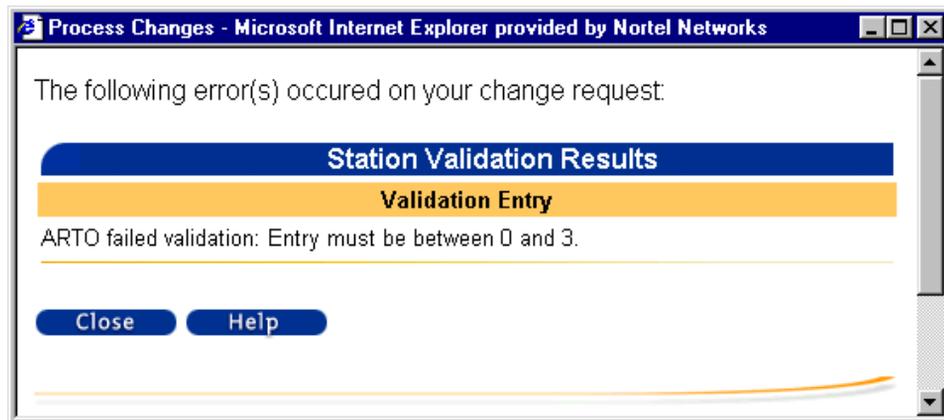


## Telephone change procedure for an End User

The following procedure outlines the steps that a user with the EndUser Access Profile takes to make changes to their telephone.

1 Launch a supported Web browser and navigate to the OTM host name or IP address provided by the System Administrator.

2 Log into Desktop Services using the end user Windows NT login name provided by your System Administrator.

The My Profile Web page is displayed. This contains your OTM Directory information. See Figure 127 on page 276.

3 Click on a telephone extension link in the Navigation Bar.

The General page is displayed. If allowed by your System Administrator, you can change the Station Location, Key Based Modules, and Designation fields. See Figure 137 on page 284. To make a change:

a Enter the new value and click the Submit button.

A page containing a summary of the changes opens. See Figure 138 on page 285.

b Click the Confirm button.

A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

> **Note:** The sync status of the telephone is displayed at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown. Once the telephone and the Meridian 1 or Succession CSE 1000 system have been synchronized, "Current configuration" appears at the top of the page, and the drop down box is no longer displayed.

**4**   Click the Keys button.

The Keys page is displayed. If allowed by your System Administrator, you can change the key-based features, or functions, assigned to any of the keys. To make a change:

**a**   In the graphical representation of your telephone, click the key you want to change. See Figure 140 on page 287.

**b**   Click the Change button.

A list of the available choices for the selected key is displayed in the Key Change Wizard. See Figure 142 on page 289.

**c**   Select a new key-based feature to assign to the key and click the Open button.

**d**   If required, the Key Change Wizard opens a page that requests you to enter the parameters for the selected key. See Figure 143 on page 290.

**e**   Enter the parameters and click the Submit button.

A page containing a summary of the changes opens. See Figure 144 on page 291.

**f**   Click the Confirm button.

A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

**5**   Click the Features button.

The Features page is displayed. If permitted by your System Administrator, you can change the allowed/denied status or settings of features assigned to your extension. See Figure 160 on page 304. To make a change:

**a** Do one of the following:

• Select the appropriate value for the desired feature from the drop down box.

• Enter the value of the parameter associated with the desired feature in the edit box.

**b** Click the Submit button.

A page containing a summary of the changes opens.

**c** Click the Confirm button.

A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

**6** Click the Details button. Information on the Keys and Features currently assigned to your telephone is presented on the Details page. This page is always read only. See Figure 161 on page 305 and Figure 162 on page 306.

**7** If a Schedule button appears at the top if the Telephone pages, your System Administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your System Administrator will review your changes and manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

**a** Click the Schedule button.

**b** Wait a few moments for the synchronization to occur.

**c** Click the Refresh button in your browser.

When the Show Current configuration/Pending changes drop down list is no longer displayed, all of your changes have been made and the telephone has the new configuration.

**8** If allowed by your network administrator, click the Billing Reports link in the Navigation Bar to view your telephone billing reports from the Telecom Billing System (TBS). For information on the TBS Web Reporting application, see *Optivity Telephony Manager Telemanagement Applications* (553-3001-331). TBS Web Reporting is available with OTM 1.2 and later.

## Telephone change procedure for a Help Desk User

The following procedure outlines the steps that a user with the HelpDesk User Access Profile takes to make changes to a telephone.

**1** Launch a supported Web browser and navigate to the OTM host name or IP address, provided by the System Administrator, with "/admin" appended to the address.

**2** Log into the Web Navigator using the Help Desk Windows NT login name provided by your System Administrator.

**3** Click the Find link under Telephones in the Navigation Bar.

The Find Telephones page opens.

**4** Perform a search to locate the record for the telephone you want to change.

See "Find Telephones page" on page 239 for information on how to perform a search.

**5** On the Find results page, click the link in the Location column that corresponds to the telephone you want to change.

The General page for the telephone is displayed. If allowed by your System Administrator, you can change the Station Location, Key Based Modules, and Designation fields. See Figure 137 on page 284. To make a change:

**a** Enter the new value an click the Submit button.

A page containing a summary of the changes opens. See Figure 138 on page 285.

**b** Click the Confirm button.

A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

| → | **Note:** The sync status of the telephone is displayed at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not been synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown. Once the telephone and the Meridian 1 or Succession CSE 1000 system have been synchronized, "Current configuration" appears at the top of the page, and the drop down box is no longer displayed. |
|---|---|

**6**  Click the Keys button.

The Keys page is displayed. If allowed by your System Administrator, you can change the key-based features, assigned to any of the keys. To make a change:

**a**  In the graphical representation of the selected telephone, click the key you want to change. See Figure 140 on page 287.

**b**  Click the Change button.

A list of the available choices for the selected key is displayed in the Key Change Wizard. See Figure 142 on page 289.

**c**  Select a new key-based feature to assign to the key and click the Open button.

**d**  If required, the Key Change Wizard opens a page that requests you to enter the parameters for the selected key. See Figure 143 on page 290.

**e**  Enter the parameters and click the Submit button.

A page containing a summary of the changes opens. See Figure 144 on page 291.

**f**  Click the Confirm button.

A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

**7**  Click the Features button. The Features page is displayed. If allowed by your System Administrator, you can change the allowed/denied status or settings of

features assigned to the telephone. See Figure 160 on page 304. To make a change:

   **a** Do one of the following:

   • Select the appropriate value for the desired feature from the drop down box.

   • Enter the value of the parameter associated with the desired feature in the edit box.

   **b** Click the Submit button.

   A page containing a summary of the changes opens.

   **c** Click the Confirm button.

   A confirmation message is displayed. See Figure 163 through Figure 165 on page 308.

**8** Click the Details button. Information on the Keys and Features currently assigned to the telephone is presented on the Details page. This page is always read only. See Figure 161 on page 305 and Figure 162 on page 306.

**9** If a Schedule button appears at the top if the Telephones pages, your system administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your System Administrator will review your changes and manually synchronize the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

   **a** Click the Schedule button.

   **b** Wait a few moments for the synchronization to occur.

   **c** Click the Refresh button in your browser.

When the Show Current configuration/Pending changes drop down list is no longer displayed, all of your changes have been synchronized and the telephone has the new configuration.

> **Note:** If the Show Current configuration/Pending changes drop down box continue to be displayed, locate the record for the telephone using the Find Telephones page. If the changes have been transmitted to the Meridian 1 or CSE 1000 system, the sync status for the telephone will be displayed as "TRN". Any other value in the sync status column indicates that the synchronization process has failed. You should either re-submit the request or review the log files on the OTM server.

## Billing Reports

The Billing Reports link is visible in the Navigation bar if the user has a Web Reporting Role other than "No Access" defined in their OTM Directory record. Web Reporting Roles are: All, Peer, Managed, Personal and No Access. If the Web Reporting Role is No Access, or if it is left blank, the Billing Reports link is not displayed. Billing Reports requires the Billing Enhanced Package and is available with all three levels of OTM, General, Enhanced, and Premium.

## Other Links

You can define the Other Links button of the Navigation Bar. If you do not define links, then this section is not visible. To define Other Links edit the HTML file as shown in Figure 166. The file is located in: "<Nortel>\OMServices\OMStation\EndUser\Eng".

To launch Web pages from the Windows Navigator, double click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, a Web browser window will open. The URL for the application is set in the Web URL field in the Properties—Applications tab.

To launch an executable file from the Windows Navigator, double click on the item in the Navigator. You are asked whether you are launching a Terminal or an Application. If you select Application, the executable file will launch. The location for the executable is set in the path field in the Properties—Applications tab.

**Figure 166**  Other Links
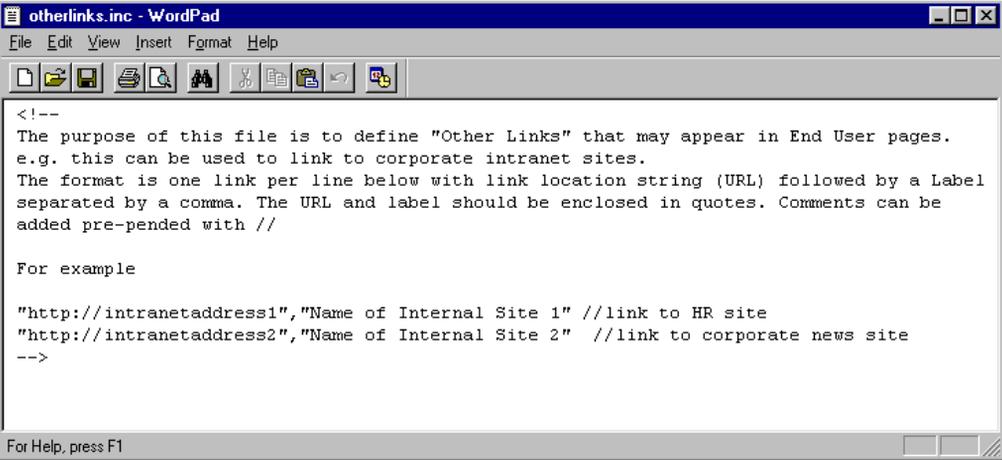


## Meridian Mail

One possible item which could go into the Other Links section is a link to
Personal Mailbox Administration (PMA). This link takes the user to the URL for
logging into the Meridian Mail web pages. The user must enter the mailbox
number and password to proceed. Once logged in, the user can view and change
their mailbox configuration. This feature is available with Meridian Mail 13 and
later releases.

**Figure 167**   Meridian Mail Login

# Chapter 4
# Station Administration

Optivity Telephony Manager (OTM) provides system administrators with powerful tools for maintaining and updating Meridian 1 and Succession CSE 1000 systems. The OTM software package consists of OTM Common Services and several OTM applications, each of which provides specific system management capabilities. This chapter describes the OTM Station Administration application.

## Overview

The Station Administration application helps administer data bases that define end-user stations (telephones) on Nortel Networks Meridian 1 and Succession CSE 1000 systems. The Station Administration application contains the following modules:

### Station Administration

This module allows you to change station data on an individual or selected group basis.

### CPND

Use this module to manage Call Party Name Display (CPND) data.

### List Manager

Use this module to manage data for Speed Call, Group Call, and Group Hunt lists.

## Report Generator

This module allows you to create and produce standard or customized reports.

## Conversion utility

This module provides import and file rebuild capabilities.

## Communications

This module synchronizes OTM and Meridian 1 or Succession CSE 1000 system data. It is used to copy OTM data to Meridian 1 or Succession CSE 1000 systems, and to copy Meridian 1 or Succession CSE 1000 system data to OTM.

## Related OTM Documents

The information presented in this chapter should be read in conjunction with *Installing and Configuring Optivity Telephony Manager* (553-3001-230), which describes the installation and configuration of OTM. Refer to Chapter 2, "Common Services" for information on how to operate and maintain the different applications within the OTM suite.

## OTM Directory

The OTM Directory feature allows you to share common user data (Name, Department etc.) between OTM applications such as Station Administration and Telecom Billing System. OTM Directory Services is described more fully in Chapter 2, "Common Services." beginning on page 105.

## OTM Desktop Services

OTM Desktop Services allows end users to view the configuration of their telephone through a web browser.

The OTM Web Navigator provides many of the same functions available in the OTM Windows Navigator. The OTM Windows Navigator allows you to view, configure and administer sites, systems, and users. Although the Web Navigator does not offer all of the same features, the presentation of Meridian system and feature information is easy to navigate. OTM Web security meets the same criteria as provided by Windows NT.

One of the advantages of the OTM web interface is the ability for users to configure their telephones through their web browser. As an administrator, using Web Desktop Services, you can also block end user access to configuration screens. A particularly useful Desktop Services feature is the ability to customize the help files to suit specific customer needs. The web display of telephone data includes a graphical representation of the telephone as shown in Figure 168. The page shows the features that are configured for the telephone, and provides access to help text for telephone features.

**Figure 168**   Telephone keys page

For more information on Web Desktop Services, refer to "Desktop Services" on page 271.

## Web-based Station Administration

A subset of the functionality available in Station Administration is also available using the Web interface. Table 16 outlines the features that are available using Windows-based Station Administration and which of these features are supported through the Web-based Station Administration interface. For information on additional features that are available with Web-based Station Administration, please see Chapter 3, "Web Services," on page 229.

**Table 16**   Comparison of Windows and Web-based Station Administration

| Functionality | Supported in Windows-based interface | Supported in Web-based interface |
|---|---|---|
| *Station Administration* | | |
|   Record View [A] | Yes | Yes |
|   Addition of a new telephone | Yes | No |
|   Deletion of an existing telephone | Yes | No |
|   Swapping of two telephones | Yes | No |
|   Restore [B] | Yes | Yes |
|   Global Update [C] | Yes | No |
|   Modify a telephone | | |
|     — Modify telephone owner | Yes | No |
|     — Modify customer number | Yes | No |
|     — Modify location | Yes | Yes |
|     — Modify key configuration | | |
|       • Key feature list | Yes | Yes |
|       • DN list | Yes | Yes [D] |
|     — Modify feature/CLS configuration [E] | | |
|       • Feature list | Yes | Yes |
|       • TN list [F] | Yes | No |
|     — Modify admin fields [G] | Yes | No |
|     — Modify value for number of key-based expansion modules | Yes | Yes |
|     — VMB, MARP, ANIE configuration | Yes | No |
|     — CPND name configuration for a DN | Yes | Yes [H] |
|     — Interaction with Employee Editor [I] | Yes | Yes |
|   Validation of a telephone | Yes | Yes |
|   Forms interface or Power User tool | Yes | No |
|   Form editor [J] | Yes | No |
|   Designation strips [K] | Yes | No |
|   Print reports [L] | Yes | No |
| *Templates* | | |
|   Template configuration [M] | | |
|     — Addition/deletion/modification/validation | Yes | No |
| *Hardware* | | |
|   Hardware configuration [N] | | |
|     — Addition/deletion/modification/validation | Yes | No |

**Table 16** Comparison of Windows and Web-based Station Administration (continued)

| Functionality | Supported in Windows-based interface | Supported in Web-based interface |
|---|---|---|
| ***CPND Customer Configuration*** | | |
| CPND Customer Configuration [O] | | |
| — Addition/deletion/modification/validation | Yes | No |
| ***CPND Name Configuration*** | | |
| CPND Name Configuration [P] | | |
| — Addition/deletion/validation | Yes | No |
| — Modification | Yes | Partially [Q] |
| — Interaction with Employee Editor | Yes | Yes |
| ***Synchronization with Meridian 1 or Succession CSE 1000 systems*** | | |
| Transmission of telephone changes to the system | Yes | Yes [R] |
| Retrieval of telephone information from the system | Yes | No |
| Synchronization of CPND customer data | Yes | No |
| Synchronization of CPND name data | Yes | No |
| ***Employee Editor User Interface*** | | |
| Employee Editor UI [S] | Yes | Partially [T] |
| — Addition of new employee | Yes | No |
| — Modification of existing employee | Yes | Partially [U] |
| — Deletion of an employee | Yes | No |
| Rebuild directory | Yes | No |
| Audit - full/partial [V] | Yes | No |
| ***Report Generator*** | | |
| Report Generator [W] | Yes | No |
| ***Conversion Utility*** | | |
| Conversion Utility [X] | Yes | No |
| ***Station Administration Options*** | | |
| Operation mode - Installation/Maintenance [Y] | Yes | No |
| Operation mode - Ignore numbering plan/hardware check [z] | Yes | No |
| ***Online Help/Documentation*** | | |
| Station Administration Help | Yes | Yes |
| **Notes:** [A] Reading station data records and displaying the selected information in tabular form [B] Changes made by the administrator are rolled back [C] Making changes to multiple telephones | | |

**Table 16**   Comparison of Windows and Web-based Station Administration (continued)

| Functionality | Supported in Windows-based interface | Supported in Web-based interface |
|---|---|---|
| **Notes:** (continued) | | |
| D Search provided for used/unused DNs in Web-based Station Administration | | |
| E CLS = Class of Service; Feature = non-key based features | | |
| F Shows list of TNs and associated location if the TN is assigned | | |
| G Non-Meridian 1 or Succession CSE 1000 data fields used to store administration related information | | |
| H Only the CPND name associated with a DN that is assigned to a key can be modified | | |
| I The Employee Editor needs to be updated whenever the DN, Location, or TN for a telephone is modified | | |
| J A tool to create custom forms | | |
| K Printed labels that are used on telephone keys to indicate the associated feature | | |
| L Canned reports based on Mnemonics, Feature Groups, and so forth | | |
| M Templates that can be used to create new telephones with predetermined feature/key configurations | | |
| N Hardware view of Windows-based Station Administration is used to manage the information about digital and analog line cards | | |
| O CPND view of Windows-based CPND Administration stores customer information related to CPND name | | |
| P CPND Name view of Windows-based CPND Administration stores CPND Name information associated with DNs | | |
| Q Can be modified while modifying a key configuration in Web-based Station Administration. | | |
| R Only Schedule Now option available. Each task can transmit the changes for only one telephone. | | |
| S Provides the capability to add/modify/ delete employees to the Station Administration employee database | | |
| T Provided as the "Directory Update" application in Web-Based OTM | | |
| U Only the User Group, Published, Login, and Report Access Group fields can be modified | | |
| V Brings Station Administration and Directory into sync | | |
| W Generated custom reports based on Station/CPND database | | |
| X Utility to run database conversion. Usually runs during the end of installation; however, you can also launch it from Windows-based Station Administration | | |
| Y In maintenance mode, you are provided with an option to schedule the transmission of changes the very next moment after you apply changes to a telephone. In installation mode, you configure all of the telephones and then schedule a bulk transmission of the changes | | |
| Z Provides options to turn off validation of DNs against the numbering plan and validation of TNs against hardware data | | |

# Before you start

Before you can start using OTM Station Administration, you must retrieve station, customer, and other associated data files from the Meridian 1 or Succession CSE 1000 system. The following summarizes the steps to follow before you can use OTM Station Administration.

## Ensure site and system information is defined

The properties of sites and systems must be defined before you can use Station Administration. See Chapter 2, "Common Services" for detailed procedures.

- Define site properties in the New Site Properties sheet.
- Define system properties in the System Properties dialog box. Be sure to completely define information in the following tabs
    — General tab: include system name and short name
    — Communications tab: include at least one communications profile
    — Applications tab: be sure to enable the Station Administration application and a corresponding communication profile
    — Customers tab: be sure to add at least one customer (usually Customer 0) and define this customer's properties to include a customer name, user ID, and password. You'll have to define unique names, IDs and passwords for each customer added.
    — Numbering Plans tab: define a numbering plan for each customer using the Numbering Plans tab found under the Customer Properties sheet. Station Administration uses information entered here to provide a list of available extensions (DNs) and will validate the extensions against the applicable feature (e.g., ACD DN).

Once defined, sites and systems appear as icons in the OTM Navigator and System windows.

## Update the system data

To update the system data:

**1** From the OTM Navigator window, double click on the system to open the system window for the system you want to update.

**2** Choose File > Update System Data. The dialog box shown in Figure 169 opens.

**Figure 169**    Update system data dialog box
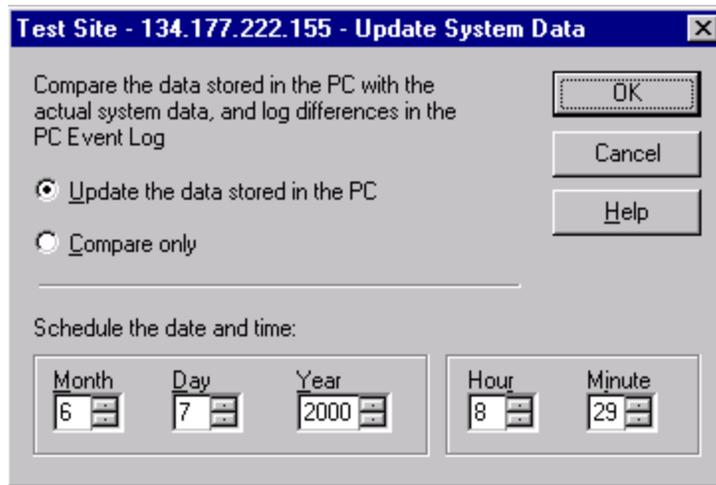


When you update the system data, your X11 packages, Customer Data Block information, and Configuration Record information are brought over to OTM.

**3** Click OK to update the system data.

## Retrieve customer station data

Open the System window. View the applications available for the system you have defined and open the Station Administration application under the Stations icon. With the Station Administration window open, retrieve station data for the system. Choose Synchronize-Retrieve-All from the menu bar.

→ **Note:** When station data is retrieved the primary Directory Number and names from the name display assigned to station prime Directory Number are used to populate the OTM Directory. Refer to the *OTM Directory Services* section of this document for further detail.

## Retrieve Reserve Unit TNs

With the Station Administration window open, retrieve Reserve Unit TN information. Choose Synchronize > Retrieve > Reserve Unit TNs. The Synchronization window opens. Click OK to begin retrieval.

## Retrieve CPND configuration

Open the System window. View the applications available for the system you have defined and open the CPND application under the Stations icon. The CPND Name window appears listing names of users on the system. Choose View > CPND from the menu bar. The CPND window appears.

Choose Synchronize > Retrieve > Specify from the menu bar. The Call Party Name Display Retrieve window opens. Enter the customer number. Click OK. The Synchronization window opens. Click OK to begin retrieval.

## Retrieve CPND names

With the CPND window open, choose View > CPND Name. The CPND Name window appears. With the CPND Name window open, retrieve CPND data for each customer on the system. Choose Synchronize > Retrieve > All from the menu bar. The Synchronization window opens. Click OK to begin retrieval.

Repeat this step for each customer on the system.

| → | **Note:** CPND names are automatically retrieved as part of customer Station data retrieve. This step is not necessary if you have performed a customer Station data Synchronize > Retrieve > All. |
|---|---|

## Additional considerations

While getting started with Station Administration, you will be communicating with the Meridian 1 or Succession CSE 1000 system. For further information, see

Retrieving information from large systems can be time consuming and negatively affect system performance. You can use the Scheduler utility to plan when to perform these tasks, usually during hours when the number of users on the system are low, to minimize the effect of this operation on the system's performance.

# Using Station Administration

Before using OTM Station Administration, you must install and configure the software. Refer to *Installing and Configuring Optivity Telephony Manager* (553-3001-230) for installation instructions.

## Overview

OTM Station Administration supports creation, maintenance, change, and reporting of single and multi-line station data and Call Party Name Display (CPND) information. Station data defines the setup for each user (telephone) connected to the Meridian 1 or Succession CSE 1000 system.

Station data can be collected from the Meridian 1 or Succession CSE 1000 system, or can be created within OTM. You can change this data within OTM and upload it to update the Meridian 1 or Succession CSE 1000 data base.

Each system has a number of stations. You can set up each station individually. In practice, many stations will have features in common. All features of any station can be set individually, or in groups with common criteria. The Station Administration module lets you create many stations with identical features using templates. However, those features that can be considered unique for a station (such as DN, TN, name, and location) are accessible through a dialog that graphically represents the appearance of the instrument at that station. All other features are accessible from this dialog through function buttons.

# Station data considerations

You should be aware of the following considerations when operating the Station Administration module:

## Location

The OTM application uses one field (Location) in the station data base to identify and index a station record. Station data records are stored and retrieved by the value in this field. Since this is the primary identifier for a station within OTM, each station must be assigned a unique Location value. A new station cannot be created in OTM until you assign a unique Location value. Furthermore, Location is the only station record field that is required by OTM—see "DES" below. OTM validates this field during data entry and will not allow non-unique values or no value.

The Location field is not stored in the Meridian 1 or Succession CSE 1000 system. Data retrieved from Meridian 1 or Succession CSE 1000 system containing stations not currently defined in OTM will have the fully qualified Terminal Number field value (with dashes for separators instead of blanks) assigned to the Location field. You can edit this value to conform with your Location value rules.

## DES

The DES field is a required field for station data residing on the Meridian 1 or Succession CSE 1000 system. It is possible to create station data within OTM that has no DES field value (This 1-6 character designator value can be assigned through the Administration feature of the Features function in Station Administration). In such cases, OTM attempts to assign the first 6 characters of the Location value to DES. If this value contains non-alphanumeric values OTM leaves the DES field blank (Location can contain all Windows-acceptable characters, but DES can have only letters and numbers).

Any station with no DES value will cause an error during transmission of OTM data to the Meridian 1 or Succession CSE 1000 system. The Validation utility checks the DES and any other field values that can cause transmission failures. Refer to "Station data validation" on page 365.

Meridian 1 or Succession CSE 1000 station data retrieved from a system will always have a DES value.

## Sync status

The Station list includes the current Synchronization status. Values include:

- **NEW**: a station that has been created on OTM but not yet transmitted to the Meridian 1 or Succession CSE 1000 system.
- **TRN**: a station that has been synchronized with the Meridian 1 or Succession CSE 1000 system. The OTM software has determined that the version of this station in the OTM PC data base is consistent with the version of this station on the Meridian 1 or Succession CSE 1000 system.
- **CHG**, or **RPL**: a station that has been changed (or marked for replacement) on the Meridian 1 or Succession CSE 1000 system. The OTM system has determined that the station has been updated on the OTM PC data base and that the version on the Meridian 1 or Succession CSE 1000 system does not yet reflect the OTM update activity.
- **OUT**: a station that has been marked for deletion on the OTM PC data base. It will not be deleted from the OTM PC data base until the station has been OUTed (deleted) on the Meridian 1 or Succession CSE 1000 system during a Synchronization/Transmit operation. An OTM user may update a station marked **OUT**. The OTM system will ask whether the station is to be restored before allowing you to update the station.
- **CUR**: a duplicate record containing all of the original configuration of a record that is in the process of being modified. The **CUR** record is created when the user double clicks on a record whose sync status is **TRN**, **CHG**, or **RPL**. If there is no change made and the sync status is **TRN**, the **CUR** record is deleted.
- **SWP**: a station that has been marked to have its Terminal Number swapped with the Terminal Number of a different station. If the previous sync status of the two stations is not **NEW**, their sync status is changed to **SWP**.

The OTM Delete or Cut operation works slightly differently depending on the station's synchronization status. A station marked NEW can be deleted immediately from the OTM PC data base, since it has not been configured on the Meridian 1 or Succession CSE 1000 system. A station with any other status is marked OUT, since the station must be OUTed on the Meridian 1 or Succession CSE 1000 system before the station may actually be deleted from the OTM PC data base. A station marked OUT will continue to appear in the list of stations

until it has been successfully OUTed from the Meridian 1 or Succession CSE 1000 system. A station with a status of OUT on the OTM PC data base on which you apply Edit - Cut or Edit - Delete will continue to be marked OUT until it has been successfully synchronized.

## Synchronization considerations

If the Station Administration module is in Maintenance mode (set from Options - Mode in Station Administration module), you are prompted to schedule data transmission to Meridian 1 when any modifications are made to the data stored in OTM.

You can schedule synchronization when prompted, or schedule later.

## Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Report Forms (*filename*.FRM)
- Reports (*filename*.TXT)
- Communications Logs (*filename*.LOG)

> **Note:** You need only supply the *filename* when prompted to save these files—OTM automatically supplies the appropriate extension.

- Validation Data (you provide the extension)
- Designation Strips (you provide the extension)

## Parsing retrieved data

Meridian 1 or Succession CSE 1000 data retrieval is actually a two-stage task. OTM first retrieves the data to a file in the system subdirectory, then parses the file to conform with the OTM data base rules.

The connection to the Meridian 1 or Succession CSE 1000 system is only required during the retrieval stage. If you are connected to the system through a modem, OTM will disconnect the modem immediately after the retrieval and before the parse. The parsing takes place on the PC only. If you interrupt the parse, for example by turning off or rebooting the PC, it can be restarted by using Synchronization Retrieve - Parse Only.

### Multi-Tenant

If the TENA package is equipped, you must supply a tenant number (TEN).

### System Hardware

During station data retrieval, the system hardware information is updated with cards that will support the type of stations being retrieved. This might not actually match the hardware used (although it will be compatible). If an exact match is required, you must manually update the hardware data in the Station Hardware view.

## Station Administration window

When you start Station Administration, the OTM Station Administration window opens, allowing access to station data for a single Meridian 1 or Succession CSE 1000 system. Figure 170 shows the OTM Station Administration window.

**Figure 170** Station Administration window



The OTM security system allows the system administrator to make functions available on a user-by-user basis. Those menu items that are not available to you are shown dimmed. The menu bar contains the following drop-down menus:

- **F**ile
- **E**dit
- **V**iew
- **S**ynchronize
- **F**orms
- **O**ptions
- **H**elp

### File menu

Use the File menu to access the station data of a selected system.

**Reports:** Lets you design and generate reports based on existing station data. This item includes the Report Generator and two existing reports, as follows:

- **Bridges:** a list of bridges on the system
- **Multiple appearances:** a list of multiple-appearance stations
- **Excess DNs:** a list of DNs in the OTM Directory that do not have matching DNs in Station Administration.

**Desig. Strip:** Sends data for labeling buttons and keys on an instrument to an OTM viewer where you can browse and print the data.

**Print:** Sends the station list to an OTM viewer (described in ) where you can browse and print the data. Choose from the following display formats:

- **Short Format**: one-page abbreviated list of station data
- **By Feature Group**: station data by Feature Group
- **By Field Mnemonic**: station data by Meridian 1 or Succession CSE 1000 field mnemonic

**Validate:** Validates field values (full or partial, selectable in a submenu) for selected station records:

- **Partial**: checks selected fields in the station records that, if incorrect, can cause a transmission failure during synchronization
- **Full**: checks all fields in the selected station records

**Audit:** Synchronizes records in the OTM Directory and Station data bases:

- **Partial**: checks the OTM Directory data base for all changed employee records and updates the Station data base
- **Full**: attempts to bring the Station data base into full synchronization with the OTM Directory data base by cross-checking each Station record with the OTM Directory

**Rebuild Directory:** Rebuilds the OTM Directory data base from the data present in the Station data base. This option has been provided to allow you to overcome a situation in which the OTM Directory data base has become corrupt.

**Conversion utility:** Launches the conversion utility, used to update OTM data. For more information, see the Conversion Utility section.

**Close:** Closes Station Administration and returns to the OTM window. OTM automatically saves station updates as they are made. This means that you need not close an open system before quitting the application.

> ➡️ **Note:** See "OTM Directory services" on page 366 for more information on database synchronization and updating.

## Edit menu

Use the Edit menu to change data within an open system. The OTM-specific actions include:

**Add / Delete / Update / Restore:** Adds/removes/modifies/restores stations for the currently open system.

**Global Update / Select / Select All:** Allows you to modify selected fields in a group of selected stations.

**User Field Names:** Assigns names for the 10 user-defined fields for the current system.

## View menu

Use the View menu to choose the station data parameters you wish to view. The currently selected view is indicated by a check-mark against the menu selection and is displayed in the status bar of the main window.

**Station:** This option displays a list of all stations defined for this system. When you choose an Edit function, the highlighted station record is opened. If none are defined, you can only choose Edit > Add.

**Pending:** This option shows all pending records. This provides a list of all stations that are not synchronized with the Meridian 1 or Succession CSE 1000 system.

**Template:** This option accesses templates that contain station definitions that the open system may use frequently.

**Hardware:** This option displays line cards used in the system. The Reserve TN feature adds new fields in this view to reserve units on the supported card types.

**Employee Selector:** This option launches the Employees editor.

**External Parties:** This option launches the External Parties editor.

**Roles/Projects:** This option launches the Roles/Projects editor.

**Organizational Hierarchy:** This option launches the Organizational Hierarchy editor.

**Sort:** This option appears when the Station or Pending view is selected. The list can be sorted by a criterion selected from a submenu that appears when you choose this item. The criteria include:

- Name
- Directory Number
- Location
- Terminal Number
- Instrument (telephone) Type
- Sync Status
- Department

> **Note:** Sorting only affects the displayed list. It does not change the actual order of the station records within the data base.

## Synchronize menu

Use the Synchronize menu to schedule communications with the Meridian 1 or Succession CSE 1000 system. The Synchronize menu lets you set up reception or transmission of station data using the OTM communications functions. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434

**Retrieve:** Allows selection of station data for retrieval from the Meridian 1 or Succession CSE 1000 system into the station data base. You can define criteria to select stations for download from the Meridian 1 or Succession CSE 1000 system. Retrieve also allows a Parse Only option that formats retrieved data for OTM.

**Transmit:** Allows selection of station data for transmission to Meridian 1 or Succession CSE 1000 system.

**Reconcile:** Compares discrepancies between station data and the OTM data base and deletes invalid set information from the OTM data base. Information about deleted sets is recorded in a log file. See "Communications logs" on page 449.

> → **Note:** Before using Reconcile, be sure to Retrieve the latest station data first. This ensures the station data is compared to the latest OTM data base.

## Forms menu

Use the Forms menu to configure form-based station administration.

**Forms Interface:** Enable or disable form-based station administration.

**Select Form:** Select which form to be used by form-based station administration.

**Edit Custom Form:** Run the station form editor.

### Options menu

Use the Options menu to configure options which affect the operation of the Station Administration and CPND Administration modules.

**Mode:** Invoke the mode function to configure the operational mode and optional station data validations.

### Help menu

Use the Help menu to display documentation to help you understand and use the application.

**Contents:** Displays the Contents page of the on-line documentation system.

**Search Help On:** Allows you to type in key words and select a topic of interest from the list of Help topics.

**How to Use Help:** Provides basic instructions about using the on-line documentation system.

## Accessing Station data

Choose View - Station to display the list of stations defined for the system. Each line in the list contains the following information for one station. Refer to "Managing station data" on page 346 for a more complete description of these fields.

**Location:** A unique station identifier. OTM uses the value here as an index to the station.

**Type:** The instrument defined for the station.

**Sync Status:** An indication of whether Meridian 1 or Succession CSE 1000 data and the data in OTM are synchronized. The following list defines the synchronization status for station data:

• **NEW**: A station defined in OTM that has never been uploaded to the Meridian 1.

- **TRN**: The station is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **CHG**: The station has been modified in OTM but not in Meridian 1 or Succession CSE 1000 system.
- **RPL**: A station defined in OTM to replace synchronized station data.
- **OUT**: A synchronized station deleted from OTM but not yet from the Meridian 1 or Succession CSE 1000 system.
- **CUR:** The station is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **SWP:** The station has been modified in OTM but not in the Meridian 1 or Succession CSE 1000 system.

**Prime DN:** The prime directory number.

**Terminal Number:** The station terminal number, representing the address within the Meridian 1 or Succession CSE 1000 system.

**Last/First Name:** The station user's name.

**Department**: The department in which the station is used.

This represents part of the data record for a station so that you can identify that station in the listing. The rest of the station data is available as described in "Managing station data" on page 346.

## The Pending View

The Pending View shows all pending records, i.e. all Station records that have not yet been synchronized with the switch. Only CHG, RPL, NEW, OUT, and SWP records are available in this view. Pending will show both the CHG and CUR versions of a station.

## The Template view

Choose View > Template to display a list of station templates defined for the system. The list contains the same information for a template as the Station view contains for a station with one exception; The Sync Status field is not shown in Template view. The value of the Location field in the list is the actual name of the template as displayed in the template list field of the Add Station dialog.

### The Hardware view

Choose View > Hardware to display a list of line cards, for station TN assignment. If Hardware Validation is active, then the TN added to each set will be validated against the TN card type. The cards defined under the hardware view are also used for automatic TN assignment.

The Reserve TN dialog is accessed through the Hardware Configuration dialog box. Click on the Reserve Units button.

## New stations

You can add new stations to the list in the Station Administration view. Use a template that defines data for the station or stations that you are adding, or add each station individually. You must give each new station a unique Location field value.

If OTM is in Maintenance mode, you are prompted to schedule communication with Meridian 1 or Succession CSE 1000 system whenever you add new stations in OTM. You can synchronize the system data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434.

### Station template

Data that is common to many stations can be stored in a template. In a single operation, using a template, you can define multiple stations which have data in common. The only data that must be added to stations defined with a template is the Location field value, so that each station added using the template can be identified in the list and by the Station Administration module. A template can contain all or part of a station definition and stations defined using templates can be changed in the same way as stations defined individually. You can change template data in exactly the same way as station data.

## Add stations

To add new stations, choose Edit > Add from the Station Administration window Station view. The Add Station dialog opens (Figure 171).

**Figure 171**  Add Station dialog



**Note:** The Instrument field and the Template field are mutually exclusive. An instrument would be defined in the template. If an instrument is selected, there can be no selected template.

At any time, you can click Cancel to return to the Station list window without adding stations.

When the data for this dialog is complete, click OK to display one of the two dialog boxes listed below:

## Adding a single station

If you are adding a single station, the dialog box for the selected set is displayed. You can update the station data now or just give it a unique identifier in the Location field and click OK to accept the current data and update later if required. See "Managing station data" on page 346.

## Adding a phantom station

The Phantom Terminal Number (PHTN) feature permits you to define and configure TNs with no associated physical hardware. This feature, when used in conjunction with the Call Forward All Calls (CFW) and Remote Call Forward (RCFW) features, allows a call to a phantom station to be redirected to an existing telephone. For more information on phantom Terminal Numbers, see *X11 Features and Services* (553-3001-306).

To add a phantom station, a phantom loop must be defined first. Phantom stations can only be added to existing phantom loops. Use LD 17 to create a phantom loop. Retrieving station data from a system with existing phantom stations preserves the phantom loops defined for those phantom stations. Phantom loops can only contain phantom stations.

Choose View > Hardware from the Station Administration window Station view. The Hardware view appears. Choose Edit > Add. The Hardware Configuration view appears. Select the phantom card from the drop down list. Phantom cards have the prefix PHT. If you do not enter values, OTM enters the next available loop-shelf-card information not used by the selected card into the appropriate fields. Click OK to return to the Hardware Configuration view.

> **Note:** Cards must have unique loop-shelf-card combinations.

Choose View > Station to return to the Station view. Choose Edit > Add. The Add Station dialog box appears. In the Instrument field, select an analog type set. For example, the 500 set. Click on the Phantom check box. Click OK. The Station Data dialog box appears.

> **Note:** Phantom TNs can only be assigned to analog sets.

Enter the terminal number for the station in the Terminal Number field. Each station must have a unique TN. Double-clicking in Terminal Number field displays the Terminal Numbers window listing available terminal numbers associated with this loop. If no phantom cards are defined, this window is blank. Double-click on an available terminal number on the list to enter that value into the Terminal Number field in the Station Data dialog box.

## Adding multiple stations

If you are adding more than one station, the Multiple Station Add dialog is displayed (Figure 172). This dialog lets you define some aspects of each station to be added. If you used a template for station definition, much of the station data may already be defined

**Figure 172**   Multiple Station Add dialog



The dialog contains an updatable list box containing the stations. The following data fields allow you to define or update the stations in the list.

### Adding stations

When you have defined the station or stations that you wish to add, click OK in the dialog. If the Location field for one or more of the stations is not unique, an error box appears. Click OK in the error box to return to the previous dialog to make the correction.

OTM adds the accepted station or stations to the OTM station data base. If OTM is in maintenance mode you are prompted, in a Synchronization dialog, to set up communication with the Meridian 1 or Succession CSE 1000 system. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434.

Click Cancel in the Synchronization dialog to return to the Station Administration list. The new stations are added with a status of NEW. In this case, you can use the Synchronize menu at a more convenient time to set up communications.

## Deleting stations

You can select stations for deletion from the Station list view. Use one of the following methods to remove them from the OTM data base:

*   Press the Delete key
*   Choose Edit > Delete
*   Choose Edit > Cut

Each method displays a Yes/ No confirmation prompt before removing the stations. If you click Yes, OTM removes the stations from the OTM station data base.

There are special considerations to bear in mind when deleting stations that contain references to Voice Mailbox directory numbers. Refer to "Voice Mailbox" on page 415 for more information.

If the stations to be deleted have never been synchronized with the Meridian 1 or Succession CSE 1000 system (Sync status is NEW) they are removed from the list in the window. In this case you can bring the stations back by choosing Edit > Undo Delete. This undelete is only available until you perform another edit function on the station list.

If the Sync status is not NEW, deleted stations are marked for deletion from the Meridian 1 or Succession CSE 1000 system at sync time by setting the sync status to OUT. These stations will not be deleted from the list until synchronization. If you attempt to change such stations, you are prompted to bring them back before the update can be performed. If you do bring them back, the status is reset to the original sync status. Attempts to delete stations with sync status OUT are ignored.

To delete a station with sync status of CHG, select the associated CUR record and choose Edit > Restore.

## Swap

The Swap function allows you to swap the terminal numbers (TNs) of two telephones. A CUR record is created for both telephones. The sync status of the telephones is changed SWP if their previous sync status is not NEW.

You can swap only two telephones at a time. CUR records cannot be swapped. The telephones that are swapped with each other should have compatible line card types. For example, a digital telephone cannot be swapped with an analog telephone.

A group of telephones that are swapped to each other is called a swap group. For example, if Telephone A is swapped with Telephone B, and at a later time, Telephone B is swapped with Telephone C, Telephones A, B, and C form a swap group. When a telephone is selected for transmit from a swap group, you are asked to transmit the remaining telephones in the swap group.

SWP records cannot be deleted in Station Administration. The sync status of SWP records can be changed to TRN or NEW through a global update. SWP records can be restored to their original values by selecting Edit - Restore. This action will impact the transmit results of the other telephones in the swap group.

Terminal number is disabled for SWP records. When you select a form file to run a report, check boxes are added for sync status TRN, NEW, OUT, RPL, CHG, CUR, and SWP. When the check box is checked, the records with the corresponding sync status are included in the generated report. The SWP check box is checked by default.

## Adding a station template

You can use a template of station data to add multiple stations (or a single station) with common data. To create a template, choose Edit > Add in the Station Administration list view window with the View > Template option selected. This displays an Add Template dialog containing a list of instruments (telephone types) that you can use with this particular system (Figure 173).

**Figure 173**   Add Template dialog
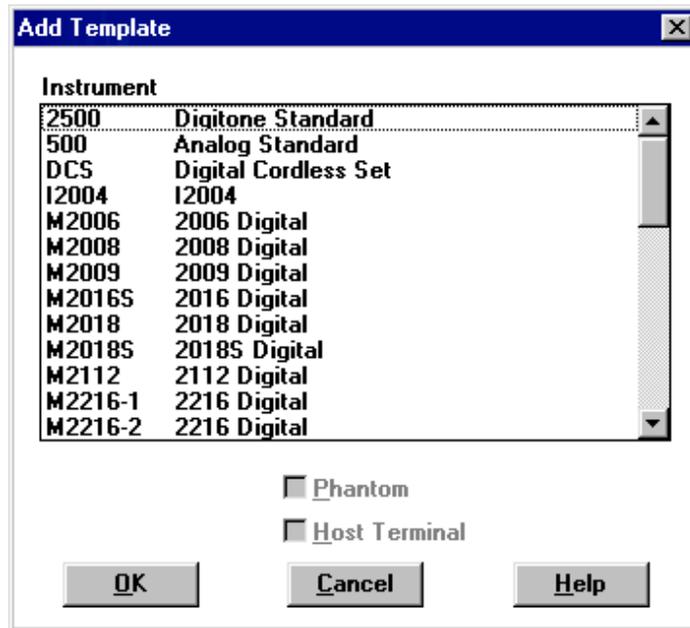


Select an instrument you wish to use for this template and click OK to display the dialog for the instrument. You can change the data in this template as if it were a regular station. See "Managing station data" on page 346.

If your Meridian 1 is configured for the Virtual Office feature available on M3900 Series Meridian Digital Telephones, select the appropriate instrument and click the Phantom check box to add a Virtual Terminal template, or click the Host Terminal check box to add a Host Terminal template.

You are still required to insert a unique identifier in the Location field before the template is accepted. The data entered is used by OTM as the template name (displayed in the Add Station dialog).

If you wish to modify an existing template, proceed as if it were a single station. Choose Edit - Update in the Station Administration window with View - Template selected.

# Managing station data

OTM displays individual station data in a dialog that graphically represents the set used at that station. If the telephone has feature keys, these are displayed and can be selected like all other fields. Some data entry fields (those that use DN or TN data, for example) can be double-clicked to display options for that field.

Data change is described for a typical set (M2616). Most other instruments contain a subset of the data for this instrument, and the update procedure for each field and function is the same as that described here.

Whenever you modify station data that has already been synchronized with the switch, the Sync Status for that station is set to **CHG**. This is an indication that OTM and Meridian 1 or Succession CSE 1000 system are not in sync.

If OTM is in maintenance mode, you are prompted to set up communication with the Meridian 1 or Succession CSE 1000 system. You can synchronize the data at this time, schedule a time for synchronization or cancel the prompt and schedule synchronization later. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434

# Updating stations

OTM displays a list of stations for the selected system in the Station Administration module when you choose View > Station. You can update the data for any station by selecting the desired station and choosing Edit > Update. This displays the dialog for the set that the station currently uses. You can update multiple stations at one time. See "Global Update" on page 420.

## Station data

The dialog box shown in Figure 174 is for an M2008 digital telephone. In addition to the normal OK, Cancel and Help buttons, the set dialog can have other function buttons such as Features and Admin. These functions are described in "Features button" on page 357 and "Administration" on page 361, respectively.

**Figure 174**   Station Data dialog box



Functions and options assignment is described in "Key assignments" on page 350. An additional Key Features Edit field is displayed for analog sets to allow you to assign key functions. This field is described in "Key Features field" on page 360.

The data fields for an instrument are a subset of the following:

**First Name / Last Name**
The First Name and Last Name fields are linked to the OTM Directory. These fields cannot be edited in the Station Data dialog window. The **Directory** button provides a link to the OTM Directory record which contains this data. See "OTM Directory services" on page 366

**Customer**
You can select one of a drop down list that contains the customers associated with the site.

**Location (required)**
The Location is a unique identifying code for this station, up to 12 characters. OTM does not let you assign a code that is already in use for this site.

Note that, if you have not defined DES (OTM data only), then OTM assigns the first six alphanumeric characters of the Location field when you synchronize OTM data with the Meridian 1 or Succession CSE 1000 system.

Note also that, on receiving data that is not defined in OTM from the Meridian 1 or Succession CSE 1000 system, the Location field is assigned the full TN value, including hyphen separators, of the station.

### Department
This field displays the department information that has been entered into the OTM Directory. This information may not be edited in the Station Data dialog window. The Directory button provides a link to the OTM Directory record which contains this data. See "OTM Directory services" on page 366

### Terminal Number
This field contains four separate numeric fields that represent the Meridian 1 system address (the terminal number contains values for Loop, Shelf, Card and Unit) that this station uses.

> ➡️ **Note:** For Meridian 1 Option 11C, and Succession CSE 1000 systems, the TN format is Card, 0, 0, Unit.

### Hunt to / External Hunt to
You can enter a DN in these fields that will receive calls if this station is busy. Note that you can use any telephone number, even one that is external to this site. However, you can double-click this field to display the DN list defined in the Customer's Number Plan for this site and choose one of those. The External Hunt is for incoming calls that are not from a DN in the Numbering Plan.

### Call Forward to / External Call Forward to
You can enter a DN in these fields that will receive calls if there is no answer at this station after a pre-determined number of rings. These fields operate in the same way as the Hunt to and External Hunt to fields (see DN Assignment)

## Add on feature key modules

In addition to these fields, a station may have feature/option keys or key lamps. Some sets can have additional keys as add-on modules. In such cases, one of the following fields is available in the dialog:

## DBA (Display-Based Add-on module)

This field is only available on the M3904 and M3905 telephones. It allows you to program key features for an add-on soft-labeled key module. Enter the number **1** which indicates the presence of the Display-Based Add-on attached to the set. An additional function button, called ADD On 1, appears when you enter 1 in the DBA field.

Click Add On 1 to display a dialog that graphically represents the keys of the Display-Based Add-on. You assign features to the add-on module the same way that you assign features to keys on the telephone.

## Key-Based Access (Add-on modules)

This field is only available for M2000 Series and M3900 Series digital telephones. It allows you to program key features for add-on key modules. You can enter a number in the range **0-2**, which indicates the number of add-on modules attached to the set. Additional function buttons (for example, Add On 1) may appear on the dialog, based on the entry in this field.

You can click these additional buttons to display a dialog that graphically represents the keys of the add on module. You assign features to the add-on modules the same way that you assign features to keys on the set.

## Key Lamp Strips

This field is only available for QSU60 digital telephones. It is a numeric field that can contain a number in the range **1-7**. The default value is **1** which represents the key lamp strip on the basic telephone. If you enter a number up to **7** in this field, the new number is validated when the cursor is moved out of the field. That number of additional key lamp strips (less the one on the telephone), labeled KLS 2-7, is displayed in the dialog box. You can select one of these buttons to display a dialog that graphically represents the keys of the add-on module. Assigning features to the add-on keys is the same as for the regular keys on the telephone.

For sets that do not have keys or key lamps, the available features assignment dialog is displayed within the set dialog itself. The assignment procedure is as described in "Key assignments" on page 350.

## Key assignments

In addition to the data fields, the set may have keys to which you can attach feature functions. When you select a key, a Key Assignments dialog containing a single-selection scrollable list of Key Features is displayed (Figure 175). The features listed are defined for this set using the Features button on the station data dialog.

**Figure 175**   Key Assignments dialog
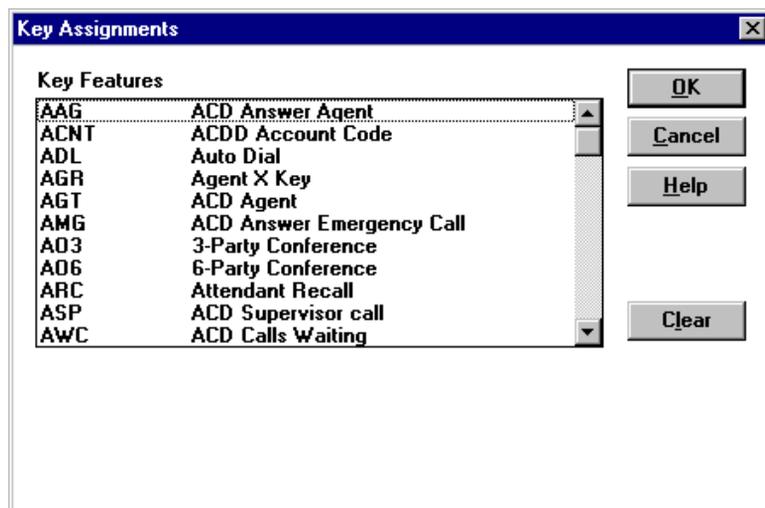


In addition to the usual OK, Cancel and Help buttons, the dialog has a Clear button that you can use to remove any feature attached to the selected key on the set (to assign a different feature, it is not necessary to first clear the current feature). You may also enter the first letter of the Key Feature of interest to move to that section in the list.

The dialog contains a single-selection Key Features list. The currently selected feature is highlighted. Select using the mouse or the up/down arrow keys.

Click Cancel at any time to return to the station data dialog without changing the current key assignment. Click OK to assign the selected feature to the key.

Some of the features require you to enter additional information. When you select one of these, text entry boxes are displayed in the dialog. You can double-click on a DN text entry box to display the list of DNs in the customer's Numbering Plan that are available to the selected feature. See "Directory Number assignment" on page 351.

## Directory Number assignment

There are three kinds of DNs:

1. A DN assigned to the station. This must be in the customer's Numbering Plan as defined for the system.

2. A DN referred to by this station (message center, for example) that must be in this customer's Numbering Plan.

3. A DN referred to by this station (Call Forward, for example) that can be the number for any station—external or within the Numbering Plan.

To enter a DN for a selected station, you can type the number into the Directory Number field or double-click within the Directory Number field to select from a list of DNs used in the Numbering Plan for the customer (Figure 176).

A manually entered number for DN categories 1 and 2 above will not be accepted if it is not contained in the Numbering Plan, unless the Numbering Plan validation has been turned off (Option > Mode).

**Figure 176** Directory Numbers dialog box
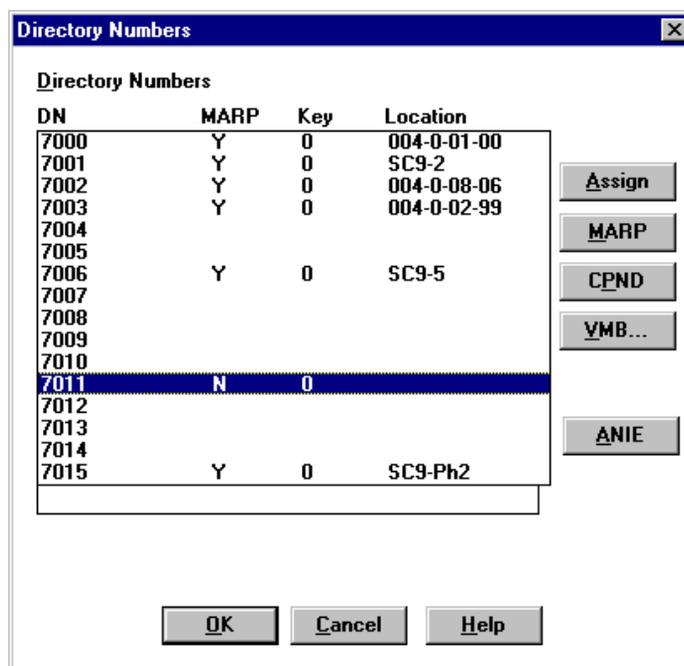


If you are assigning a DN to this station (versus referring to the DN of another station as in forwarding or hunting options) the dialog allows functions in addition to the usual Cancel, Help and OK buttons:

- **Assign**: assigns the highlighted DN to the key.
- **MARP**: If the assigned DN is being used by another station you can assign incoming calls to that DN to this station with the Multiple Appearance Redirection Prime (MARP) button. To assign incoming calls to the other station, you must update the other station and select the MARP function there. This button toggles the current MARP assignment.
- **CPND**: A Call Party Name Display (CPND) display dialog allows you to define how calls from this station are displayed to the receiving station. See "CPND data considerations" on page 377.
- **VMB**: A Voice Mailbox (VMB) display dialog allows data to be associated with a DN (which serves as a mailbox ID) rather than a TN. You can modify the VMB data from any station which has an appearance of the mailbox DN. Refer to "Voice Mailbox" on page 415.

The dialog box contains a single-selection list of DNs defined in the numbering plan for this system. Those numbers that are already assigned also have MARP and Location data listed. The currently selected DN is highlighted. If you are assigning a DN to this station, the dialog also contains a display-only box with the current DN assignment entered.

At any time, click Cancel to return to the previous window without changing the current assignment. Click OK to assign the DN and return to the previous window.

## Terminal Number assignment

The Terminal Number (TN) is the full hardware address of the port to which this station is attached. If the Terminal Number field requires an entry, you can type the number into the Terminal Number field or you can double click within the field and select from a list of available TNs. The data entry must be in the format:

```
lll s cc nn
```

Where:
lll= The number of the Meridian 1 loop.
s= The number of the system shelf.
cc= The number of the shelf card position.
nn= The number of the card circuit (unit).

> **Note:** For Meridian 1 Option 11C, and Succession CSE 1000 systems, the TN format is:
>
> ```
> cc 0 0 nn
> ```

The range of numbers available depends on the hardware configuration and software release in use at the system.

The list shows the Location for all TNs that are already assigned (Figure 177).

**Figure 177** Terminal Numbers window
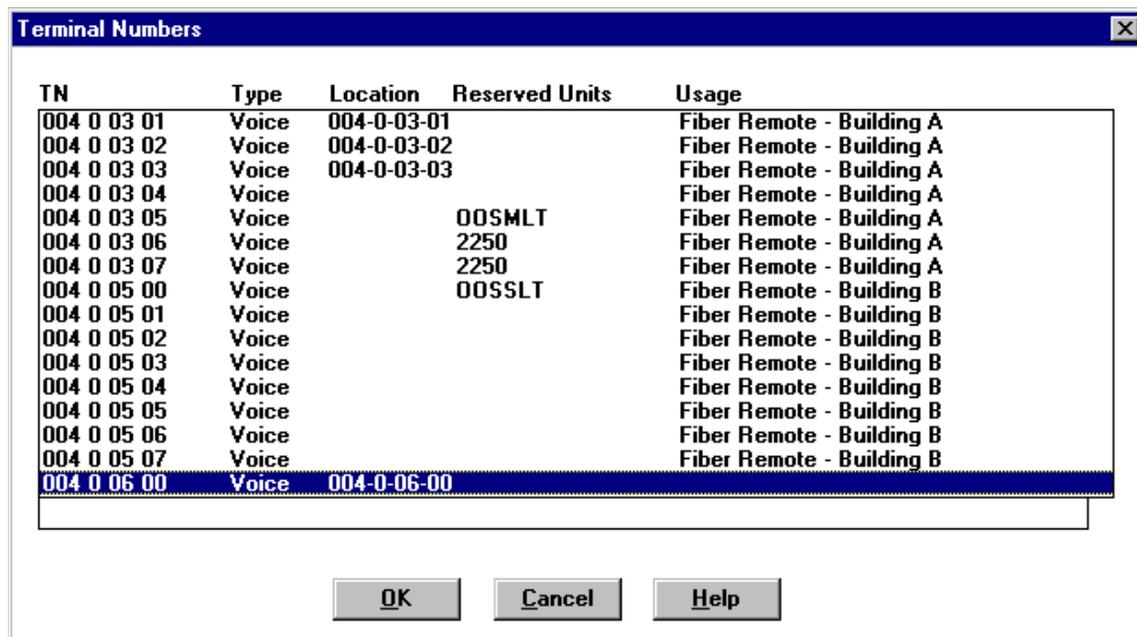


The dialog contains a single-selection list of TNs defined in the Station Hardware view that permit access to the set defined for this station. The current selection is highlighted.

At any time, click Cancel to return to the previous window (Set dialog) without changing the current assignment. Select a TN and click OK to assign the TN and return to the set dialog. The OTM system validates the TN for availability and permissibility using the Hardware assignments stored under the Station Hardware view, and assigns the TN.

> **Note:** Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. See "Reserve TN feature" on page 355

## Reserve TN feature

This feature allows users to assign TNs to support instrument types on a station line card and mark these units as reserved for a given unit type. These types, referred to as Reserve Unit Type (RUT) include:

- ATT (Attendant Console)
- 1250 (1250 Digital Attendant Console)
- 2250 (2250 Digital Attendant Console)
- R232 (RS232C Units)
- R422 (RS422 Units)
- OOSSLT (Out of Service Single Line Terminal)
- OOSMLT (Out of Service Multiple Line Terminal)
- PWR (Power for Attendant Console)
- OTHER (as defined by the user)

When a unit is reserved as one of these types, it will not be assigned during Automatic TN Assignment and will appear in the TN Selection List Box accordingly. The Automatic TN Assignment will not assign any units in the Hardware View that are marked as a RUT. RUTs are validated at the field and global levels. RUTs are marked by the user in the Hardware View and by the Station Retrieval Module. The Reserve TN feature shows existing Usage Fields at the card level in the Hardware view.

> **Note:** Reserved Units TNs are skipped during Automatic Terminal Assignment.

Access the Reserve Units dialog box through the Reserve Units button in the Hardware Configuration dialog box (Figure 178).

**Figure 178**   Hardware Configuration dialog box



The Station Retrieval Module recognizes RUTs and updates the Reserved Units fields in the Hardware View with the RUT value during an initial retrieval. Discrepancies are handled in the same way as other retrieved fields with the Meridian 1 or Succession CSE 1000 value overwriting the OTM data base value. RUTs are not displayed in the Retrieval Specify by Type field since they are not treated as Station Types.

Use the Reserve Units dialog box to assign RUTs (Figure 179).

**Figure 179**   Assigning values in the Reserved Units dialog box
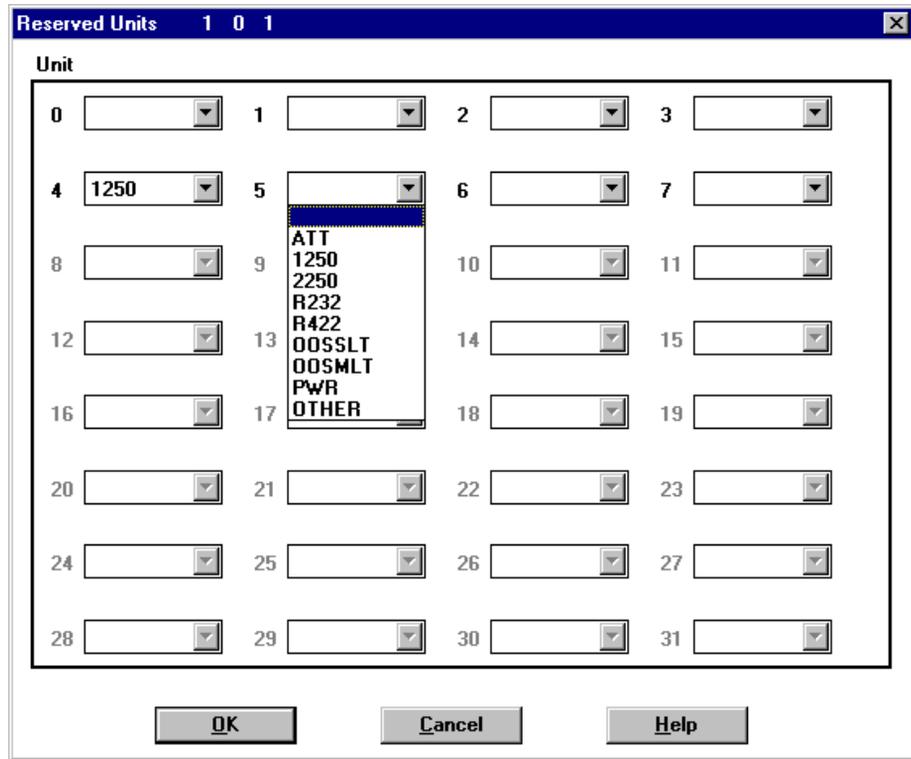


## Features button

The Features button on the station data dialog lets you examine and update station features and options defined for your system. This is the function you use to assign a value to the DES field in OTM. It allows you to set feature key assignments. The Features button displays a list box containing a single-selection list of features or feature groups you can scroll (Figure 180).

**Figure 180** Features dialog
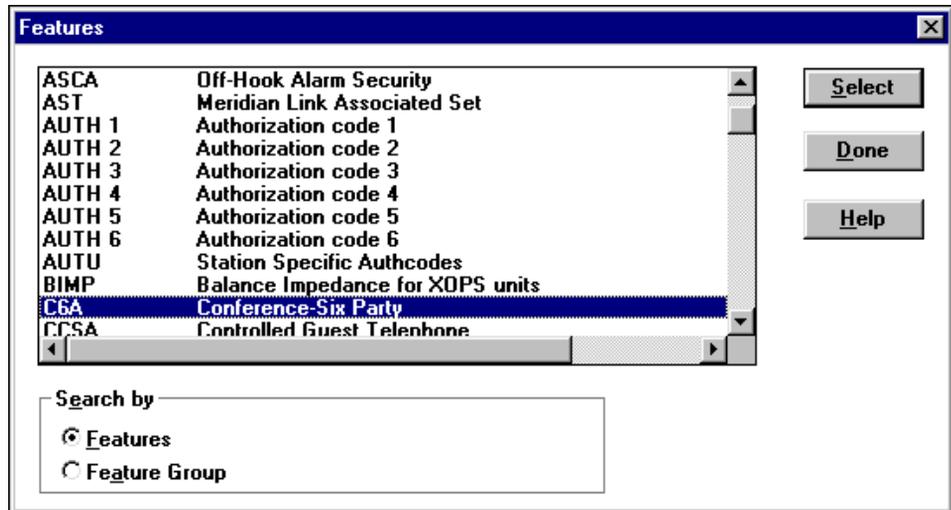


Select the appropriate radio button to sort by either Features or Feature Groups. "Features" sorts the features alphabetically by Meridian 1 or Succession CSE 1000 mnemonic. "Feature Groups" organizes the features into related categories.

The dialog contains Select, Done and Help function buttons. Help displays on-line help for this dialog. Done returns to the station data dialog and Select displays a dialog associated with the selected feature that lets you define appropriate parameters for that feature, and perhaps assign the feature to a key.

Use one of the following methods to select a feature:

- Select a single feature with a mouse click.
- Use the arrow keys to move the highlight bar to the desired feature.
- Type the first letters of the feature mnemonic (for example, SCR).
- Click and drag the highlight bar to the desired feature.

Use the Page Up and Page Down keys to browse the feature list.

When you click Select, OTM displays a dialog for the selected feature. You can enter data in the dialog. When you click OK, OTM modifies the feature based on your input, and returns to the Features list.

While the Features list is open, you can examine and modify other features. When you finish modifying features, click Done to return to the Station Data dialog. The keys that you assigned are labeled appropriately.

When you are finished defining or examining features, choose Done to return to the station data dialog. If you have assigned keys, the appropriate keys are labeled in the station data dialog.

### Feature Group category

When you select Search by Feature Group and choose Select in the Features dialog, a dialog that defines the selected feature appears. The dialog shown in Figure 181 is for the Call Pickup feature. The other dialogs are similar in appearance.

**Figure 181**    Feature dialog (example)



The dialog contains fields (usually text boxes associated with drop-down selection lists) that define the functionality of the feature. If the feature can be assigned to a key, the dialog also contains a Key Features list of functions that can be assigned to a key for this feature.

*Forced targets*

Some entries in the Feature dialog box will force a change in the class of service (CLS) of the selected station. For example, filling in the "Flexible Call Forward No Answer DN (FDN)" field of call redirection forces "Call Forward No Answer (FNA) to "Allowed". This target enforcement occurs only as the feature dialog is exited.

*Key Features field*

The Key Features field is a single-selection list of features associated with this feature group. You can assign the function selected in this list to a key for the selected station.

You assign features to a key from the Key Assignments dialog. Double click the desired function in the Key Features list of the Features dialog to open the Key Features Edit dialog box for the selected function.

> **→** **Note:** You can only make key assignments to sets with feature keys. Key assignments cannot be made to Type 500 or 2500 stations.

The dialog box shows a single-selection list of key numbers. Each key in the list shows any already-assigned feature (and associated DN if applicable). The list is dimmed except for any assignment made during this session.

**Figure 182**   Key Features Edit dialog box
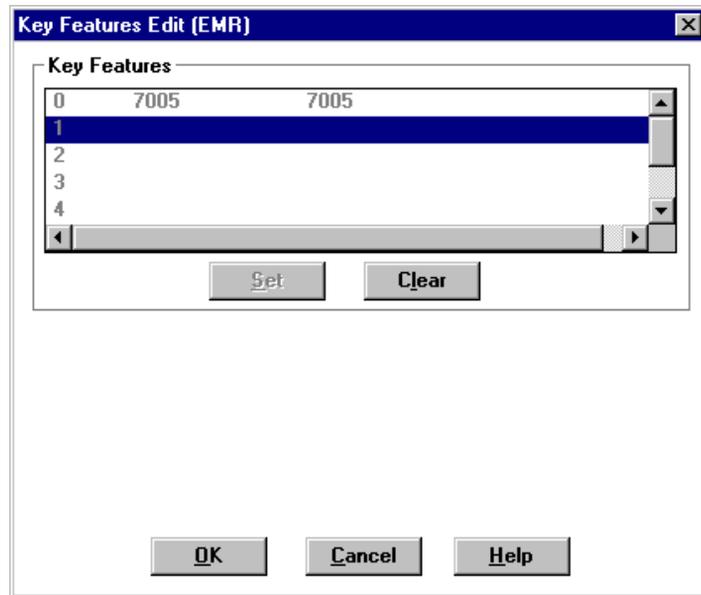


The Key Features section of the dialog box contains two function keys, Set and Clear. If the selected key is already assigned, the Set function is dimmed. Use the Clear function to remove a key assignment. Use the Set function to assign the current feature to an unassigned key.

At any time, click Cancel to return to the Features definition dialog without changing the current key assignments. Click OK to assign key function and return to the Features Definition dialog.

## Administration

Choose Admin in the station data dialog to open the Administration dialog box (Figure 183). The Administration dialog allows you to assign values to fields that OTM uses in classifying and administering station data. These fields are not part of the Meridian 1 or Succession CSE 1000 system data block. The user fields and their labels are assigned using Edit > User Field Names. These headings allow you to define values for your own situation. This option contains text boxes so that you can assign specific values to these fields for this station.

**Figure 183** Administration dialog box



The data entry fields in this dialog include:

**Category:** A drop-down list of line connection types for this station

**Color:** A drop-down list of colors available for this instrument.

**Pwr Fail TN:** A text box for the TN used if the system power fails.

**LDN Index:** Radio buttons to define which of three indexes contains the DN for this station. A DN index is set up at the system level when the Numbering Plan is defined. The index is used while viewing and printing designation strips for this instrument.

**Admin Fields:** The Admin fields are used by the Telecom Billing System (TBS) data base for billing purposes and other types of cost allocation. Refer to *Using Optivity Telephony Manager Telemanagement Applications* (553-3001-331) for information on the TBS application.

# Designation Strips

A telephone can have many features and services available by function buttons (keys) and indicators. A Designation Strip is a printout of labels that can be attached to the telephone to indicate the function of the various buttons and indicators on the set (and also the DN of the station using the set). You can create files that let you examine and print Designation Strips created from the data defining the stations using File > Desig. Strip.

A Designation Strip will typically contain the directory number for a single line set. In addition, sets with key caps that designate a DN (for multi-line sets) or reference other DNs also appear in the Strip.

## Designating Directory Numbers

A Meridian 1 or Succession CSE 1000 system can have up to three listed directory numbers (LDN). The system Numbering Plan defines whether ranges of directory numbers (DN) are set for direct inward dialed (DID) or not. Typically, a station DN, as defined for the Designation Strip, is a regular 10 digit telephone number with an extension:

**`(aaa) xxx-aaaa Ext bbbb`**

Where:

| | |
|---|---|
| aaa | represents the area code |
| xxx | represents the exchange |
| aaaa | represents the number |
| bbbb | represents the extension |

The Designation Strip utility examines the System Configuration Customer data to determine the LDN used by the station. The utility determines whether the station DN is in a DID range defined in the system Numbering Plan. The following are the two possible results:

**Non-DID number:** The Strip prints the LDN and uses the station DN for the extension.

**DID Number:** The Strip gets the area code (aaa) from the LDN, the exchange (xxx) from the DID number, the number (aaaa) from the station DN.

## Display of Designation Strips

Choose File > Desig. Strips from the Station list window to open the Strip Selection dialog box (Figure 184).

**Figure 184**   Strip Selection dialog box
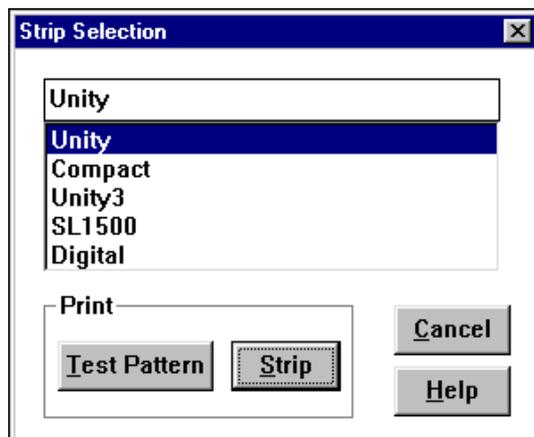


The dialog box contains a single-selection scrollable list of Designation Strip types created by OTM. The current selection is highlighted. Cancel returns to the Station list window. Help displays on-line help for the dialog box. Test Pattern sends a single page dummy strip to the Viewer. Use this to print on the appropriate form and ensure that the form is aligned correctly in the printer. Strip sends Strips for stations selected in the Station Configuration view to the OTM Viewer. From the Viewer window, print the strip by selecting File > Print from the menu bar.

Designation Strips are printed on special forms. The following separate form layouts are used by OTM:

- Unity       for Unity 1 and Unity 2 sets
- Unity 3     for Unity 3 sets
- Compact     for older SL-1 type sets
- SL-1/500    for normal SL-1 type sets
- Digital     for M2000 series digital sets (not M3000 series)

→ **Note:** All other sets would use the SL-1/500 Strip layout. Stations with ACD keys will have both the ACD DN and the Position ID printed. It would be up to the user to attach the desired label to the appropriate key.

## Station data validation

The station data base contains one record per station. Some of the field values in a record depend on the system properties, the instrument used, and features and options enabled. In addition, the OTM application contains "rules" that define possible values, sizes, and ranges for the fields.

The Station Administration module includes a Validation utility that checks that the values assigned to certain fields are compatible with the configuration and the OTM data rules.

The Validation function checks the currently selected station records in the Station list view before uploading to the Meridian 1 or Succession CSE 1000 system. There are two options—partial and full validation. Full validation checks every field and might require considerable time.

→ **Note:** You can validate the data for each station individually using the Validate function key on the set dialog. This button examines the entries for the current open station only. Any errors are noted. Perform a Station Validation to capture any data entry issues that may result in a transmission error when synchronizing with the Meridian 1 or Succession CSE 1000 system.

### Validating the data

Select the stations for validation in the Station list view and choose File - Validate to display a cascading submenu. Choose Partial (checks the values defined previously) or Full (checks all field values) to start the Validation check.

While OTM performs the checks, a status box indicates progress in single record increments. At any time, click Cancel in the status box to halt the task.

➡️ **Note:** Clicking Cancel discards the validations already completed.

When the task is complete, the OTM Viewer displays the validation data. You can save this to a text file (in a user-defined file name and location), print it, or simply browse and discard it (see "Generating reports" on page 459 for a description of the Viewer).

When the task is complete, you should send all the new or modified station and CPND information to the Meridian 1 or Succession CSE 1000 system. You may select all of the NEW or CHG stations, for example. You should apply the Validation process from the File menu to the selected stations to ensure that the entered data is consistent across all stations. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434

## OTM Directory services

The OTM Directory is a data base for storing employee and organizational data. Portions of this data are shared with the Station Administration and Telecom Billing System applications.

This section presents information on the interaction between the OTM Directory and the Station database. For additional information on the OTM Directory, see "Directory Services" on page 105.

The OTM Directory contains the following employee attributes:

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Department
- Manager
- E-mail address
- Mailing address

- List of telephone extensions
- LDAP Unique Identifier (UID).

  LDAP UID is used to link an OTM Directory entry to a Corporate LDAP Directory entry. The linkage is done using LDAP synchronization utility or import. Refer to "LDAP Synchronization" on page 206 for further details.

- Additional information on each telephone extension

The Station data base stores the following employee attributes for telephones:

- Employee first and last name
- Department

In the Station data base, a telephone or Directory Number (DN) may be linked to an employee in the OTM Directory. When a change is made to the name in the OTM Directory the Station data is updated using the Station/OTM Directory synchronization mechanism.

The Meridian 1 or Succession CSE 1000 system stores employee first and last names for use with Call Party Name Display (CPND). When an employee name which is linked to a DN is changed, the Station data is updated and flagged as "changed". This information is updated in the Meridian 1 or Succession CSE 1000 system during the next synchronization.

In Station, the linked employee names and departments are read-only. A link is provided to the OTM Employee Editor. In the Employee Editor you can view and edit the employee data in the OTM Directory.

### Architecture

There is one OTM Directory data base and one Station data base per Meridian 1 or Succession CSE 1000 system. The OTM Server supports multiple Meridian 1 and Succession CSE 1000 systems.

The Lightweight Directory Access Protocol (LDAP) synchronization process runs in the background of the OTM server at a scheduled time. It synchronizes employee data between the OTM Directory and the optional LDAP server. The updates may occur in either direction depending on the mapping defined by the administrator. See Figure 185.

**Figure 185** OTM Directory Service architecture
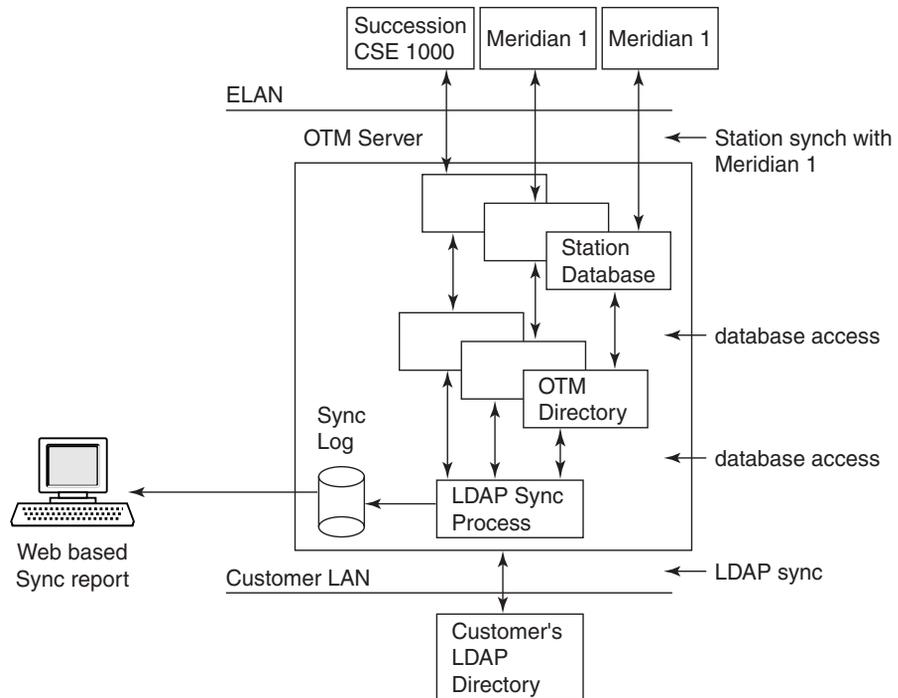


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For more information on LDAP synchronization see "LDAP Synchronization" on page 206.

## Station Administration links to the OTM Directory

Prior to the introduction of the OTM Directory Service, each telephone could be assigned a first name, last name, and department in Station Administration. When defining the DN key on the telephone, the CPDN name could be linked to the display name of the employee associated with the telephone.

In OTM, the employee name and department are now linked to the OTM Directory. Links are provided from Station Administration to the Employee Editor within the OTM Directory.

**Figure 186**   Station property page



Figure 186 shows the layout of a station property page. The First Name, Last Name, and Department fields are read-only when the station is linked to an employee in the OTM Directory. Clicking the Directory button brings up a list of employees for the current system with this employee selected. You may open the Employee Editor to change the employee data. Changes in the OTM Directory are updated in the Station data base immediately.

Clicking the Clear button empties the First Name and Last Name fields and removes the link to the OTM Directory. These fields cannot be edited; they can only be linked to the OTM Directory.

When a change is made to the First Name, Last Name, or Department fields in the OTM Directory, the Station data base is updated as follows:

- If the OTM Windows Navigator is running, the Station data base is updated automatically in the background.
- If the OTM Windows Navigator is not running, the Station data base is updated when you open the Station property page for the affected station.

> **Note:** Only the First Name and Last Name in the OTM Directory are synchronized with the Meridian 1 or Succession CSE 1000 system. The name and department information is used by the OTM Corporate Directory application. To ensure that the Directory and Station data bases are synchronized, select Partial Audit from the File menu.

The CPND property page, shown in Figure 187, contains a Link to Directory check box. Check this box to place the First and Last name information from the OTM Directory into the CPND Name for this DN. Now you cannot edit the names fields. To enter a different CPND display name for the Directory Number, uncheck the link and enter the new name.

**Figure 187**   Call Party Name Display property page

## OTM Directory Integration

Directory Services gives a common point of entry for common directory data and synchronization with Corporate LDAP servers. The OTM Directory database is designed to contain end-user data. Common data is shared among different OTM applications and the administrator can input data using the different editors.

Typical attributes of an entity include First Name, Last Name, Job Title and e-mail address. Other attributes to be assigned using the editors are the place of the entity within the Organizational Hierarchy, and Roles/Projects or External Parties assigned to the entity. A directory entity can also be assigned such assets as Extension (telephone number, and account code). Note that only 'Employee' or 'Roles and Projects' attributes can be assigned to an extension or telephone set.

With the integration of Station Administration and OTM Directory, common data is now shared and synchronized. Some of the attributes which were in Station Administration such as Last Name and First Name have effectively moved to OTM Directory. Assets such as Terminal Number and Station Location have been added to OTM Directory. The references to the Extension Number, Terminal Number and Display Name in the Directory Entity record are sourced from Station Administration because the Station database contains the true representation of these values.

OTM Directory can be launched from the Set display in Station Administration. This enables you to assign the set to a Directory Entity (i.e., employees and Roles/Project). Synchronization between the Station and Directory database enables the two databases to update each other with any changes. The Station Administration Display Name database is kept in sync with changes in the corresponding Corporate LDAP server. OTM Directory also synchronizes directly with the LDAP Server.

## Launching the Directory Selector and Editors

The OTM Directory Selector in Station Administration is launched using the Directory button on the Station property dialog (as shown in Figure 186 on page 369)

The Directory button accesses the OTM Directory of entities, and allows you to assign an entity to this set. If the set is already assigned, the Directory is initialized to that particular Entity in the list.

The Directory button opens the Employee Selector window. Here it is possible to edit the Entity attributes, add a new Directory Entity or delete an existing Entity. If a deleted Entity had been assigned to a Station, the Last Name, First Name and Department fields are set to blank when viewed in Station Administration.

The Employees, Organizational Hierarchy, External Parties and Roles/Projects Editors are launched from both Station Administration and CPND through the View menu.

## Common Fields between Station Administration and OTM Directory

Station Administration interacts with the following fields in OTM Directory:

- Name attributes: Last Name, First Name for employees, and Name attribute for Roles and Projects.
- Organization Path, which interacts with the Department attribute in Station
- Extension Number
- Terminal Number
- Display Name

When a set or a role/project is assigned to an employee, the Name and Department fields are copied from OTM Directory to Station Administration. Simultaneously, the Extension Number and Terminal Number of the set are copied from Station to OTM Directory. The Display Name field in OTM Directory is given the name of the first CDNP DN on the set.

The CPND set interface features a 'Link to Directory' check box. When checked, this ensures that the CPND name for this DN is the same as the Display Name of the Directory Entity owning that set. To modify the CPND, you must first uncheck the box.

If no display name exists for the Directory Entity, the check box is grayed out.

*Department Field*

The Department field in Station Administration derives from the last node in the ORG patch in OTM Directory. This may not correspond exactly to the OTM Directory Department setting. For example, if Department is configured as the second-last node in the Directory ORG path, Station Administration will assign whatever is the last node in the ORG path as Department, and so the two fields will not correspond.

For additional information on OTM Directory Services, refer to "Directory Services" on page 105.

## Excess DN report

An employee listing in the Directory lists all the extensions associated with the employee. Normally, each of these extensions would match with a DN in Station Administration. However, when a set (and with it the DN) is deleted from Station Administration, the corresponding entry in the Directory is not removed. The old extensions remain in the Directory to provide information to your billing department. Thus there is a possibility that some of the extensions in the Directory do not match with any DNs in Station Administration. These extensions are termed as 'Excess DNs'.

Station Administration has a facility to print off a report which lists these excess DNs against their owner employee.

This report can be run by selecting File > Reports > Excess DNs in the Station Administration window (Figure 188).

**Figure 188**   Excess DNs Menu



## Station and Directory Synchronization

There are synchronization methods used by Station Administration to stay in sync with OTM Directory:

- Polling
- Messaging

### Polling

There are two polling methods available in the File, Audit menu option in the main Station window: Partial and Full.

Partial Audit will poll the Directory for all the changed Employee records and update the Station Database. Thus, a Partial Sync deals with all Directory changes.

A Full audit will poll the Directory for all changed Employee records, update the Station database, and also bring the Station database into complete sync with OTM Directory.

If there are any discrepancies in the Station database, for example a failure to update the database by OMMessageSync resulting in Directory changes not being flagged, a Full Audit will resolve them. Full Audit cross-checks every Station record against Directory entries, and may be time-consuming.

Polling does not deal with changes relating to the deletion of Employees. This function is handled by OMMessageSync.

> **Note:** Synchronization also takes place whenever a set associated with an Employee or with Roles/Projects is opened for editing purposes. Once the editing begins, all fields are automatically synchronized.

## Messaging

When a change occurs in OTM Directory, Directory automatically sends a Windows message to OMMessageSync, a 32-bit application which is launched immediately once you begin OTM Navigator. OMMessageSync then processes this message and updates the Station database.

OMMessageSync continues to run in the background, so that the Station and CPND views are updated constantly with Directory changes by OMMessageSync.

Directory changes are synchronized with the Station database even if Station Administration is not running, as OMMessageSync operating concurrently with OTM Navigator.

Changes made using the Station Administration interface reflect directly in the OTM Directory. This means that once the Station modification is confirmed, the OTM Directory is immediately updated.

### Retrieval of Station Data

When synchronizing databases, the Directory database must be updated as a separate process. This happens immediately after the name parsing process.

In order for a Station set to be added to the OTM directory, it must have at least one CPND Display Name (See "CPND Overview").

In Station Administration, the Display Name is the first CPDN assigned to that set. If no CPND has been assigned, Station Administration will truncate the location code to form a CPND for the OTM Directory.

Station Administration first forms a Display Name for each set, and then searches the OTM database for that name. If an equivalent Name is found in the OTM Directory, then the set is added to that Directory Entity. If not, a new Directory Entity is created.

The Display Names associated with the various keys on the set are added to the list of extensions of the Directory Entity.

### Rebuilding the Directory

The OTM Directory can be re-built from the data present in the Station Administration database. The File, Rebuild Directory option has been provided to overcome the situation where the Directory database has, for whatever reason, become corrupt. The process involves a 'walk-through' of every Station record and may be time-consuming for large Station databases.

# Call Party Name Display

## CPND Overview

Call Party Name Display (CPND) displays the name of the calling party of an incoming call to the called station user. The CPND data is associated with a DN, and not with any particular station. If CPND data is assigned to a DN, it may be associated with multiple stations.

The CPND Administration module is separate from the Station Administration module. CPND Administration lets you create, maintain, change, and report on single and multi-line CPND information. CPND Administration data defines the setup for each customer's CPND configuration and CPND Name data defines the display parameters for DNs used by a particular customer. Station configuration data and CPND data are separate within the Meridian 1 or Succession CSE 1000 system and are treated as separate files within OTM.

CPND data for a station is accessible through the Station Administration module. Check the check box to have the CPND Name linked to the Display Name in the OTM Directory. The CPND button in the DN list of the Station module allows you to maintain CPND information directly from the DN list. This is particularly convenient if several DNs are to be linked back to the name for this station.

CPND is provided as a separate module to allow you to directly enter CPND data for DNs, Dial Intercom Groups, or DNIS IDC. The display of OTM CPND records shows the synchronization status and can be used to selectively synchronize this data with the Meridian 1 or Succession CSE 1000 system.

## CPND data considerations

You should be aware of the following considerations when using the CPND Administration function of Station Administration.

### CPND Names vs. Station Names

The name defined for CPND need not necessarily be the same as that defined for a station end user on the face of the station graphic. The Station Configuration Name is only maintained in OTM and is not stored in the Meridian 1 or Succession CSE 1000 system. The name stored by OTM is the CPND associated with a particular DN.

In most cases, the name on the station graphic is also the name associated with a DN of the station. OTM can automatically link the name on the graphic with one or more of the DNs on the station. To link the name on the graphic with a DN, fill in the location code of the set in the "get name from location" field on the Name dialog.

The Station Retrieve module automatically parses and updates the Meridian 1 or Succession CSE 1000 system's CPND Name information. The module automatically sets the value for the "get name from location" field in the CPND Name dialog box to match changes in the Referenced Location values. Changes to the name on the station will not affect the station's Sync Status but will update any CPND name entry to RPL.

If the name data is linked in this manner, the first and last names in the name dialog will be filled in and grayed. The data can only be changed from the station graphic. In order to remove the linkage, delete the location code from the "get name from location" field in the Name dialog.

The CPND Name information is accessed in either the Station module (from a CPND function button in the DN list dialog) or the CPND module. All CPND data is synchronized with the Meridian 1 or Succession CSE 1000 system using LD 95.

### CPND synchronization

CPND and Station synchronization are separate functions. They are only connected if CPND data is defined from the Station DN list, or if the CPND name is taken from the Name field of the Station Administration module.

If OTM is in Maintenance mode, the system automatically attempts to synchronize the new CPND information when the station is transmitted. In installation mode, you must synchronize CPND data separately from within the CPND module.

## The CPND module

The OTM CPND Administration module allows access to the CPND data for a single Meridian 1 or Succession CSE 1000 system. When you open the CPND module, a list of name data contained within OTM is displayed. If the data has not yet been retrieved from the Meridian 1 or Succession CSE 1000 system, or added to the OTM data base, the window contains no data.

Figure 189 shows the OTM CPND Administration window as first displayed.

**Figure 189**  CPND Administration window



## Accessing CPND data

The OTM CPND Administration window allows you to configure CPND blocks. After CPND blocks are configured, you can configure Name data for DNs.

From the View menu, the following list views for CPND data are available:

- Customer Configuration list (CPND Administration).
- Name display list (CPND Name)

The Customer Configuration list contains only a few items (just one in many cases). This view lists the CPND blocks configured on this system. The Name display list might have many items, probably more than will fit in the current window. This is the scrollable list of names whose display parameters are defined for CPND.

## CPND Administration view

With View > CPND selected, the CPND Administration window displays the list of CPND blocks configured for the system. The following information is displayed for each customer:

- Customer: The customer number as defined in the system configuration.
- Sync Status: The synchronization status of the station's data between the Meridian 1 or Succession CSE 1000 system and OTM.

The data in the window is part of the CPND Administration data stored in OTM. The complete configuration data for this system is available as described in the CPND Data Change section of this document.

## CPND Name view

With View > CPND Name selected, the CPND Administration window shows a list of names defined in the system. The following headings define the data for each station displayed:

- Customer: The customer number that uses this DN.
- Sync Status: The synchronization status of the station's data between the Meridian 1 or Succession CSE 1000 system and OTM.
- Number: The DN using the CPND data.
- Name: The defined CPND name.
- Location: The optional unique station Location Code for the CPND name source.

Sync Status: An indication of whether Meridian 1 or Succession CSE 1000 system data and the data in OTM are synchronized. The following list defines the status for CPND data:

- **NEW**: CPND data defined in OTM that has never been uploaded to the Meridian 1 or Succession CSE 1000 system.
- **TRN**: The CPND data is synchronized with Meridian 1 or Succession CSE 1000 system.
- **CHG**: Data has been changed in OTM but the change has not been sent to the Meridian 1 or Succession CSE 1000 system.

- **RPL**: Data defined in OTM to replace synchronized name data.
- **OUT**: Synchronized CPND data deleted from OTM but not yet removed from the Meridian 1 or Succession CSE 1000 system.
- **CUR:** The CPND data is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **SWP:** Data defined in OTM to replace synchronized name data

The data in the window is part of the name display data stored in OTM. The complete name data is available as described in CPND Data Change.

CPND records can be sorted and displayed a number of ways. In the CPND Administration window, select View > Sort. Records can be sorted by:

- Directory Name
- Last Name
- First Name
- Sync Status

> **Note:** When upgrading from a previous release of OTM, any CPND name that is linked by location to a station will not sort by first name and last name since names linked to stations in this way are not stored in the CPND data base. Perform a station retrieval to resolve this discrepancy.

## Recommended usage

You cannot build CPND Name data until the CPND data block is defined. First you must configure, or retrieve from the Meridian 1 or Succession CSE 1000 system, the CPND data block for the selected customer.

When the customer's CPND data block is defined, you can create, or retrieve from the Meridian 1 or Succession CSE 1000 system, the CPND Name display information.

## CPND data change

You can change the data associated with the selected CPND view. The selected item in the list view is highlighted. Select an item using a mouse click or use the up/down arrow keys to highlight the desired item. You can also double-click the desired item.

Choose Edit > Delete to remove the selected CPND list item. Choose Edit > Update or Edit > Add to display a dialog that allows you to update the data fields for the selected view.

## Updating the Customer Configuration data

With View > CPND selected, you can change the selected customer's CPND data. The selected CPND block is highlighted in the customer list window.

Choose Edit > Update to display the Call Party Name Display dialog (Figure 190).

**Figure 190**   Call Party Name Display dialog box

### Updating the Name display data

Choose Edit - Update in the CPND Name view window (or double-click the item in the list) to display the CPND Name dialog for the selected station name (Figure 191).

**Figure 191**   CPND Name dialog box



The Link To Directory check box indicates that the CPND for this name is the Display Name of the Directory Entity which owns the set to which this DN is assigned. To modify this CPDN, you must uncheck the Link to Directory box.

When the Display Name associated with a CPND is removed from a set, the link to Directory is broken and the above box is unchecked.

# List Manager

This section contains information about how to use List Manager. The List Manager module allows you to work with the following list types:

- Speed Call and System Speed Call—allows a user to place a call to a telephone number by dialing a short code. These codes are managed as entries in a Speed Call list.
- Group Call—allows a user to place a call to a list of DNs at the same time by pressing the Group Call key.
- Group Hunt—allows the system to route an unanswered call to the next idle DN in a prearranged hunt chain (or list), based on the Group Hunting Pilot DN linked with the station's Prime DN.

> → **Note:** The Group Hunt feature is not applicable to the North American market.

## Summary of List Manager

List Manager allows you to perform the following functions:

- Create and modify lists
- Create multiple lists with one operation
- Copy and paste lists from one system to another
- Work with list templates
- Set default properties for all lists of a given type
- Assign a station to a list (In the Stations module you can assign a list to a station)
- Assign a Pilot DN to a list
- Print reports on list usage

### Open List Manager

Figure 192 shows where to access List Manager from within the System Window.

**Figure 192**   OTM System Window
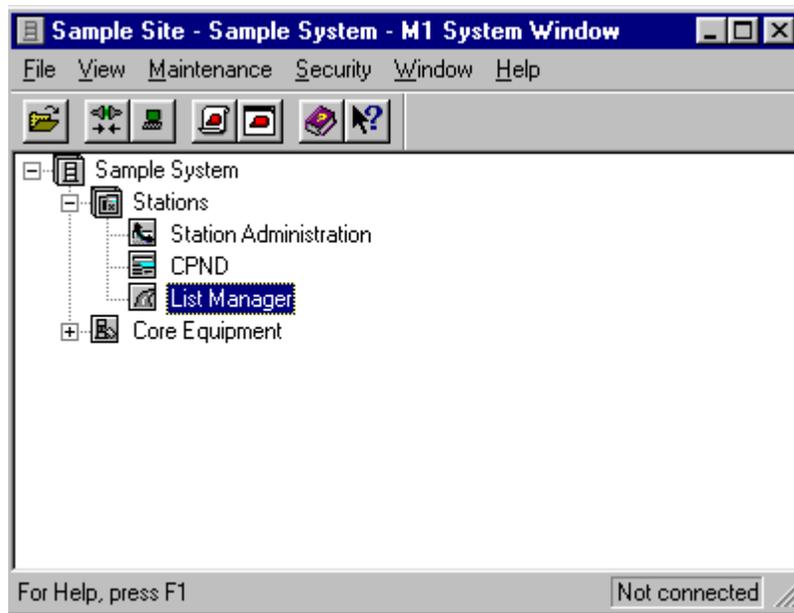


To open List Manager for a system:

**1**   From the OTM Navigator, open the system window for the selected system.

**2**   In the System window tree control, open Stations.

**3**   Double-click the List Manager icon.

The List Manager window opens.

## Download list data from the Meridian 1 or Succession CSE 1000 system

If list data is present on the system, download the list data to OTM the first time you open List Manager. You can synchronize each list type separately or synchronize all list types at once.

To download list data from the Meridian 1 or Succession CSE 1000 system:

**1**   Select a list type in the List Type view or select the item called "List Manager" to download data for all list types.

**2** Choose Synchronize > Retrieve > Now.

> ➡ **Note:** Your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

The List Manager Sync window opens (Figure 193).

**Figure 193** List Manager Sync window
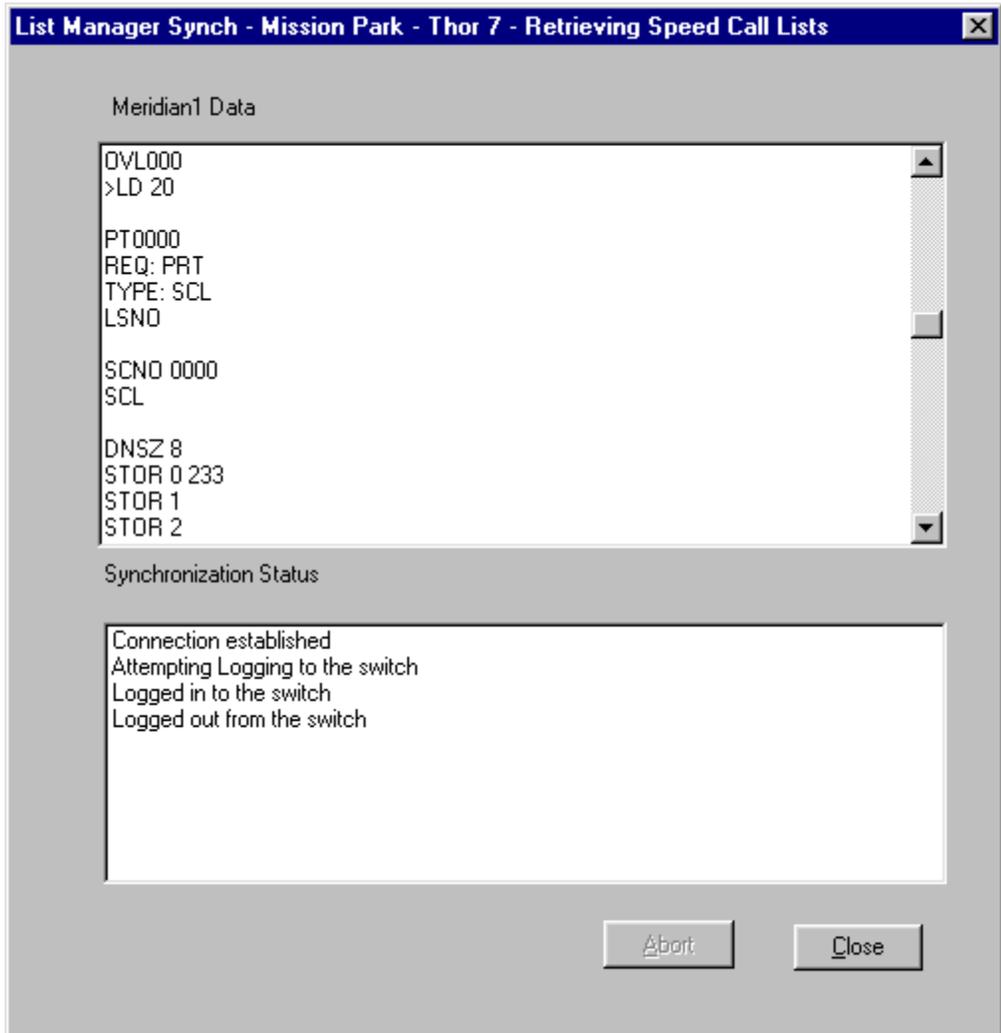
List Manager automatically logs in to an idle TTY port and downloads list data to the OTM PC.

**3** Wait until the Synchronization Status section displays the following message:

Logged out from the switch

**4** Click Close.

## Synchronization considerations

You can transmit data to program a Meridian 1 or Succession CSE 1000 system with relevant list data defined in OTM's List Manager application. List Manager can also retrieve list data from a Meridian 1 or Succession CSE 1000 system, where it can be viewed and modified.

If you have a Meridian 1 or Succession CSE 1000 system with list data already programmed, you should first download the data to OTM. See "Download list data from the Meridian 1 or Succession CSE 1000 system" on page 385. Then you can modify the data and upload the changes to the Meridian 1 or Succession CSE 1000 system.

Use the Synchronize menu to schedule communications with the system. Synchronization is a task that ensures the list data in OTM matches the data on the Meridian 1 or Succession CSE 1000 system. Synchronization can be achieved in one of two ways, as follows:

• Retrieve data from the Meridian 1 or Succession CSE 1000 system to OTM (download)

• Transmit data from OTM to the Meridian 1 or Succession CSE 1000 system (upload).

→ **Note:** Generally, you should transmit list data before transmitting station data. This ensures that the list is present on the system before Station Administration assigns feature key access to the list.

## Synchronization status

When OTM performs a data retrieval, the synchronization status of each list determines whether the data is updated. The following status indicators define how the list is affected during a synchronization:

- **NEW**: Data has been defined, but not uploaded to the Meridian 1 or Succession CSE 1000 system.
- **TRN** (transmit): Data is synchronized with the Meridian 1 or Succession CSE 1000 system.
- **OUT**: Data is removed from OTM and will be deleted from the Meridian 1 or Succession CSE 1000 system during the next synchronization.
- **CHG** (change): Data has been changed, but the changes have not been uploaded to the Meridian 1 or Succession CSE 1000 system.
- **RPL** (replace): Data in the Meridian 1 or Succession CSE 1000 system is replaced with new data during the next synchronization.

List Manager automatically sets the synchronization status of each list. For example, if you modify parameters of an existing list, the synchronization status is set to CHG (change).

## Change synchronization status

You can change the synchronization status of each list in List Manager. For example, if you change parameters for a list, but do not want the changes to take affect on the system right away, you can change the synchronization status of the list to TRN.

To change the synchronization status of a list in List Manager:

1  Select a list.

2  Choose Edit > Change Status to and choose a new status from the available choices.

## Station synchronization vs. List synchronization

List Manager synchronization is a separate task from Station Administration synchronization. After you synchronize list data, you should synchronize station data.

Transmit list data to the switch before transmitting station data. Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

## Synchronize List Manager with the system

You must periodically synchronize List Manager data with data on the Meridian 1 or Succession CSE 1000 system.

### *Upload*

To upload data from OTM List Manager to the Meridian 1 or Succession CSE 1000 system:

1  In the List Type view, select the list type that you want to synchronize or select "List Manager" to synchronize all list types.

2  Choose Synchronize > Transmit > Now. The List Manager Sync window opens (Figure 193).

> →  **Note:** Your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

3  When the Synchronization status area displays "Logged out from the switch," click Close.

   The selected list type is synchronized with the Meridian 1 or Succession CSE 1000 system.

### *Download*

To download data from the Meridian 1 or Succession CSE 1000 system to OTM List Manager:

1  Select the list type that you want to synchronize or select "List Manager" to synchronize all list types.

**2** Choose Synchronize > Retrieve > Now. The List Manager Sync window opens (Figure 193).

> → **Note:** Your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

**3** When the Synchronization Status area displays "Logged out from the switch," click Close.

The selected list type is synchronized with the Meridian 1 or Succession CSE 1000 system.

## List Manager window

The List Manager window is divided into two sections:

- List Type view—allows you to select a list type. Lists of the selected type appear in the List Detail view. You can also select List Manager to perform global operations.
- List Details view—allows you to select one or more lists of a specific type. You can select a list and edit its properties, or copy the list data.

> → **Note:** If you choose menu View - Templates, the List Details view shows list templates.

Figure 194 shows the List Manager window.

**Figure 194**   List Manager window
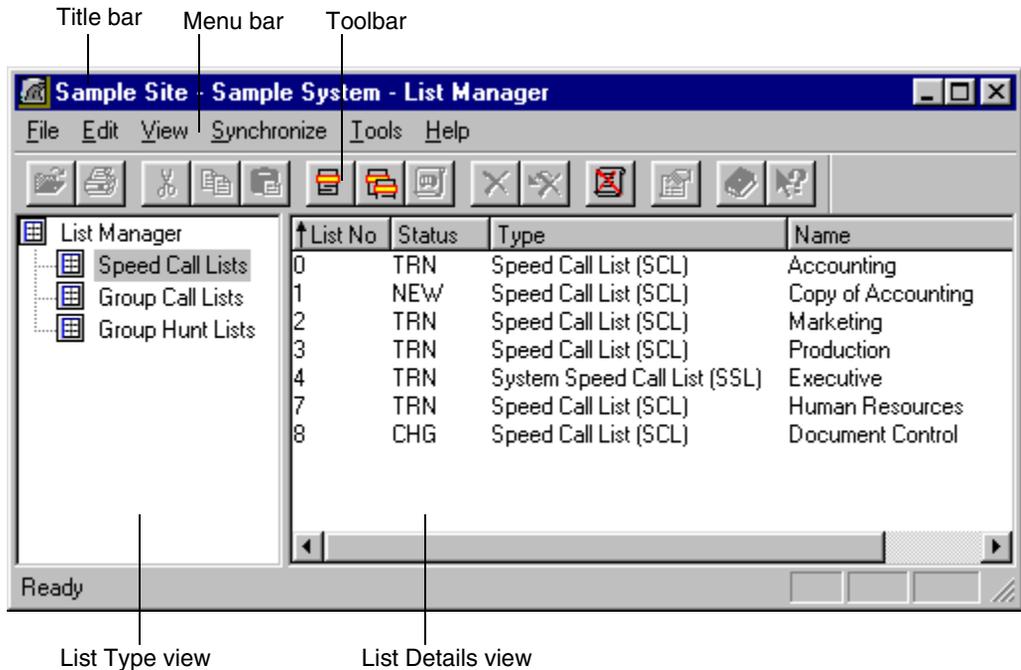


Figure 194 calls out the following List Manager components:

- **Title bar**—Identifies the system and contains standard Windows controls to minimize, maximize, and close the window.

- **Menu bar**—Provides easy access to List Manager commands

- **Toolbar**—Provides easy access to List Manager commands

- **List Type view**—Allows you to select which type of list to access

- **List Details view**—Displays all lists of the selected type, including the list number, synchronization status, list type, and list name

## The List view

Choose View - Lists to display lists defined for the system. Each list contains the following information:

**List Number:** Unique number used to identify the list on the system

**Type:** Type of list, based on the Meridian 1 or Succession CSE 1000 feature it supports (Speed Call, System Speed Call, Group Call, Group Hunt).

**Sync Status:** An indication of whether the Meridian 1 or Succession CSE 1000 system's data and the data in OTM are synchronized. The following information defines the synchronization status for each list:

* **NEW**: List data defined in OTM, but not uploaded to the Meridian 1 or Succession CSE 1000 system.
* **TRN**: List data is synchronized with the Meridian 1 or Succession CSE 1000 system.
* **CHG**: List data has been modified in OTM but not in Meridian 1 or Succession CSE 1000 system.
* **RPL**: List data defined in OTM to replace synchronized station data.
* **OUT**: A synchronized list deleted from OTM but not yet from the Meridian 1 or Succession CSE 1000 system.

**Name:** A name entered in List Manager, used to identify this list.

## The Template view

Choose menu View - Templates to display list templates defined for the system. The display contains the same information for a template as the List view contains for a list.

Templates provide data that is common among many individual lists. In a single operation, using a template, you can define multiple lists which have data in common. A template can contain all or part of a list definition. You can change template data in exactly the same way as station data.

## List Manager menus

List Manager's menus consist of the following:

* File
    — **Open**: Display the property sheet of the selected list or template.
    — **New**:
        — **List**: Create a new list. Displays the New List property sheet.

- — **Multiple Lists**: Create more than one new list. Displays the Multiple List Creation dialog.
- — **Template**: Create a new template. Displays the New Template property sheet.
- — **Print Setup...**: Select a printer and a printer connection
- — **Reports**: Select a Report
- — **Properties**: Display the property sheet of the selected list or template.
- — **Close**: Close the List Manager window.

- • Edit
  - — **Undo**: Reverse the most recent command.
  - — **Cut**: Remove the selected list(s) or text and place it on the clipboard.
  - — **Copy**: Place a copy of the selected list(s) on the clipboard.
  - — **Paste**: Insert a copied list into the List Details view.
  - — **Delete**: Remove the selected list(s) from the List Manager window.
  - — **Select All**: Selects all lists in the List Manager Display View.
  - — **Change Status to**:
    - — **NEW**: Change the synchronization status of the selected list to NEW. Data has been defined, but not uploaded to the Meridian 1 or Succession CSE 1000 system.
    - — **TRN**: Change the synchronization status of the selected list to TRN (transmitted). Data is synchronized with the Meridian 1 or Succession CSE 1000 system.
    - — **OUT**: Change the synchronization status of the selected list to OUT. Data is removed from OTM and will be deleted from the Meridian 1 or Succession CSE 1000 system during the next synchronization.
    - — **CHG**: Change the synchronization status of the selected list to CHG (change). Data has been changed, but the changes have not been uploaded to the Meridian 1 or Succession CSE 1000 system.
    - — **RPL**: Change the synchronization status of the selected list to RPL (replace). Data in the Meridian 1 or Succession CSE 1000 system is replaced with new data during the next synchronization.

- • View
  - — **Toolbar**: Displays or hides the Toolbar.
  - — **Status Bar**: Displays or hides the Status Bar.
  - — **Lists**: Change the display view to show lists.

> — **Templates**: Change the display view to show templates.

- Synchronize
  - **Transmit**:
    - **Now**: Transmit data from OTM to the Meridian 1 or Succession CSE 1000 system.
    - **Schedule**: Schedule a transmission of data from OTM to the Meridian 1 or Succession CSE 1000 system.
    - **View Last Transmit**: Display a log file showing results of the last data transmission.
  - **Retrieve**:
    - **Now**: Retrieve data from the Meridian 1 or Succession CSE 1000 system to OTM.
    - **Schedule**: Schedule a retrieval of data from the Meridian 1 or Succession CSE 1000 system to OTM.
    - **View Last Retrieve**: Display a log file showing results of the last data retrieval.
- Tools
  - **Delete Unused Lists**: Display the Delete Unused Lists dialog.
  - **Options**: Displays the Options dialog.
- Help
  - **Help Topics**: Display the list of Help topics.
  - **What's This**: Provides context-sensitive help on the next item you select. Clicking anywhere else takes you to the first topic in the help topic list.
  - **About List Manager**: Display release information for the List Manager window.

## Toolbar

The List Manager toolbar includes several useful buttons. The function of each button in the toolbar appears when you hold the mouse cursor over the button. Toolbar buttons provide shortcuts to some of the same commands found in the menus.

# Work with List Manager

This section provides procedures to help you use List Manager to perform common tasks.

## Create a new list

You can create a new list in List Manager and upload the data to the Meridian 1 or Succession CSE 1000 system. The synchronization status of the new list is NEW. You must transmit the list data to the Meridian 1 or Succession CSE 1000 system for the new list to become active.

To create a list:

**1**   In the List Type view, select the type of list you want to create.

**2**   Select File > New > List.

The New List (General) property sheet opens (Figure 195).

> ➡   **Note:** The New List property sheet for each list type is the same as the standard property sheet for that list type. Some default values for the new list are automatically entered.

> ➡   **Note:** You can edit some of the default values for a new list. To edit the list number, the option for Auto List Number Allocation (Tools - Options) must be unchecked.

**3**   Select either a template or an existing list to use as a basis from which to create the new list.

**4**   Enter a list name (up to 50 characters, alphanumeric).

**5**   Select the list type.

**6**   Click OK or Apply.

**Figure 195** Speed Call list properties (General)



**7** Click Apply if you want to modify list parameters. Click the tabs along the top of the property sheet to view various parameters.

## Create a list template

You can create a list template or modify an existing template. Templates provide data that is common among many individual lists. A template allows you to define multiple lists that share common elements.

To create a list template:

**1** Choose View > Templates.

**2** Choose File > New > Template.

The New Template dialog box opens with the General tab displayed (Figure 196).

**3** Select either a template or a list to use as a basis from which to create the new template.

**4** Enter a template name (up to 50 characters, alphanumeric).

→ **Note:** The List Number field does not apply when creating a template.

**5** Select the list type to which this template applies.

**6** Click OK or Apply.

**Figure 196** New Template dialog box



## Create multiple lists

You can create multiple lists with a single operation. You must have a valid template that corresponds to the list type that you want to create. After creating the lists, you should modify each list to provide its unique parameters.

Figure 197 shows the Multiple List Creation dialog.

**Figure 197** Create multiple lists
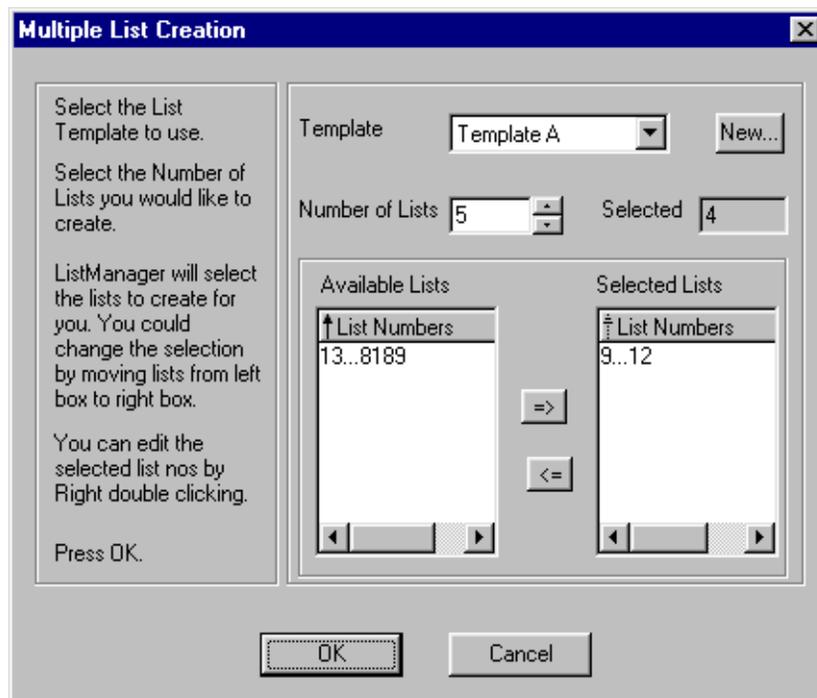


To create multiple lists:

**1** Choose menu View - Lists.

**2** Choose menu File - New - Multiple Lists. The Multiple List Creation dialog appears (Figure 197).

**3** Select a template or click New to create a template on which to base the new lists. The template will provide common data shared among the lists.

**4** Set the number of lists to create.

**5** Select the list numbers of the lists to create. Select a range of numbers in the Available Lists field and click the right arrow.

List Manager will place the correct number of lists into the Selected Lists field.

> **Note:** In the Available List field and the Selected List field, list numbers are represented as ranges. For example, a range of list numbers from 11 to 20 is represented as follows:
>
> 11...20
>
> If you want to create 25 lists and you select the above range, you must still select 15 more list numbers. Select another range to continue adding list numbers to the Selected Lists field. List Manager automatically stops adding list numbers when you reach the correct number, as set in the Number of Lists field.

> **Note:** You can select a subset of a list range. After moving a range from one side to the other, use the right mouse button to double-click on the selected range. You can edit the range to select a subset of the range. For example, if the selected range is 2...10, you can enter 2...9 or 3...8 (but not 1...11).

**6** If there are not enough list numbers available in the selected range, select another range and click the right arrow. Continue until you reach the correct number of lists to create.

**7** Click OK.

## Delete lists

You can select a list or a template and delete it from the system. You can delete all unused lists from the system with one command. The next time you synchronize List Manager lists, the deleted lists are removed from the system.

To delete a list from the system:

**1** Choose View > Lists.

**2** In the List Type view, select the list type. In the List Details view, select the list.

**3**   Choose Edit > Delete. A confirmation box appears, stating,

"Are you sure you want to delete the list(s)/template(s)".

**4**   Click Yes.

To delete a template from List Manager:

**1**   Choose View > Templates.

**2**   In the List Type view, select the list type. In the List Details view, select the template.

**3**   Choose Edit > Delete.

A confirmation box appears, stating, "Are you sure you want to delete the list(s)/template(s)".

**4**   Click Yes.

To delete all unused lists of a specific type from the system:

**1**   In the List Type view, select the list type.

**2**   Choose Tools > Delete Unused Lists.

The Delete Unused Lists dialog appears. All unused Speed Call lists are displayed.

**3**   Select the lists you want to delete.

**4**   Click OK.

The synchronization status of the deleted lists is changed to OUT.

### Manage list data

OTM displays list data in a property sheet that graphically represents the list data. You can manage individual list entries. Data change is described for a typical list. Most lists contain a subset of the data for this example, and the update procedure for each field and function is the same as that described here.

Whenever you modify list data that has already been synchronized with the switch, the Sync Status for that list is set to CHG. This is an indication that OTM and Meridian 1 or Succession CSE 1000 system are not in sync.

*View and modify list (or template) details*

Each list has various properties that define the list. Some properties are shared among all lists of a given type; some properties are unique to a specific list. List Manager property sheets allow you to view and modify all of the various list properties.

To view list details and modify list details:

**1**   Choose View > Lists.

> **Note:** You can choose menu View - Templates to work with List Manager templates.

**2**   In the List Type view, select a list type.

**3**   In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

**4**   Make changes as desired. Click the various tabs to view and modify different list parameters.

**5**   Modify data in the appropriate fields. If you make changes, click Apply before you move from one tab to the next.

**6**   When you have completed the changes, click OK.

*Set advanced properties*

You can change advanced properties for a specific list. Most of the advanced properties have default values that are set in the Options dialog (see "Set global list options" on page 411).

To set advanced properties for a list (Speed Call and Group Hunt):

**1**   Select a list and choose File > Properties. The property sheet for the selected list appears.

**2** On the property sheet General tab, click Advanced Properties. The Advanced Properties dialog appears (Table 17).

**Table 17** Advanced properties for Speed Call lists and Group Hunt lists

| Field | Description |
|---|---|
| Network Class of Service | Select a Network Class of Service, as defined on the Meridian 1 or Succession CSE 1000 (applies to System Speed Call lists). |
| Max. DN Size | Select the maximum length of DNs in the list. The default value is set in the Options dialog (**Tools - Options**). |
| Max. List Size | Select the maximum number of entries allowed in the list. The default value is set in the Options dialog (**Tools - Options**). |
| Memory Usage - in Words | |
| Free Memory Available | Indicates how much Meridian 1 or Succession CSE 1000 system memory is available for all lists, as of the last synchronization. |
| Used by List | Meridian 1 or Succession CSE 1000 system memory required for this list. |

**1** Make change as necessary.

**2** Click OK.

*Modify list entries*

You can view and modify list entries within each list.

To modify list entries:

**1** Choose View > Lists.

**2** In the List Type view, select a list type.

**3** In the List Details view, double-click a specific list.

The property sheet for the selected list appears.

**4** Click the List Entries tab.

The List Entries tab lets you modify parameters for each list entry number (Figure 198).

**Figure 198**   Speed Call List properties (List Entries)
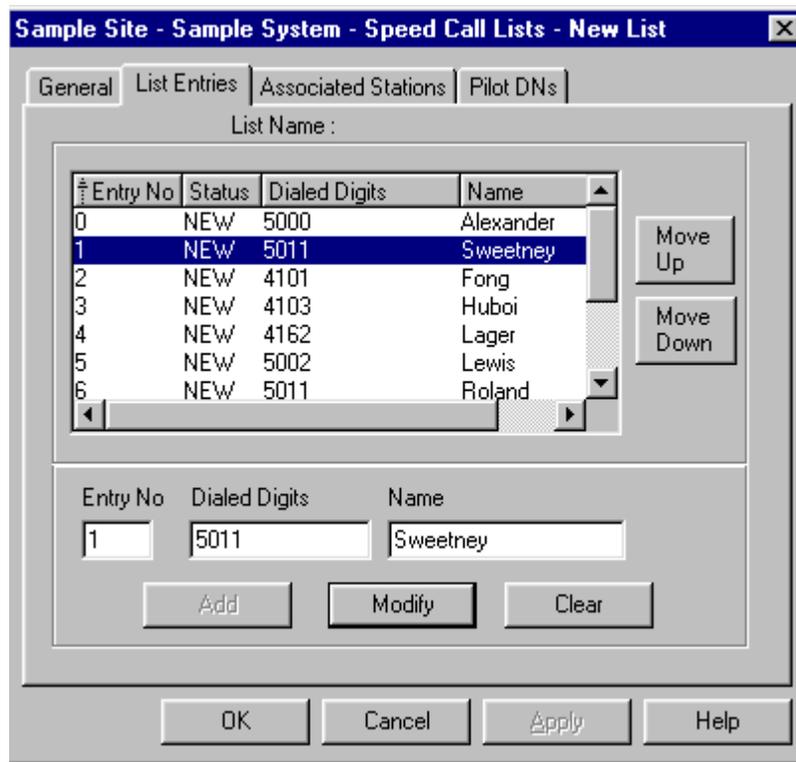


**5**   Use the List Entries buttons to modify list entries, as shown in Table 18:

**Table 18**   List Entries buttons

| Button | Description |
|--------|-------------|
| Add | Add a new entry to the list. |
| Modify | Modify the selected list entry. |
| Clear | Clear the selected list entry. |
| Move Up Move Down | Use these buttons to change the entry number of the selected entry. **CAUTION**: Be careful when you make changes to list entry numbers. This operation re-orders the entry numbers in a list. For example, if you move entry number 10 up to number 2, then entry number 2 becomes number 3, number 3 becomes number 4, and so on. For Speed Call lists, these changes affect the short key used to dial each list entry. For Group Hunt lists, these changes affect the order of the hunt chain. |

**6** Click OK or Apply.

## Work with stations

Use the List Properties (Associate Stations) dialog to assign a feature and its associated list to one or more stations (telephones).

> → **Note:** This operation modifies the entries in the Station Administration module. You must synchronize stations from Station Administration to change these settings on the Meridian 1 or Succession CSE 1000 system.

Figure 199 shows the Associated Stations tab for Speed Call Lists.

**Figure 199** Speed Call List properties (Associated Stations)
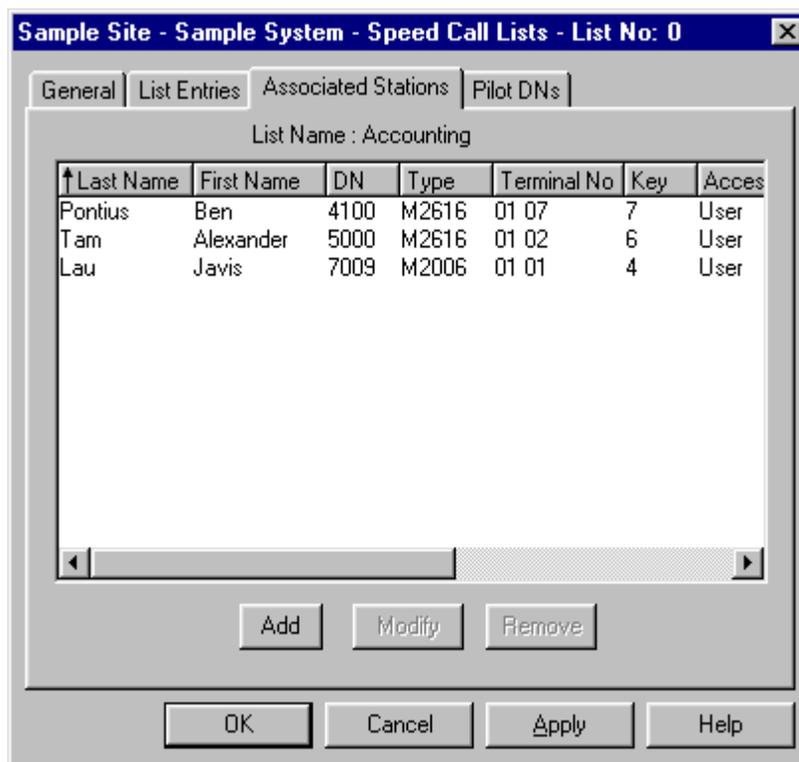
## Assign stations

To change feature key assignments for stations:

**1** Select a list and choose File > Properties.

The List Properties (General) dialog appears.

**2** Choose the Associated Stations tab.

Any stations displayed have the feature assigned.

**3** Click Add.

The Add Stations dialog appears.

**4** In the Select Stations list, select the station(s) and feature key(s) you want to assign the feature and its associated list.

> **Note:** List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

**5** Click Add.

The selected stations are moved from the Select Stations list (bottom) to the Selected Stations list (top).

**6** Click OK.

**Figure 200** Add Stations dialog
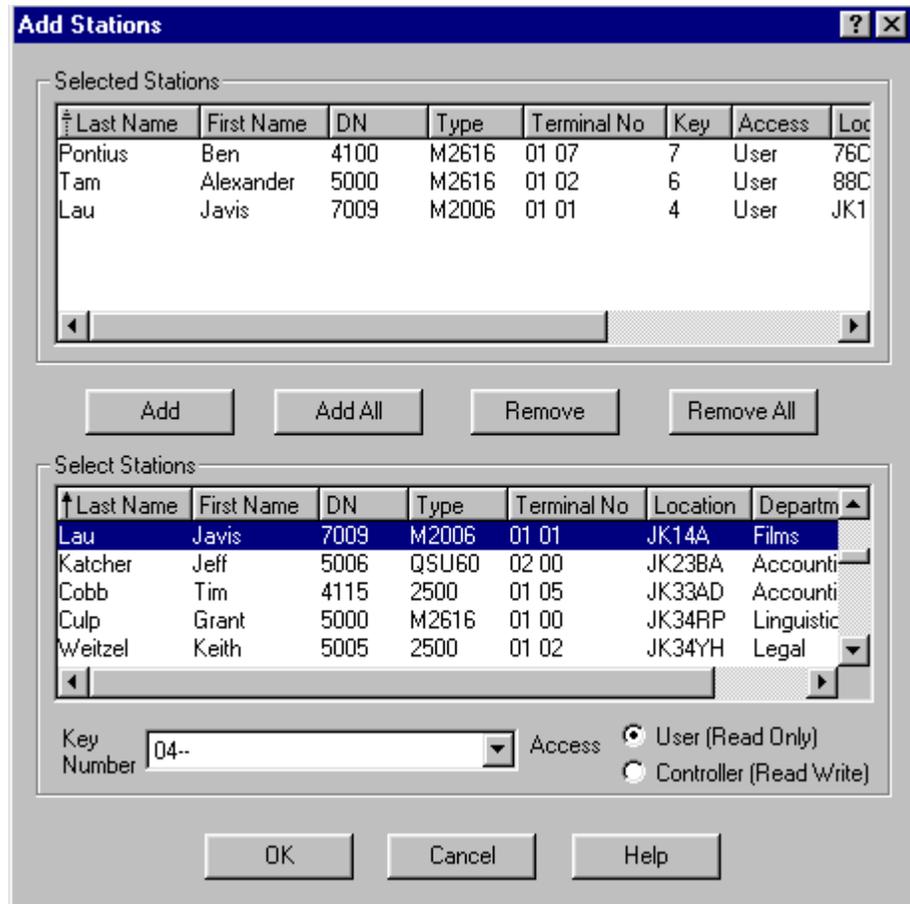


### Modify feature key properties

To change the feature key properties for a station:

**1** Select a list and choose File > Properties.

The List Properties (General) dialog appears.

**2** Choose the Associated Stations tab.

Any stations displayed have the feature assigned.

**3** Select a station and click Modify.

The Modify Station Details dialog appears (Figure 201).

**Figure 201**   Modify Station dialog (Speed Call)
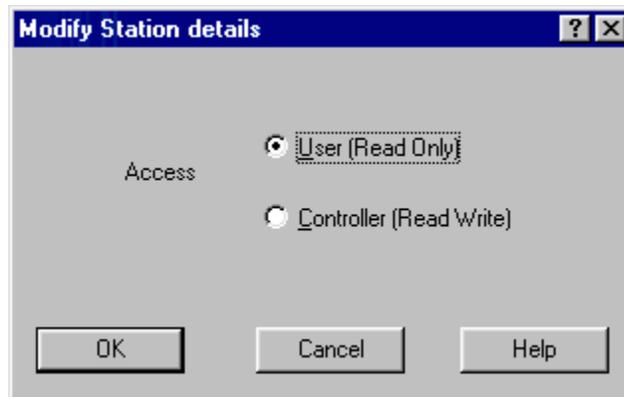


**4**   For Speed Call, select either User or Controller to change the access type, if desired.

> **Note:** List Manager sets the feature key assignment in OTM's Station Administration module. Therefore, you must transmit the data from Station Administration for the feature key assignment to take effect.

**5**   Click OK.

### Remove station assignment

To remove the feature associated with this list from a station:

**1**   Select a list and choose File > Properties. The List Properties (General) dialog appears.

**2**   Choose the Associated Stations tab. Any stations displayed have the feature assigned.

**3**   Select a station or stations and click Remove.

**4**   Click OK.

## Work with Pilot DNs

Pilot DNs provide access to Speed Call Lists. A Pilot DN can also activate Group Hunting.

## Assign a Pilot DN

To assign a Pilot DN to a list:

**1** Select a Speed Call list and choose File > Properties.

The property sheet for the selected list appears.

**2** Click the Pilot DNs tab (Figure 202).

**Figure 202** Speed Call list properties (Pilot DNs)
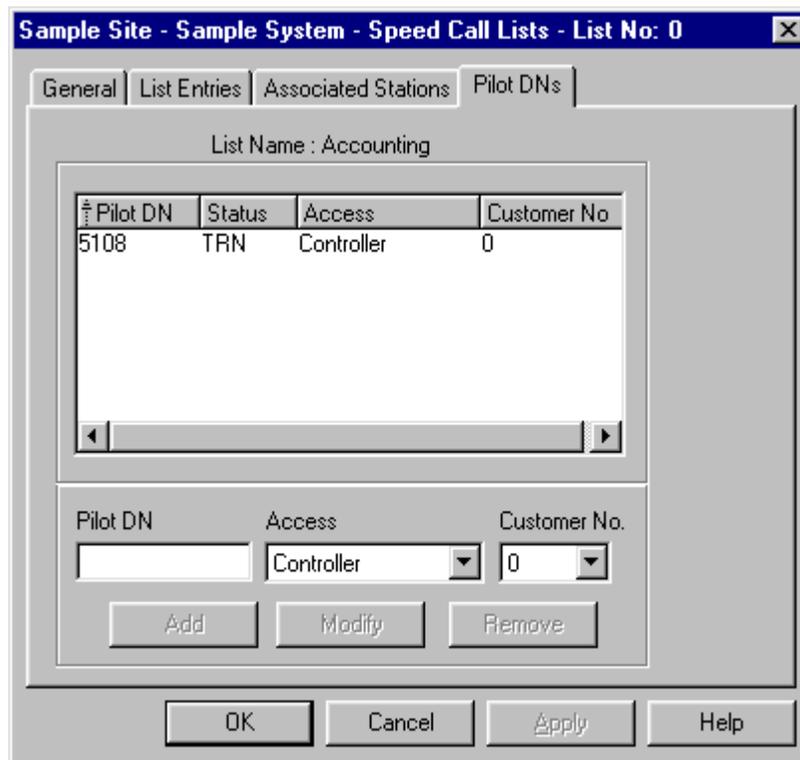
**3**  Use the buttons to Add, Modify, or remove Pilot DNs associated with this list.

> → **Note:** Pilot DNs must conform to the customer Numbering Plan. To check the customer Numbering Plan:
>
> – In the Navigator, select the system and choose menu File - Properties.
>
> – Click the Customers tab.
>
> – Select the customer and click Properties.
>
> – Click the Numbering Plans tab.

**4**  Click OK or Apply.

### Associate Pilot DN to a Group Hunt list

To associate a Pilot DN with a Group Hunt list:

**1**  Select a Group Hunt list and choose File > Properties. The property sheet for the selected list appears.

**2**  On the property sheet General tab, enter the pilot DN into the Pilot DN field.

**3**  Click OK or Apply.

## Copy and paste lists

You can use the copy and paste commands to duplicate a list. Then you can modify the new list to make it unique. You can also paste the list into the List Manager window for a different system.

When you copy and paste a list, the synchronization status of the new list is set to NEW. The new list is added to the system during the next synchronization.

### Duplicate a list

To duplicate a list:

**1**  Choose View > Lists.

**2**  Select a list and choose menu Edit > Copy.

The list data is saved to the PC clipboard.

**3** Choose Edit > Paste.

> **Caution:** A confirmation dialog asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

   **a** Click Change Properties and give the pasted list a new list number.

   **b** Make any other changes that are appropriate.

   **c** Click OK.

## Copy a list from one system to another

To copy a list and paste it to another system:

**1** Choose View > Lists.

**2** Select one or more lists and choose Edit > Copy.

The list data is saved to the PC clipboard.

**3** Open another system's List Manager application.

**4** Choose View > Lists.

**5** In the List Type view, select the appropriate list type.

**6** Choose Edit > Paste.

> **Caution:** If the list number of the list you copied is present on this system, a confirmation dialog asks if you want to overwrite the current list with the copied list. Normally, you do not want to overwrite the current list.

   **a** Click Change Properties and give the pasted list a new list number.

   **b** Make any other changes that are appropriate.

   **c** Click OK.

# Set global list options

Use the Options dialog to set general parameters that apply to all lists of a specific type.

To display the Options dialog:

➜ Choose Tools > Options.

The Options dialog has separate tabs for Speed Call, Group Call, and Group Hunt lists. Some options apply only to lists of a specific type.

List Manager options apply when you create new lists. For a specific list, you can override most of these options. Click Advanced Properties on the property sheet (General) tab.

## Default options

Default options allow you to manage list allocation efficiently.

— List size—default number of entries created for a new list
— Network Class of Service (System Speed Call)—default Network Class of Service associated with entries in a new list
— DN size—Default maximum length of Directory Numbers associated with entries in a new list
— Originator Control over list (Group Call)—determines if the originator of the Group Call can terminate the call
— Max. length of queue (Group Hunt)—Default maximum number of calls that can be queued against the Pilot DN for new lists
— Call Forward All Calls (Group Hunt)—Check to allow Group Hunt to terminate at a station that has Call Forward All Calls allowed.

## Memory optimization

The following options help you manage system memory on the Meridian 1 and Succession CSE 1000 systems. These options allow you to restrict the amount of system memory required to support the lists.

— Maximum List Size—Maximum number of entries allowed in a new list.

— Memory Water Mark—Memory threshold. When the system memory used by lists is at or above the Memory Water Mark, the Auto Increase List Size check box is set to Off.

— Auto Increase List Size—When checked, lists are allowed to grow as new entries are added (until the Memory Water Mark is reached).

— Read Only Auto List Number—When checked, List Manager allows you to edit the automatically generated list numbers as you create new lists.

### Available list numbers

Options for Speed Call and Group Hunt lists include controls where you can set the available list ranges. These options let you restrict the total number of lists allowed for the system. Enter the starting list number and ending list number in the range.

## Work with reports

List Manager lets you view, manage, and generate reports using list data from systems configured in OTM. You can view each report on screen, print the report, or save the report to a file. Report layout and formatting is done through Microsoft Excel.

You can generate a report immediately. You can schedule report generation with specific dates, times, and intervals. Generated reports use the data extracted from the OTM data base. These reports are automatically saved with a system default name to the default location unless you specify otherwise.

Each report format has the following attributes, as noted by the column headers.

• Report Name - names of available reports

• Type - notes if the report is either predefined or customized

• Number of systems - number of systems for which the report will be generated

• Number of Data Fields - number of data fields in the report

• Last Generated - date and time when the report was last generated

Each report shows a specific set of list data. List Manager provides a set of reports whose properties are predefined.

## Reports and text files

All log report activity is performed, by default, in the current working directory for the System (the system subdirectory in your PC system). Other reports are sent to the PC directory of your choice. Here is a list of text files with the appropriate extension found in the working directory:

- Reports (*filename*.TXT)
- Communications logs (*filename*.LOG)

You need only supply the *filename* when prompted to save these files—OTM automatically supplies the appropriate extension.

## Generate reports

You can generate a report and display it immediately, send it to a printer, or save it to a file. You can schedule report generation to take place at predefined intervals.

To generate a report:

**1**   Choose File > Reports.

The Reports window appears.

**2**   Select a report in the window display.

**3**   Click one of the following buttons:

- **Print**—Print the report to the selected printer.
- **Print Preview**—View the report on the OTM PC.
- **Print Setup**—Select a printer to print reports.
- **Schedule**—Display the Schedule window. Use this window to specify when and how often to generate the report.

To save a report to a file:

**1**   Choose File > Reports.

The Reports window appears.

**2** Select a report in the window display.

**3** Check Print to File.

**4** Click Print.

The Export dialog appears.

**5** Select a file format and destination type.

**6** When the Choose Export File dialog appears, enter a file name (or use the default name) and select a directory in which to place the file.

**7** Click Save.

List Manager saves the report to the file name and location specified.

## Predefined reports

List Manager includes several predefined reports. These are listed below along with a short description of each report type. You cannot customize List Manager reports.

List Manager provides the following report forms:

### *Group Call*

• Group Call lists—Group Call lists, sorted by list number

• Group Call lists by name—Group Call lists, sorted by list name

• Group Call lists with entries—Group Call lists including information about their entries.

• Group Call lists with associated DNs—Group Call lists including information about their associated DNs

### *Group Hunt*

• Group Hunt lists—Group Hunt lists, sorted by list number

• Group Hunt lists by name—Group Hunt lists, sorted by list name

• Group Hunt lists with entries—Group Hunt lists including information about their entries

### *Options*

• List Manager Options—List options for each list type

*Speed Call*

- Speed Call list by name—Speed Call lists, sorted by list name
- Speed Call lists—Speed Call lists, sorted by list number
- Speed Call lists by list type—Speed Call lists, sorted by list type (Speed Call or System Speed Call)
- Speed Call lists by SYNC status—Speed Call lists, sorted by synchronization status
- Speed Call lists with associated DNs—Speed Call lists including information about their associated DNs
- Speed Call lists with entries—Speed Call lists including information about their entries

# Voice Mailbox

## Overview

Voice Mailbox (VMB) data is similar to CPND in that it exists as a separate entity within OTM. However, it is associated with a Directory Number (which serves as a mailbox ID), and modifications to the VMB data can be made from any station which has an appearance of the mailbox DN. The station provides a means of access to data which is not a part of the station itself.

> **→**
>
> **Note:** Voice Mailbox is not applicable to Succession CSE 1000 systems. Meridian Mail is not supported on Succession CSE 1000.

Voice mailbox differs from CPND in that it does not have a dedicated overlay. CPND information can be modified using overlay 95 as well as overlays 10 and 11 (OTM uses overlay 95). Voice mailbox information is only accessible from overlays 10 and 11.

### VMB data considerations

VMB data is accessible from the Station Administration module (DN list dialog). VMB data is retrieved and transmitted with station data. There is no separate VMB communications task as there is for CPND.

When you delete a station which has one or more single appearance DNs with associated mailboxes, you are prompted to delete the mailbox(es) on the Meridian Mail system. This information is used to respond to a VMB prompt when the station is OUT'ed on the system.

VMB data can be modified at the Meridian 1 system through the Meridian Mail interface. OTM synchronization is a two-step process, as follows:

1   The Meridian 1 data base must be synchronized by uploading the information from Meridian Mail using LD 48.

2   A station retrieval synchronizes the OTM data base with the Meridian 1. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434.

## Administering VMB

VMB data administration in OTM is provided within Station Administration from the DN assignment function.

### Adding/changing stations

When adding or changing stations, you can access VMB data by choosing the VMB button from the DN assignment dialog, similar to CPND. There is no VMB button in this dialog for systems without feature package 246. There is also no VMB button for multi-line stations when the key is not SCR, SCN, MCR, or MCN. Clicking the VMB button brings up the Voice Mailbox data entry dialog.

**Figure 203**   VMB data entry dialog
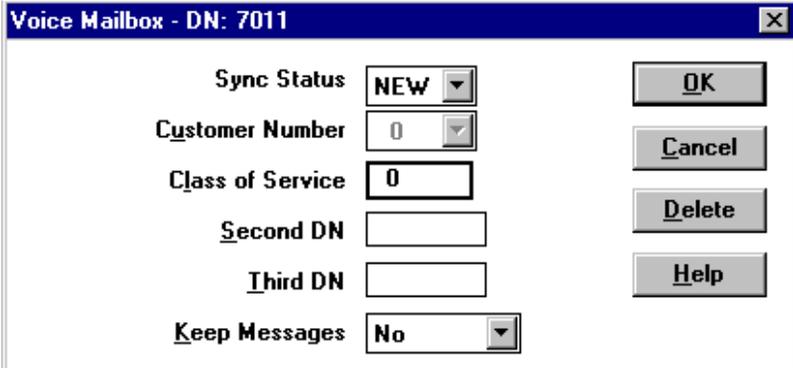
The title bar of this dialog shows the DN associated with the mailbox. If it is an existing mailbox, the data fields contain information from that mailbox record, including the following:

**Sync Status:** This is the sync status of the VMB record, which might be different from the sync status of the station.

**Class of Service:** Numeric entry field (0-127). This field is required when the mailbox is in NEW status, and there is no default value.

**Second DN:** DN entry field. Double clicking the box displays the DN list dialog.

**Third DN:** DN entry field. Double clicking the box displays the DN list dialog.

**Keep Messages:** Drop-down list box containing YES and NO (NO is default). This field is only available when the VMB sync status is NEW.

The VMB sync status indicates which operation is required at the VMB prompt in overlay 10 or 11.

- **NEW**: VMB does not exist on Meridian 1 and will be added at upload time.
- **CHG**: VMB exists on Meridian 1 and will be changed.
- **OUT**: VMB exists on Meridian 1 and will be removed.
- **TRN**: VMB exists on Meridian 1 and no update is required.

Use the Remove button to change the VMB sync status to OUT. This operation is confirmed with a message box. When a VMB is in OUT status, no further updates are allowed (except for UNDO).

If a VMB is modified or added from an existing station, that station's sync status becomes CHG in order to allow the VMB update to occur as part of a station update.

## Deleting stations

When you remove a station that has a single appearance DN with an associated mailbox, you are prompted to determine if the mailbox should be deleted on Meridian Mail as well. In order to respond to this prompt, OTM also prompts you for this information when you delete stations. However, to avoid possible synchronization problems, a different method is used.

When you delete stations in OTM, the delete confirmation dialog is displayed. On systems with VMB, this dialog contains a Delete VMB check box that defaults to checked (YES).

Your YES or NO response is used to continue or cancel the deletion. The delete VMB information is stored as part of the delete transaction, so that it applies to all affected stations. OTM uses this information to respond to any DELETE_VMB prompts presented during transmission of the deleted stations.

The implications of this approach are as follows:

- You are prompted for this information even if none of the stations being deleted has a single appearance DN. In this case, the information is never used.
- If you wish to delete two stations but give different responses to DELETE_VMB for those stations, two separate Edit - Delete operations are required.

This guarantees that the correct information is stored in the station that will actually get the DELETE_VMB prompt. In cases where all occurrences of a multiple appearance DN are deleted within the OTM data base, only the last station transmitted will receive the DELETE_VMB prompt. Since it is not possible to know which station will be transmitted last in all situations, the DELETE_VMB information must be stored with all the stations.

This procedure prevents accidental deletion of mailboxes when the OTM and Meridian 1 data bases are not completely synchronized. Since OTM prompts you on any deletion (even if no single appearance DNs are involved), the DELETE_VMB information is available if the Meridian 1 prompts for it unexpectedly. For example: The OTM data base has two appearances of a DN, but the Meridian 1 data base has only one (due to a change done in overlay 10 or 11).

## Changing DNs

When you change a DN on a station, its associated mailbox must be removed from the VMB file if the DN prior to the change was single appearance. You should delete the VMB record when you commit to the station update by clicking OK on the Station dialog. In order to warn you when a mailbox record is to be deleted, a confirmation dialog appears.

The confirmation dialog appears when a station change will result in one or more mailboxes being deleted. If you choose to cancel at this point, the entire station update is canceled. If you choose to continue with the operation, the mailbox can be restored later by performing an undo of the station update.

Because a single mailbox can be updated from multiple stations and those stations can be transmitted to the Meridian 1 system in any order, there are some synchronization issues which can not be resolved by OTM. Some of these issues are described in the examples below.

All of the following examples involve two transactions, which, by default, are transmitted on a first-come-first-served basis. The ambiguities described below only occur if you schedule the second transaction to be transmitted before the first.

## VMB data synchronization

Consider the following examples when scheduling synchronizing station data associated with Voice Mailbox data:

### Example 1—Deleting stations

Station A and Station B have the only two appearances of DN 2000, which has an associated voice mailbox.

**1**   Delete station A and respond YES to the Delete VMB dialog.

**2**   Delete station B and respond NO to the Delete VMB dialog.

If station A is scheduled before station B, the mailbox is not deleted on Meridian Mail. If station B is scheduled before station A, the mailbox is deleted.

### Example 2—Adding a mailbox

Station A has single appearance of DN 2000, which has an associated voice mailbox in TRN status.

**1**   Change DN on station A to 2001 (this deletes the VMB record for 2000).

**2**   Add station B with DN 2000 and create a new voice mailbox for it.

If station B is scheduled before station A, the transmit will fail when it attempts to create a new mailbox for DN 2000. It will exist on the system until station A is transmitted.

### Example 3—Changing a DN

Station A and station B both have an appearance of DN 2000, which has an associated voice mailbox. Station B is in TRN status.

**1** Update the mailbox through station A.

**2** Before transmitting station A, change DN 2000 to 2001 on station A.

When station A is transmitted, the updates to the voice mailbox are not made, because station A no longer has an appearance of DN 2000.

# Global Update

## Overview

The Global Update function is available in both the Station Administration and the CPND Administration modules. It lets you change common data values in each of selected items in the main application window (Station list or CPND list) either directly or through a confirmation option.

The Global Update procedure involves the following steps:

**1** Select those list items that you wish to update. You can use the Select feature to select stations based on specific criteria.

**2** Select a field for update.

**3** Define the update or updates to perform on a selected field in the selected items.

**4** Execute the change.

You can perform the update on all selected items directly, or you can do it through a confirmation option on an item-by-item basis.

If you are running in Installation mode, you are prompted to set up communication with the Meridian 1 or Succession CSE 1000 system whenever you modify a data record. You can synchronize the data now, schedule a time for synchronization, or cancel the prompt and schedule synchronization later. See "Communicating with the Meridian 1 or Succession CSE 1000 system" on page 434.

# Selecting data items

In a data list window of Station Administration or CPND Administration, select the items you wish to update. You can change the current selection as follows:

**1** Click to select a single item.

**2** Use the space bar to turn off all selections and select only the first station in the list. This method of selection turns off all other selections, leaving only the single current selection.

**3** To select multiple stations, hold down the <Shift> key and click a station, or press the space bar, to toggle the selection status of that station without affecting other selections.

Choose Edit - Select All to select all items, or you can define criteria to select a group of stations using Edit - Select.

## Define selection criteria

To define criteria for record selection, choose Edit - Select in the Station view of the Station Administration window or in the CPND Administration window. This displays a Record Selection Criteria dialog in which you enter the expression defining the selection criteria.

**Figure 204** Record Selection Criteria dialog
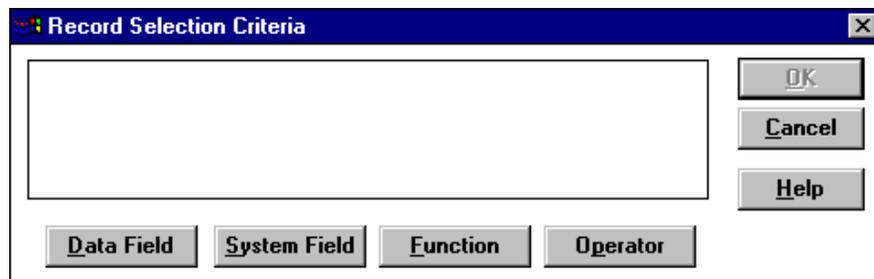
An expression is a formula that follows standard mathematical conventions regarding the use of brackets ({ }) and the order of operations (add, subtract, multiply, or divide). Operations can act on numeric data or on field values from the OTM data base. Field names must be exactly as defined in the OTM data base. You can enter the desired expression by typing it in the text box directly, or by using the selection criteria and operation buttons provided.

The dialog has buttons that allow you to select fields, operators, and functions to build a valid expression. You may have to modify the position of brackets when completing the expression.

When you have finished creating a valid expression, click OK to display the Station Administration window. Those items which fit the criteria are highlighted. You can still modify this selection as described in "Selecting data items" on page 421.

### Select Data Field

When you choose Data Field, a list of available fields is displayed in the Select Data Field dialog box (Figure 205).

**Figure 205**   Select Data Field dialog box
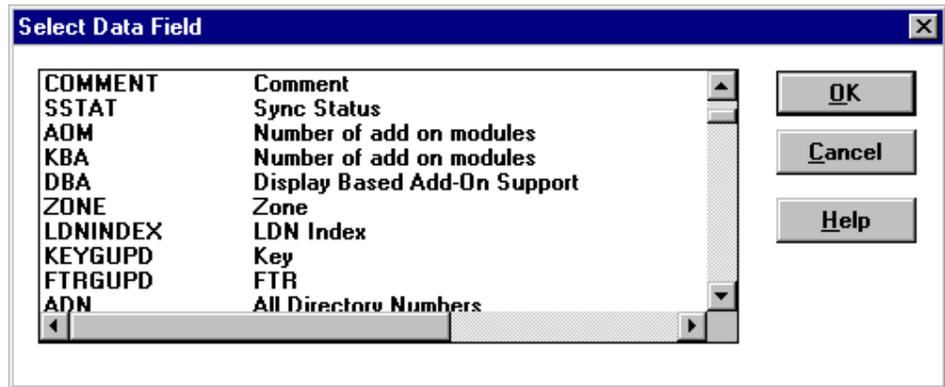
Select the desired station or CPND field name and click OK to paste the field into the Select Criteria expression text box at the current cursor position. You can type a letter to scroll the listing to the next item starting with that letter.

> →   **Note:** Global update is not supported on the following fields: LNAME, FNAME, and DEPT.

### Select System Field

When you choose System Field, a list of available fields is displayed in the Select System Field dialog box (Figure 206).

**Figure 206**   Select System Field dialog
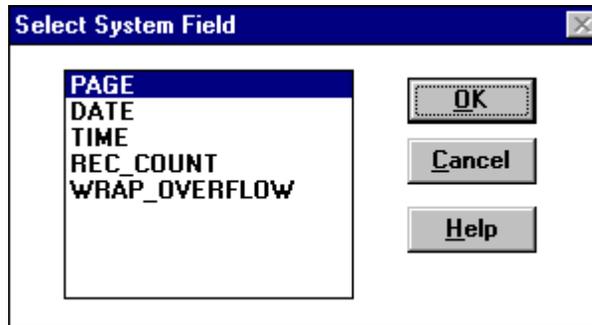


Select the desired field name and click OK to paste the selected field name into the Select Criteria expression text box at the current cursor position.

### Select Function

A function can generate a value on its own, or it may act on the field directly after it in the expression to produce a value that depends on that field value. When you choose Function, a list of available functions is displayed in a Select Function dialog box (Figure 207).

**Figure 207**   Select Function dialog box
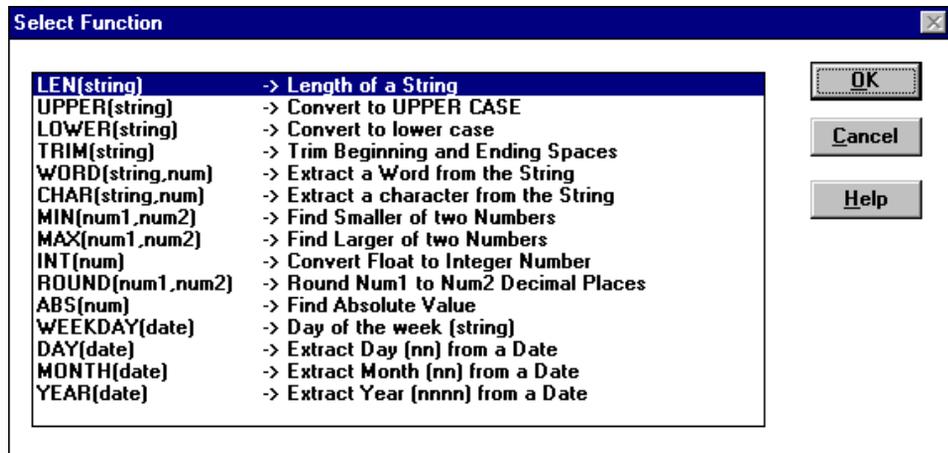


Select the desired field name and click OK to paste the selected function name
into the Select Criteria expression text box at the current cursor position.

## *Select Operator*

An operator causes a mathematical combination of field values (arithmetic,
Boolean, conditional, and so on). When you choose Operator, a list of available
operators is displayed in an Operators dialog box (Figure 208).

**Figure 208**   Operators dialog box
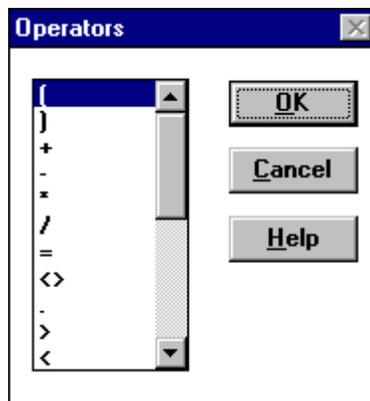


Select the desired operator and click OK to paste it into the Select Criteria
expression text box at the current cursor position.

*Selecting the items for change*

When you have completed the selection criteria expression, click OK to return to the Administration list window. All items that meet the defined criteria are highlighted.

## Example expressions

Below are examples of selection expressions to help you understand the Select feature.

## Example 1

Select all stations that have been changed in the OTM data base since the last transmission to the switch.

The SYNC field shows synchronization for the sets in relation to the Meridian 1 or Succession CSE 1000 system's data base. If the sync status of the set is TRN (for transmitted) then all changes have been transmitted to the switch and the data is synchronized with the switch. Any other status (NEW, OUT, CHG, RPL) identifies a set that has been changed on OTM and needs to be transmitted to the switch (see the Sync Status section for details.)

In order to select all stations that need to be transmitted, you can either select all stations in NEW, OUT, CHG or RPL status or you can simply select all sets that are not in TRN status. The selection will be the same in either case. For this example, we'll choose all sets that are not in TRN status:

**1**  Choose Edit > Select.

**2**  From the Data Field list choose SSTAT.

**3**  Click <> (not equal to) from the Operator list (or simply type in <>).

**4**  Type in "TRN" (Note: all strings must be enclosed in quotes. Column 2 in the Data Field List identifies the field as either a string or numeric).

The complete command in the Record Selection Criteria edit box is as follows:

STATION->SSTAT<>"TRN"

Note that instead of following steps 2-4 you can simply type in the expression above.

**5** Click OK.

All stations will be selected except those in TRN status.

### Example 2

Select all stations with a prime DN between 4000 and 5000.

To select all stations within this range, select all sets with PRIMEDN>4000 and PRIMEDN<5000. OTM will allow you to do this by following these steps:

**1** Choose Edit - Select.

**2** Select PRIMEDN from the Data Field list.

**3** Select > from the Operator list (or simply type in >).

**4** Type in "4000".

**5** From the Operator list select .AND.

**6** Select PRIMEDN from the Data Field list.

**7** Select < from the Operator list (or simply type in <).

**8** Type in "5000".

The complete command is as follows:

STATION->PRIMEDN>"4000".AND.STATION->PRIMEDN<"5000"

**9** Click **OK**.

All stations that have a prime DN between 4000 and 5000 will be selected.

### Example 3

Select all M2616 sets with class of service CFXA.

**1** Choose Edit > Select.

**2** Select INST from the Data Field list.

**3** Select = from the Operator list (or simply type it in).

**4** Type "M2616" (criteria is case sensitive; make sure you use a capital M).

**5** Select .AND. from the Operator list.

**6** Select CFXA from the Data Field List (the mnemonic CFXA represents Call Forward which can be either allowed "CFXA" or denied "CFD").

**7** Type in ="CFXA".

The complete command is as follows:

STATION->INST="M2616".AND.STATION->CFXA="CXFA"

**8** Click OK.

All M2616 type stations with Call Forward External Allowed (CFXA) will be selected.

## Specify the change

You can perform a global update on a single field in each item selected in the list window. Once you have selected the desired items for update, you select the field to change.

### Select the field to change

When you choose Edit - Global Update, the Select Data Field dialog list appears. The fields listed include only those that can be changed globally. For example, the Instrument (INST) field is not included in this list because some of the fields and their values in the record depend on the instrument.

When you have selected the field to change, click OK to display the Global Change Specification dialog. The selected field name is displayed in the Mnemonic box. The example in Figure 209 shows the entries required to allow Call Forward No Answer on all selected station on which it is currently denied.

**Figure 209**   Global Change Specification dialog box



The Global Change Values edit box lets you set up the changes in the field values of the field indicated by the Mnemonic box. The box contains a list of changes that you define by entering values in the Old Value and New Value fields.

> **Note:** The Old and New Value text boxes are case-sensitive. The values must be entered in the same case as is used in the OTM data base. For example, "**XYZ**" and "**xyz**" are not the same values.

## Perform the global change

When you click OK in the Global Change Specification dialog box, the Global Change dialog box opens (Figure 210). This dialog box gives the current status only (you cannot edit any of the fields).

**Figure 210**  Global Change dialog box



The dialog contains a Station Definition area to identify the station currently being changed. The Change area displays the Old and New Values.

If you are not using change confirmation, a "percentage done" bar informs you of the progress of the changes.

While the change is in progress, the dialog displays the Cancel and Help buttons. Help displays help for this dialog and Cancel halts the change task.

> ⚠ **Warning:** If you click Cancel, there is no way of controlling which records are changed and which are not.

When the task is complete, the Cancel button is replaced by an OK button.

## Change confirmation

If you elected to confirm changes, a Confirmation dialog asks you whether to "Change this record?", for each station record in turn. The Global Change dialog contains Station identification and Change identification data for the current field.

You can move this dialog in the same way as other Windows dialogs in order to see the progress bar and function buttons in the Global Change box.

The Confirmation dialog displays the following buttons:

- **Change:** Perform the change indicated in the Global Change data box and proceed to the next station.
- **Skip:** Proceed to the next station without changing the current one.
- **Change All:** Proceed with all remaining changes without confirmation.
- **Cancel:** Cancel all remaining changes.

During the change process, the progress bar changes and the Global Change data area is updated.

### Change completion

When the Global Change task is complete, the Confirmation box is cleared, the Global Change box indicates 100% completion, and the Cancel button is replaced by an OK button.

Click OK in the Global Change dialog to return to the list window.

## Global Update—wildcards, matching, and allowed fields

If you choose Edit > Global Update, you build a list of changes for a single field on the selected records. The list of changes is built by adding requests to change Old Value to New Value for the chosen field. To improve efficiency and to shorten the list of changes, you can use **\*** (asterisk), the wildcard character. The wildcard matches any value in the field.

Wildcard matches that you specify are always done after the other Old Value matches have failed. Otherwise, matches are attempted in order. For each selected record, the first change request that matches the Old Value is implemented.

**Key\*** allows you to update a feature when the key on which the feature resides is unknown. For example, suppose you wish to update the Conference key on all sets to No Hold Conference/Autodial. The Conference key may exist on any key of the selected station(s). **Key\*** allows you to update the key feature without knowing the key number. OTM searches for the first occurrence of the feature specified, and updates that key per the instructions. See "Global Update—examples" on page 431 for more detail.

Certain fields on the station may not be changed with the Global update facility:

- Location must be unique for each station, so Global update is not permitted.
- Station type may not be changed with global update.
- Certain administrative features of a station, including color and type cannot be changed.

## Global Update—examples

A few examples are provided below to help you use the Select and Global Update features. These examples provide the basic steps for selecting stations based on certain criteria and updating common fields. These methods can be applied to a variety of Global Update situations.

### Example 1

Suppose you wish to change all DNs in the range 4000-4999 to a 5 digit 54000-54999. You wish to apply this change to all stations for Customer 1.

**1** Global Update is applied to selected stations only. You should therefore select all stations for Customer 1. Choose Edit - Select. Click on Data Field and choose the Customer Number field to build the expression STATION->CNUM = 1. (The STATION->CNUM portion is provided automatically when you select Customer Number from the list of Data Fields).

If there is only one customer on the Meridian 1 or Succession CSE 1000 system, use Edit > Select All to select all the stations for this DN change.

**2** Choose Edit > Global Update to specify the DN change.

- Specify the field to be changed in the Select Data Field dialog. OTM provides a special field called All Directory Numbers. You can move the highlight in the Select Data Field dialog until the All Directory Numbers field is highlighted. Click on OK to select the All Directory Number field.
- In the Global Change section, you are asked to build a list of each old value and the new value with which to replace it. The Mnemonic field shows that we are working with the field All Directory Numbers (ADN).

- Enter the DN range 4000-4999 in the Old Value box. Move to the New Value box and enter 54000-54999. To enable this change, click Add. The requested change appears in the Global Change Values box. (You can Update or Delete each entry in the Global Values box by clicking the appropriate button.)

- When you are satisfied with this change request, click OK.

- OTM examines each station to see if any changes need to be made. A meter marks OTM's progress through the stations. Click Cancel to halt the updating process.

- For any applicable station, the Global Change dialog displays identifying information for the station and the old and new values that are to be modified.

### Example 2

Suppose you wish to change all Conference keys (A03) on all stations to No Hold Conference/Autodial keys (CA). Conference may currently be configured on any key on the selected stations.

1   Select the stations to be updated. Since all stations need to be changed, choose Edit > Select All.

2   Choose Edit > Global Update to specify the desired change. Choose Key from the Select Data Field window. (You can move immediately to the Key mnemonic by typing in the first letter of the mnemonic, K.) The Global Update window opens. A list box allows you to specify which key to change. Since you are not sure which key on each station is equipped with Conference, use KEY*, the default for this list, to update the feature regardless of the key number.

3   Enter the existing value of the key to be changed in the Old Value box, A03 and press <Tab>. (If the key you wish to change has parameters, tabbing brings up the parameter fields.) Conference does not have parameters, so tab moves you to the New Value box. Enter the mnemonic of the new feature (in this case, CA for No Hold Conference Autodial). Press <Tab> to display edit boxes for the parameters associated with the new feature. Enter the appropriate data in the parameter fields.

**4** You can choose to confirm each change. Once you click OK, OTM begins the updates. OTM searches each selected station for the first occurrence of A03. If A03 is encountered, OTM changes the key to the new value: CA.

> **Note:** If the station contains multiple Conference keys, only the first one will be changed. You can run a second global update to change the second appearance of a feature.

## *Example 3*

Suppose you wish to add a feature to the first blank key on each set, but the first blank key may be a different key number on each set.

The choice of Key* for your Global Update criteria will tell OTM to look for the first occurrence of a particular feature on each set selected. When OTM encounters that specified feature it will change that first occurrence to the specified new feature and then proceed to the next set. In this example, the feature we are looking for is a blank feature. Perform the following steps:

**1** Select all the stations you wish to change.

**2** Select Edit > Global Update.

**3** Choose KEYGUPD (Key Global Update) from the criteria list.

**4** Choose the key number KEY* (this is the default).

**5** Enter nothing (blank) in the Old Value, enter the new feature mnemonic and appropriate parameters in the new value. Select Add to add to the Global Update list.

**6** Click OK. All stations selected will have the new feature added to the first blank key. If a selected set does not have any blank keys, the feature will not be added to that particular set.

# Communicating with the Meridian 1 or Succession CSE 1000 system

## Overview

Meridian 1 and Succession CSE 1000 systems can be programmed with relevant station data, list data, and CPND data from the OTM application. The OTM application can also retrieve data from a Meridian 1 or Succession CSE 1000 system. For example, you can create an OTM data base for a system and then upload relevant data to program a Meridian 1 or Succession CSE 1000 system. You can make modifications within OTM and upload these to the system. At any time, you can download system data to OTM for record-keeping or verification purposes. If you have a Meridian 1 or Succession CSE 1000 system and wish to start using OTM to administer the data, you would download the data from the system and update the data in OTM to include all OTM administrative and record-keeping data.

Your PC uses a modem to communicate, through normal telephone wires, with a modem connected to the Meridian 1 or Succession CSE 1000 system. OTM can also use an Ethernet connection on the Succession CSE 1000 system and, if it is available, on the Meridian 1 system. The communications protocols must be predefined for each system. From the OTM Navigator window, select the desired system. Choose File - Properties to display the System Properties window. Select the Communications tab to define the appropriate communications protocols for this system.

Station Administration, CPND, and List Manager use the Synchronize menu to schedule communications with the system.

### Communications considerations

Retrieving data is a two-stage process. The Meridian 1 or Succession CSE 1000 system's data is first downloaded and stored in the current working directory (the OTM system subdirectory). Parsing converts the data into the OTM data format. This new data overwrites (synchronizes) the OTM data base for the system with the data from the Meridian 1 or Succession CSE 1000 system. The Meridian 1 or Succession CSE 1000 system's data can be parsed at any time after retrieval.

OTM requests a customer number for all data retrievals in order to enforce the Meridian 1 and Succession CSE 1000 system's Limited Access to Overlays (LAPW) restrictions. If the login password associated with the entered customer number is restricted from the print routines needed for synchronization, the data will not be retrieved.

### Station synchronization vs. list synchronization

List Manager synchronization is a separate task from Station synchronization.

> **Note:** Synchronize list data before synchronizing station data.

Some List Manager settings make changes in OTM's Station Administration module (for example, feature key assignment). You must ensure the list data is present on the system so that station validation does not fail.

### Station retrieval—TTY Port configuration

During the synchronization retrieval operation, OTM requests a print of the information on the Meridian 1 or Succession CSE 1000 system through the SDI port. The port used for OTM data retrieval should be configured only as a Service Change port. The OTM System Terminal application can be used to access LD 17 to temporarily configure the TTY port as SCH only (not required for Ethernet connections). If the port is configured for other data such as Traffic or Maintenance messages, OTM will attempt to distinguish this data from relevant station data. The retrieval log will give errors when data is not recognized as station data.

### Data retrieval—Log window

During data retrieval, the amount of activity in other Windows tasks should be limited.

During long data retrievals, or if there is enough activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition will terminate the retrieval process to prevent erroneous data from being entered into the OTM data base.

To prevent this occurrence, the Log Window will automatically minimize itself. The icon will be labeled "Log Window:" and will contain the current site and system names. You should wait momentarily and restore the Log Window to check the progress of the retrieval.

The Log Window remains on the screen longer if you resize it to contain fewer lines. The amount of window resizing and moving during data retrieval should be limited, since these activities will prevent the retrieval activity from processing incoming characters.

If the capacity of the communications buffer is exceeded during the retrieval, necessary data is being lost. The OTM software displays a message and terminates if the buffer is exceeded. In this case, stations are not added to the OTM PC data base. The message is printed to the log file, warning that the data has been lost.

Repeat the retrieval to add the new data. It is possible to retrieve a portion of the stations on the Meridian 1 or Succession CSE 1000 system by choosing Synchronize > Retrieve > Specify.

## The communications task

Synchronization is a task that ensures that the OTM data base reflects the data on the Meridian 1 or Succession CSE 1000 system. The task can be achieved in two ways:

- Retrieve the Meridian 1 or Succession CSE 1000 system's data to the OTM data base (download).
- Transmit OTM data to the Meridian 1 or Succession CSE 1000 system (upload).

**Note:** Nortel Networks recommends that you turn off all TTY messages (including bug messages) during download or upload.

Whenever you require access to a Meridian 1 or Succession CSE 1000 that is defined as a system for OTM, use the Synchronize menu of the OTM module you are currently using (Station Administration, CPND, or List Manager). You can use this menu to schedule upload or download of selected data, or you can define criteria to download or upload specific data. Whenever you modify the OTM data base, you are prompted to set up a transmit task to upload the new or modified data to the Meridian 1 or Succession CSE 1000 system.

## Synchronization

Whenever a communication task has been defined, you are prompted in a Synchronize dialog box to set up a schedule for the task (Figure 211).

**Figure 211**   Synchronization dialog box
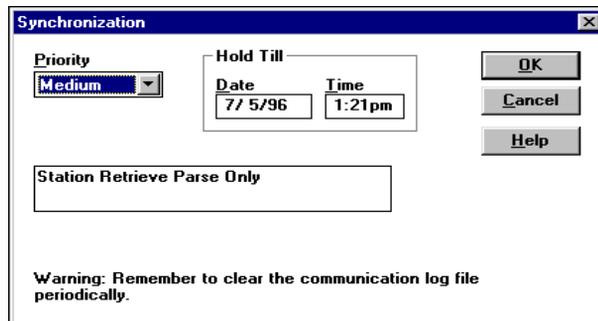


The following data can be entered to schedule a task:

### *Priority*

The Priority drop-down list box contains the numbers 1 through 10, representing the priority level for the task. The number 1 represents High, 6 represents Medium and 10 represents Low. The default is Medium. Change the priority by selecting an item, or enter the number in the text box.

The Priority number determines where, in the current communications task queue, this task is placed.

### Hold Till

Hold Till is made of two text box fields that determine when this task is sent to the communications queue.

### Date

The date for the task in the format *MM/DD/YY*, where *MM* is the two digit month in the range 01-12, *DD* is the two digit day in the range 01-31, and *YY* is the two-digit year. The default entry is the current date (leading zeroes are dropped when the input is validated).

### Time

The time for the task in the format *HH:MMXX*, where *HH* is the two-digit hour in the range 01-12, *MM* is the two-digit minutes in the range 00-59 and *XX* is AM or PM representing before or after 12:00 noon. The default entry is the current time.

### Description

Station Update - Station Transmit

CPND Name Update - CPND Name transmit

CPND Update - Configuration transmit

### Change as replace

This field is only available if OTM is in Maintenance mode. See "Synchronization considerations" on page 330.

If you accept the default entries, the task is scheduled immediately.

Click OK to send the task to the Scheduler module of the OTM application. If the task is not immediate, the Scheduler runs iconized on the desktop. The Scheduler must be running at the scheduled time for the task to be sent to the communications task queue.

You are not required to schedule a task at any particular time. You can click Cancel in this dialog and use the Synchronize menu at any time to schedule a task.

# Download

This task updates the OTM data base with selected data from the Meridian 1 or Succession CSE 1000 system. You can select data items in the current list window (Station or CPND) or you can define criteria for system data to be retrieved.

When you choose Synchronize - Retrieve, a submenu allows you to select criteria for downloading selected station data. The submenu contains the following items:

**All**: All data for stations or CPND in the system

**Selected**: Only items selected in the current list of CPND or stations

**Since**: Only stations on the system that have changed since a specified date (not applicable to CPND)

**Specify**: Define criteria for stations or CPND data on the system for download

**Reserved Unit TNs**: Terminal Number units that have been reserved for non-station instrument types that do not apply to a particular customer, for example, PWR, OOSSLT, OOSMLT

**Parse Only**: Lets you access raw data retrieved from the Meridian 1 or Succession CSE 1000 system and parse it into the correct format. Note that the parsed data will overwrite the current Station Administration data

**Log**: View or clear a log of communications activity

## Retrieving all data

You can set up communications with the system to retrieve all data (station or CPND) that pertains to a single customer in the Meridian 1 or Succession CSE 1000 system.

### *Station Retrieve All*

Choose Synchronize > Retrieve > All in the Station Administration module to display the Station Retrieve All dialog box .

**Figure 212** Station Retrieve All dialog box
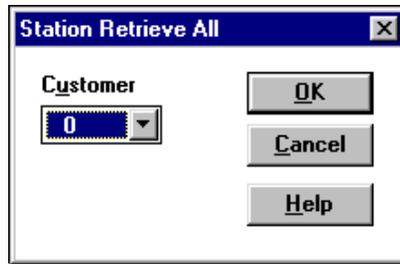


The dialog box contains the following data entry field:

*Customer*

A drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

When you click OK, you are prompted to set up the communications task.

→ **Note:** During station retrieval, the hardware list is updated with cards that support the type of stations being configured in OTM. These might not be the exact type of hardware cards actually installed in the Meridian 1 or Succession CSE 1000 system. However, they will be cards with equivalent function as the installed cards.

*CPND Name Retrieve All*

Choose Synchronize > Retrieve > All in the CPND Name view to display the CPND Retrieve dialog box (Figure 213).

**Figure 213** CPND Name Retrieve dialog box
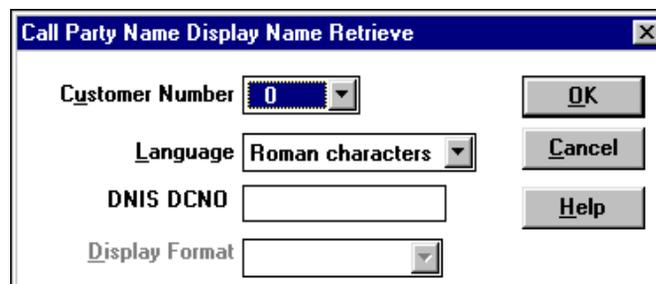
The CPND Retrieve dialog contains the following data entry fields:

**Customer Number**: A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

**Language**: A single-line drop-down text box with a list of languages defined for the open system. The text box contains the currently selected item.

**DNIS DCNO**: A text box in which you can enter the DNIS IDC table number and DNIS IDC for this group of CPND entries.

**Display Format**: A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

When you click **OK**, you are prompted to set up the communications task.

### Selecting data to retrieve

You can select items in the Station list or CPND list window that you want to download from the Meridian 1 or Succession CSE 1000 system. See "Global Update" on page 420. Meridian 1 or Succession CSE 1000 system data overwrites the data currently stored in the OTM data base for the selected items. When you choose Synchronize - Retrieve - Selected, you are prompted to set up the communications task.

### Retrieve Since option

In the Station Administration module, choose Synchronize > Retrieve > Since to display the Retrieve Since dialog box (Figure 214).

**Figure 214** Station Retrieve Since dialog box



In addition to the Customer field from the Station Retrieve All dialog box, this dialog box contains a new field:

**Date**: This text box contains the date in the format *MM*/*DD*/*YY*, where *MM* is the two digit month in the range 01-12, *DD* is the two digit day in the range 01-31, and *YY* is the two-digit year.

When you click OK, you are prompted to set up the communications task. The task retrieves all data that has changed since the specified date.

> **Note:** During the Synchronization Retrieval operation, OTM requests a print of the information on the system through the SDI port. OTM attempts to distinguish relevant data from other messages that might also be passed through the same port. Examples include traffic and maintenance messages. You might find that it helps the accuracy of the OTM retrieval process to temporarily disable other uses of this port.

## Specifying data to retrieve

Advanced users can specify stations or CPND (Name or Administration) or Reserved Unit Type (RUT) data with a one-to-one correspondence of data in certain fields for retrieval.

> **Note:** When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

*Station Retrieve Specify*

Choose Synchronize > Retrieve > Specify option in the Station module to display the Station Retrieve Specify dialog box (Figure 215). Enter the data pertinent to those stations on the system that you want to download. By default, all fields in the dialog box are blank. All stations are downloaded if no data is specified.

**Figure 215** Station Retrieve Specify dialog



Criteria you can set for station selection include:

*Customer*

A drop-down text box with a list of the customer numbers defined for the current system. The text box contains the currently selected item.

*Type*

A drop-down text box with a list of the instrument types (telephones) available for the current system. The text box contains the currently selected item.

→ **Note:** Station Retrieval—Using Type = 2000

You can use this Meridian 1 feature to retrieve all 2000 type sets from the Meridian 1 system. In the Retrieve Specify dialog, move to the Type box. You can type 2000, although it does not appear in the list box. OTM will correctly respond to the Type prompt during retrieval.

*Terminal Number*

Enter a TN or partial TN to retrieve only those stations attached to the part of the Terminal Number entered.

*Card Density*

This text box allows you to enter the card type. The card type value is associated with the terminal number.

*Designator*

Enter a designator value in this field to retrieve all stations with this Designator.

*Tenant*

Enter a Tenant value in this field to retrieve all of that Tenant's stations.

*Date*

This field accepts a date in the format *MM*/*DD*/*YY*, where *MM* is the month in the range 01-12, *DD* is the day in the range 01-31, and *YY* is the two-digit year. This retrieves all stations modified after the specified date.

→ **Note:** If you request a retrieval from a large Meridian 1 system, using Specify and the Type, it could spend a long time selecting the appropriate stations. If the time-out period (set in system properties) is not long enough, OTM will determine that no more information is being sent by the Meridian 1 and halt the retrieval.

The number of stations retrieved is stated in the Retrieval Log. The time-out parameter can be lengthened to give the Meridian 1 sufficient time to find the appropriate stations to transmit. However, a long time-out period also lengthens the time required by OTM to correctly identify that the Meridian 1 has no more information to send. You need to be patient if you extend the time out period beyond the default values.

→ **Note:** OTM is able to retrieve selected stations. You can also retrieve all stations, or choose Synchronize - Retrieve - Specify, using a partial TN.

*CPND Name Retrieve Specify*

If you want to define the CPND name data for downloading, choose Retrieve - Specify in the CPND Name view window to display the CPND Name Retrieve dialog box (Figure 216).

**Figure 216**   CPND Name Retrieve dialog box



> **Note:** CPND Name Retrieval—Synchronization prompt
>
> When retrieving CPND names from the Meridian 1 or Succession CSE 1000 system (using LD 95), OTM prompts you for additional information necessary for retrieval. The additional information differs depending on the release of the software on the Meridian 1 or Succession CSE 1000 system.

**Display Format**: before Release 19 of the Meridian 1, the Display Format was required for name retrieval. Beginning with Release 19, Display Format can be part of each CPND entry. Therefore, for Meridian 1 systems previous to Release 19, you are prompted for Display Format during name retrieval. For Meridian 1 systems beginning with Release 19 and for Succession CSE 1000 systems, you are prompted for Display Format only if OTM does not find a valid Display Format. If OTM does not prompt for the Display Format, the applicable format is displayed, but not enabled for modification.

The criteria you can set for CPND name selection include the following:

### Customer Number

A single-line drop-down text box with a list of the customer numbers defined for the open system. The text box contains the currently selected item.

### Language

A single-line drop-down text box with a list of languages you can use for the display. The text box contains the currently selected item.

### Entry Type

A selection field containing three radio buttons for the type of entry for this station. The choices include:

**Directory Number**: required to enter Directory Number

**Dial Intercom Group**: required to enter Group and Member, separated by a space

**DNIS DCNO**: required to enter DNIS IDC table number and DNIS IDC

### Directory Number

A numeric field that accepts up to 9 digits that represents the DN for this station. You can double click this field to display the list of currently assigned numbers in the numbering plan for the open system. You can select the number for this station in the Directory Numbers dialog. This is described in "Directory Number assignment" on page 351.

### Display Format

A single-line drop-down text box with a list of the CPND name display formats defined for the open system. The text box contains the currently selected item.

When you click OK, you are prompted to set up the communications task.

> ➡️ **Note:** When you retrieve Station Data, CPND names are also retrieved, and the Station View is updated accordingly.

## Synchronization status and retrieval

If OTM performs a retrieval, including station and CPND name, the Synchronization Status determines whether the OTM data is updated. In all cases, the Retrieval log contains a record of the retrieval and the results of any comparisons with an existing Meridian 1 or Succession CSE 1000 system.

- **NEW**: The data for this station should not exist on the Meridian 1 or Succession CSE 1000 system and the station will not be updated.
- **TRN**: The data for this station in OTM should agree with the data in the Meridian 1 or Succession CSE 1000 system. The OTM data is updated to reflect the current configuration on the Meridian 1 or Succession CSE 1000 system.
- **CHG, RPL:** The data for this station has been changed since the last time OTM and the Meridian 1 or Succession CSE 1000 system have been synchronized. The station is not updated.
- **OUT:** The OTM user has marked this station for deletion, the current configuration of the station on the Meridian 1 or Succession CSE 1000 system is not relevant and therefore OTM is not updated.
- **CUR:** The data for this station in OTM should agree with the data in the Meridian 1 or Succession CSE 1000 system.
- **SWP:** The data for this station has been changed since the last time OTM and the Meridian 1 or Succession CSE 1000 system have been synchronized. The station is not updated.

### Current Record

When you select a CPND record for editing (a record with a sync status of TRN, CHG or RPL), Station Administration will copy the record and save the copy in the database with a Sync Status of CUR. The TRN status then changes to CHG. The CUR record contains the original station configuration and can be used as a backup.

If you change a record's status from CHG or RPL to TRN, NEW or OUT, the associated CUR record is deleted.

If you double-click on the CPND name but do not make any changes, the CUR record is deleted.

The CUR record can be viewed but not modified or updated. To restore the original station configuration, select one or a multiple of CUR records, and choose Restore from the Edit menu. When the CUR record is restored, the CHG record is deleted (if one exists) and the record status changes to TRN.

The CUR record is primarily used for Web-based Station Administration, where the interface must show the current configuration of the switch, as opposed to a configuration with information pending.

### CUR Record and Global Update

A record with a CUR status will not change to another state (CHG, RPL, OUT, NEW, TRN) and a record with another status will not change to CUR following a Global Update of the database.

### Generating Reports

When you select a form file to run a report, you are presented with check boxes for each of the Sync statuses. Check the box to include records with the corresponding status in the subsequent report.

### List Manager and Corporate Directory

List Manager and Corporate Directory allow you to associate a set of stations to a list, and generate customized directory reports. Neither application includes CUR records in reports or lists.

### Forms Interface

When using the Forms interface to view a CUR record, the OK button in the Update dialog is disabled, as CUR records cannot be modified.

## Upload

This task updates the Meridian 1 or Succession CSE 1000 system data block with selected data from the OTM data base. You can select data items in the current list window (Station or CPND).

When you choose Synchronize - Transmit in the Station or CPND module, a submenu allows you to select criteria for uploading data to the Meridian 1 or Succession CSE 1000 system. The submenu contains the following items:

**Selected**: Upload only selected items in the current list of CPND or stations.

**Log**: View or clear a log of communications activity.

### Selecting data to transmit

You can select items in the Station list or CPND list window to upload to the Meridian 1 or Succession CSE 1000 system (refer to "Global Update" on page 420). The OTM data overwrites the data currently residing in the Meridian 1 or Succession CSE 1000 system for the selected items. When you choose Synchronize - Transmit - Selected, you are prompted to set up the communications task.

## Communications logs

All communications activity is recorded in log files that are stored in the current working directory of your OTM administration modules. There are five separate log files. The names follow normal PC conventions, as follows:

- **RTRSTN.LOG**: Station data retrieve
- **TRNSTN.LOG**: Station data transmit
- **RTRNAME.LOG**: CPND data retrieve
- **TRNNAME.LOG**: CPND data transmit
- **OVL81RTR.LOG**: Reconcile data transmit noting deleted sets information

Each of these logs is accessed from the Log menu in the appropriate module's Synchronization - Transmit or Receive menu.

When you choose Log, a submenu provides the following items:

**View**: Sends the log file to the viewer so you can browse or print the log. Log activity is appended to the end of the file, so the most recent activity is at the bottom of the viewer. See "The OTM file Viewer" on page 466.

**Clear**: Clears the log file. You should do this occasionally so that the file does not get too large.

> **Note:** There is no limit to the size of the log files, but there is a limit to the size of log files that the viewer can handle. There is a 100-page limit on log files for viewing from Synchronize - Log - View.

> **Note:** During station retrieval, you should limit the amount of activity in other Windows tasks. During long station retrievals, or if there is sufficient activity in other Windows processes, the capacity of the communications buffer can be exceeded. This condition terminates the retrieval process to prevent erroneous data from being entered into the station data base.
>
> You might notice that the Log window minimizes itself to prevent this occurrence. As the communications buffer starts to fill excessively, the Log window is minimized to allow faster processing of the incoming data. You should wait momentarily and restore the Log window to check the progress of the retrieval.
>
> The Log window will remain on the screen longer if you resize it to contain fewer lines. Similarly, you should minimize the amount of window resizing and moving during station retrieval, since these activities momentarily prevent retrieval activity from processing the incoming characters.
>
> If the capacity of the communications buffer is exceeded, necessary data is lost to OTM. OTM displays a message and terminates the station retrieval process. You will notice that the stations were not added to the OTM PC data base.
>
> You can repeat the retrieval to add the new station data. Alternatively, you can choose Synchronization - Parse Only to add the downloaded data to the OTM PC data base, and continue the retrieval process from where it stopped. It is possible to retrieve a portion of the stations on the system by choosing Station Retrieve - Specify.

## Viewing large log files

There is currently a 100-page limit on the size of log files and reports that can be displayed on the screen. This limit affects Synchronization - View - Log and Reports menu items. A message appears to warn you that the file is too large to be viewed in its entirety, and only the first 100 pages are displayed.

You can avoid this limit by:

- Periodically using Synchronization Log - Clear to prevent text from old retrievals or transmissions from unnecessarily adding to the size of the log file.

- Testing large reports on a portion of the data, using the Filter feature in the Report Form menu. For example, you can limit the report to the first 200 records by opening the report form and selecting the Options - Report Filter. To limit the number of records, click the System Fields button, select the REC_COUNT field and build the expression SYS->REC_COUNT <= 200. If a Report Filter already exists, this clause can be added using the .AND. operator.

- Viewing large files with another program. Please note that these files are too large to be viewed using the Windows Notepad.

## Transmission errors during retrieval

You should inspect the Retrieval Log after performing a synchronization. This log reports the number of stations added, the number of stations compared, and the number of stations with discrepancies from that comparison. In addition, the Retrieval Log might contain warnings from unrecognized data during the transmission. The unrecognized data might be the result of transmission problems.

Compare the expected number of stations to be retrieved to the number of stations actually retrieved. If too few stations were retrieved, look for warnings in the log file that indicate that not enough data was correctly received to recognize the station.

You should also note the number of compared stations. The first retrieval into the OTM PC data base should only be adding stations. If any stations were compared, it might indicate a transmission error in the TN field that caused OTM to treat this station as an update to an existing station, instead of creating a new station.

## Reconcile TN feature

This tool corrects synchronization problems that may arise when changes are made to station data outside of OTM. These changes may include Set Removal, Set Relocation done through a TTY using Overlays 10 or 11. The switch data base is changed but the OTM data base on the local PC is left unchanged.

OTM users launch the Reconcile TN feature from the Synchronize menu in the Station Administration window. OTM compares the listed sets information with information in the OTM data base against the switch data base to determine which TNs are valid. Invalid TNs are removed from OTM. All removed TNs are noted in a log file viewable by selecting Synchronize > Reconcile > Log > View (Figure 217).

**Figure 217**   Viewing the log file
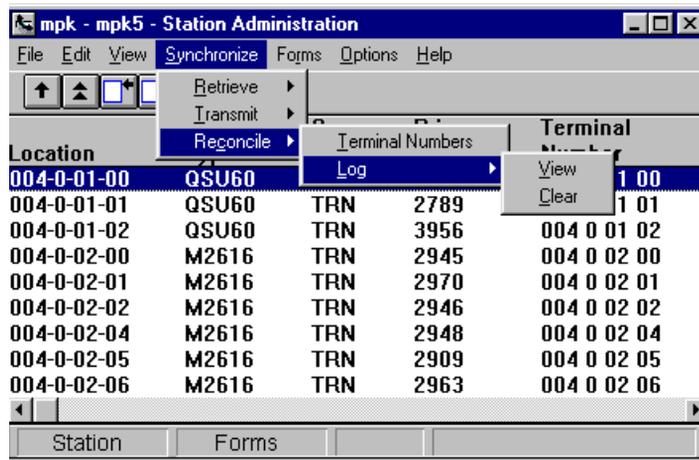


> **Note:** The Reconcile TN feature requires some time to complete its function and can degrade system performance. Do this task when switch traffic is low or after hours to minimize the effect on the system's performance. User should back up the existing data base before starting this function.

# Conversion utility

## Overview

The OTM Conversion utility provides two functions:

- Rebuild of station data to the current OTM file structure. You might need to run this conversion if you have copied system data to your current release directories that was built in an earlier release.

• Import of station data from other applications.

# Starting the Conversion utility

When you choose File - Conversion utility in the Station Administration module, the OTM Conversion utility window opens.

**Figure 218**   Conversion utility window
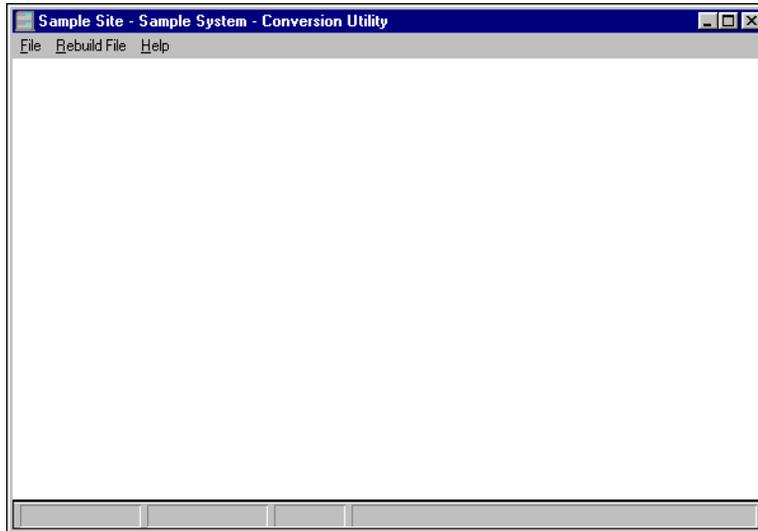


The window initially contains no data in the workspace. The menu bar contains the following drop-down menus:

• File
• Rebuild File
• Help

You can select the desired menu using the mouse (click) or keyboard (Alt+ underlined character) in the normal way.

## File menu

The File menu provides the following functions:

**Import:** Lets you insert station data from another data base into the current system.

**Close:** Quits the Conversion utility.

## Rebuild File menu

OTM administration can change the file structure of certain files. This can cause file errors during system maintenance. The Rebuild Files menu lets you check the individual files of system data and convert them to conform with the current file structure being used by OTM, if necessary:

**All Systems:** This option automatically searches the PC system for OTM systems and transforms selected files, if necessary.

**Auto:** This option automatically checks and transforms all files for each system, if necessary.

**Select Files:** This option lets you select OTM data files that will be checked for all systems, and transformed, if necessary.

**Current System:** This option checks selected files of the current system and transforms them if necessary:

**Auto:** This option automatically checks and transforms all files for the current system, if necessary.

**Select Files:** This option lets you select OTM data files that will be checked and transformed for the current system.

## Help menu

The Help menu provides on-line help for the Conversion utility.

# Rebuilding files

The OTM administrator can modify the file structure used in OTM. This can result in File Errors during OTM processing. When this occurs, you can use the Conversion utility to rebuild the files, making their structure correspond with the current OTM file structure. In practice, the Conversion utility would check the structure of selected files and rebuild only if necessary.

## Accessing the files

To access the OTM data files for the Rebuild option, choose Rebuild File - All Systems or Rebuild File - Current System. Each option displays a cascading secondary menu that lets you choose to automatically detect files that require rebuilding or to manually select files for rebuild.

If you choose to select files, a Select Files dialog is displayed. This dialog contains a multi-selection list of files that comprise the OTM data. Selected files are indicated by highlight bars. Use the Windows vertical scroll bar to browse the entire list of files. Mouse click an item to toggle its selection status.

Click OK in the Select File dialog to start the rebuilding task for the selected files of all systems or the current systems as required.

## Monitor rebuilding files

The Conversion utility checks all the selected files in each system and rebuilds all files it finds that require rebuilding. During this task, a status dialog is displayed that informs you of the progress of the task.

Upon completion, a status of Success is displayed. At any time you can click Cancel in the Status dialog to halt the rebuilding task. This might result in some files not being rebuilt. Another attempt at Rebuilding Files would now complete the task.

# Importing station data

Station data is stored in accordance with the file structure and data base rules defined in the OTM application. The Conversion utility provides a merge function (Import) that lets you update station data, and add new stations, from a data source other than a Meridian 1 or Succession CSE 1000 system (data defined in DBASE or CPLUS, for example).

Note that the merge function uses the DN as the key so that any imported data must include a DN field. Also note that, if the supplied DN is not currently used in the open system, the record will not be added unless a valid unique Location field (LOC) value is supplied. This means that to create a new record you must supply both a currently unused DN and a unique Location.

Data for import must have a Fields Definition file (default but not limited to files with.FLD extension) as well as a comma delimited data file (default but not limited to files with .TXT extension). The field file will identify which items in the data file belong to which OTM fields.

Note that the Fields Definition file must have the exact field names as defined in OTM. These can be found in the Select Data Field dialog in the Global Update function. The fields will be in the order in which the data is listed in the data file.

## Considerations when merging key values and features

If you want to add or modify features for a particular record you must identify a "FTR" field for each feature being modified. The values must be as identified in the Features dialog when accessing multi-line telephone sets in the Meridian 1 or Succession CSE 1000 system. For example, Call Forward, when the forward DN is a four-digit number, would be CFW 4 in the Meridian 1 or Succession CSE 1000 system.

If you want to add or modify key functions to a single line telephone, you must identify the key as KEY n, where n is the key number (include the space). If the value represents a Single Call Ringing key, then the field entry would be SCR nnnn, where "nnnn" is the selected DN.

### Select a data file

To select data to import, choose File - Import in the Conversion utility to display the Select an Import Text File dialog. The Text File Selection dialog lets you select the location and file name of the desired data file. By default, the dialog tries to locate files with .TXT extension, but you can actually use any extension in the File Name text box.

Click OK in this dialog to accept the data file name selection and display the Field File Selection dialog.

### Select a field file

Click OK in the Select an Import Text File dialog to display the Select an Import Field File dialog. The Field File Selection dialog lets you select the location and file name of the desired field definition file. By default, the dialog tries to locate files with .FLD extension, but you can actually use any extension in the File Name text box.

Click OK in this dialog to initiate the merge function.

### Perform the merge

When you have completed selection of the data and field files for merging to the current system data, click OK in the Select an Import Field File dialog to initiate the merge function and display a progress status message box that has a percent completion bar. This dialog has a Cancel button that will stop the merge before completion. When the progress bar indicates 100%, the Cancel button changes to OK. Click OK to return to the Conversion utility window.

The data is now part of the system and is available through the Station Administration module.

### Example of import data

A typical import file might contain the following data:

- "3452", "Robert", "Williams", "Accounting"
- "3497", "Marie", "Astor", "Marketing"

- "8732", "Lee", "Smith", "Accounting"
- "8743", "Arthur", "McKinley", "Facilities"
- "3469", "Mary", "Owens", "Marketing"

where each record has four fields which would be defined in a separate file, as follows:

- DN
- FNAME
- LNAME
- DEPT

Note that the merge function uses the DN as the key so that any imported data must include a DN field. Also note that, if the supplied DN is not currently used in the system, the record will not be added unless a valid unique Location field (LOC) is supplied.

# Generating reports

## Overview

The Report Generator module lets you create, view, print, and change custom reports. Access the Report Generator module by choosing File - Reports in the CPND and Station Administration modules.

OTM supplies several standard report forms for reporting OTM data. In addition, the Reports Generator module contains a form editor that lets you create custom report forms or edit existing forms. It also contains a viewer that lets you print reports or browse reports on the screen. A report executor lets you run the reports to the viewer for screen display, to a file, or to a printer. Custom selectable criteria allow you to tailor the report listing.

*Reports considerations*

All report activity is performed in the current working directory—the system subdirectory. All forms are stored in this directory with a ".FRM" extension. Exported reports are also saved in this directory and are automatically given a ".TXT" extension. This means that you need supply only the filename (up to eight characters) when prompted to save a report to a file.

The OTM Report Generator requires that a printer be configured in the Windows software environment, although it is not necessary for the PC running OTM to be equipped with a printer.

# Starting the Reports function

Choose File > Reports > Report Generator in the Station or CPND module to display the OTM Report Generation window (Figure 219).

**Figure 219** Report Generation window
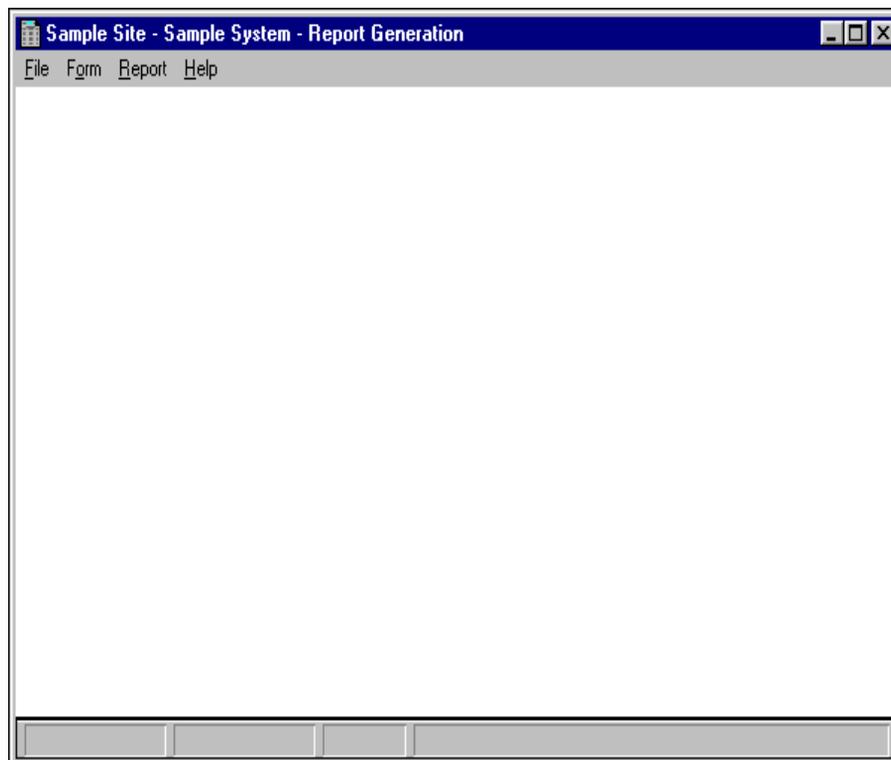
There is no data in the work area when the window is first displayed. The window contains a menu bar with drop-down menus that let you perform global actions within the Report Generator:

- File Menu
- Form Menu
- Report Menu
- Help Menu

### File menu

The only function available from this menu is the following:

**Close:** Closes the Report Generator.

### Forms menu

This menu lets you choose a current report form or create a new form.

**New Report Format...:** Lets you design a new form for a report.

**Open Existing Report Format...:** Lets you open a predefined form for the selected data in the system.

### Reports menu

This menu allows access to the report executor.

**Run Report...:** Displays a dialog that lets you access a report form that you can run (to the screen, to a printer, or to a file).

## Running reports

Running a report involves selecting a report to run and selecting a destination for the report. Selection criteria for the records you wish to choose are contained within the report form. If you desire different criteria, you can edit the form or create a new one. See "Report criteria" on page 489. You can send a report to a viewer for screen display, to a file, or to a printer.

## Select a report

Select a report to run by choosing Report > Run Report in the Report Generator. The Select a Form File dialog box opens with a single-choice scrollable list of report forms on your system (Figure 220).

**Figure 220** Select a Form File dialog box
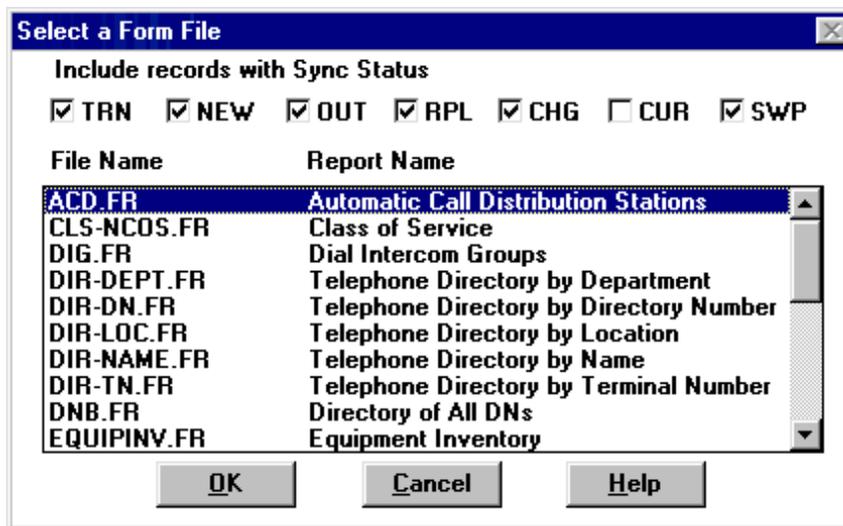


Some reports in the list may be reports you have defined or modified for your needs. Default reports supplied with OTM include:

- Automatic Call Distribution Stations
- Class of Service
- Dial Intercom Group
- Telephone Directory by Department
- Telephone Directory by Directory Number
- Telephone Directory by Location
- Telephone Directory by Name
- Telephone Directory by Terminal Number
- Directory of All DNs
- Equipment Inventory
- Hunt Patterns

- Key Assignments
- Message Centers
- CPND Name by Directory Number
- CPND Name by Name
- CPND Name by Location
- CPND Name by Synchronization Status
- Telephone Directory (Phone Book)
- Private Line
- List of Power Failure Phones
- Ringing Number Pickup Group
- Speed Call Groups
- System Speed Call Groups
- Used DNs

The currently selected form is highlighted. Select a form and click OK to run a report using the currently selected form.

## Select a destination

When you have selected a form and have chosen Report > Run Report, an Output Device dialog box provides a list of possible destinations for the report .

**Figure 221**   Output Device dialog
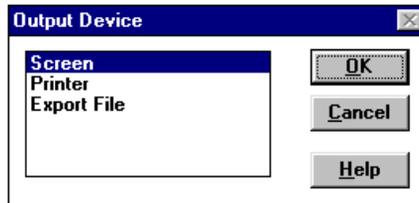


The dialog box displays a list of destinations for the report.

- Screen
- Printer
- Export File

Select a destination and click OK to run the selected report.

## View report

If you select Screen for the report destination, a viewer appears with the report in the work area (Figure 222).

The Viewer has the following menus:

**File:** lets you display a report summary, print the report, or exit the viewer.

**Search:** lets you find text contained in the report.

**Help:** lets you access on-line help for the viewer.

You can print the report from the viewer to the printer defined in the report form, or to a printer you choose from the Viewer. You can also save the report to a file selected from the Viewer.

**Figure 222**   Example Report in the Viewer

```
C:\Nortel\COMMON~2\CLS-NCOS.FR                                          _ □ ×
File  Search  Help

                              Class of Service                     Page 1
                                 04/20/01

DN       CLS   NCOS  Location        TN            Name
2000     CTD   00    SC9-1           004 0 08 00   SHREENIVAS, SRIKANTH
2002     CTD   00    SC9-3           004 0 08 04   LEONG, TIMOTHY
2003     CTD   00    SC9-4           004 0 08 03   CARR, BRIAN
2005     CTD   00    SC9-13          013 0 01 00   TOMKORIA, BIKAS
4000     CTD   00    SC9-6           004 0 02 00   WANG, VINCENT
4000     CTD   00    SC9-PORT1                     , Tech Trial
4000     CTD   00    mpk7            004 0 08 05   EPPLETT, DIGBY
4001     CTD   00    SC9-7           004 0 03 00   JAKATI, UDAY
4001     CTD   00    SC9-PORT2                     TROUNG, HUNG
4002     CTD   00    SC9-10          004 0 06 00   GOLANI, GURUDITTA
4003     CTD   00    SC9-11          004 0 09 00   SHU, WENSHAN
4004     CTD   00    SC9-12          012 0 02 00   CHAN, LAURENCE
4005     CTD   00    SC9-8           004 0 04 00   PONNAPPAN, SENTHILKUMAR
4006     CTD   00    SC9-9           004 0 05 00   P, ILAVAJUTHY
4007     CTD   00    SC9-14          012 0 04 00   LEE, ANTHONY
4008     CTD   00    SC9-15          012 0 03 00   NGUYEN, HO
4013     CTD   00    012-0-10-00     012 0 10 00   EPPLETT, DIGBY
4015     CTD   00    SC9-Ph3         014 0 01 02   TRAN, DUONG
5501     CTD   00    SC9-ACDSUP      012 0 05 00   EPPLETT, DIGBY
5512     CTD   00    SC9-ACDAGNT     012 0 06 00   EPPLETT, DIGBY
7000     CTD   9     004-0-01-00     004 0 01 00   TRIAL T1 3901, TEK
7001     CTD   00    SC9-2           004 0 08 01   HONG, RYAN
7002     CTD   00    004-0-08-06     004 0 08 06   VAN-DER, KAREL
7006     CTD   00    SC9-5           004 0 08 02   PANG, SAM
7015     CTD   00    SC9-Ph2         014 0 01 03   EPPLETT, DIGBY
7407     CTD   9     004-0-01-09     004 0 01 09   COLDIRON, DALE
7408     CTD   9     004-0-01-02     004 0 01 02   , OTM Verification

                          File manipulation menus
```

## Print report

If you selected Printer for the report destination, the OTM Report Generator uses
the Windows print function to direct the report to its default printer. The default
printer for the report is identified in the form when it is created or edited. If you
want to check or change the printer destination or setup you must do this from the
Form editor before you run the report. Alternately, you can send the report to the
screen and print from the viewer.

During printing, a Printing status box is displayed. You can stop the print job by clicking the Cancel button. A Report Viewer status box alerts you when the job is finished. Click OK to return to the Report Generator.

## Export report

If you chose Export File for the report destination, the report output can be saved in a comma-delimited ASCII file. Export File displays a dialog box that lets you choose a name for the report file (Figure 223).

**Figure 223**   Export File Name dialog box
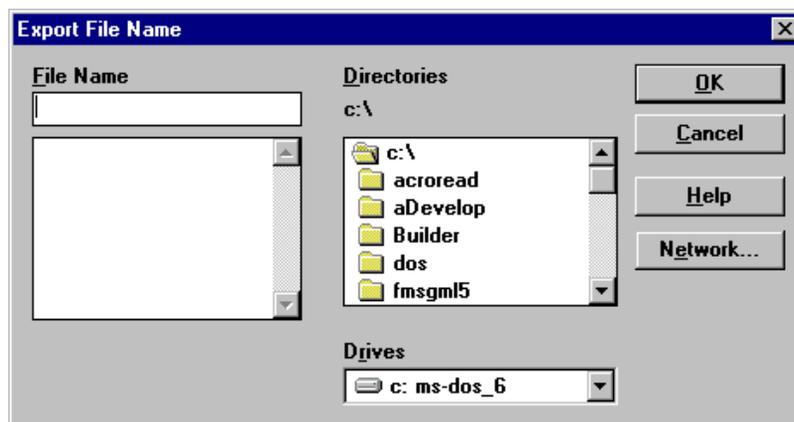


You can enter a file name up to eight characters. Click OK to send the report to the Viewer. See "View report" on page 464 for more information. Filename.TXT, a comma-delimited text file with the Filename as entered in the text box, is saved to the current PC directory.

# The OTM file Viewer

## Overview

The Viewer lets you browse, print, and save OTM files accessed during Station Administration tasks. You cannot access the Viewer as a separate module. It is invoked when you attempt to print or display files created during OTM data base administration. The files that can be viewed include:

- Reports
- Designation Strips
- Station Validation Log
- Communication Logs
- Station and CPND Administration list views

# Viewing a file

When the File Viewer starts, the scrolling Viewer window contains the data from a file created during OTM data base administration (Figure 224). The Viewer does not allow editing, so the viewed data is in a fixed format.

You can browse and print the data using the menus, as follows:

### Viewer File menu

The File menu lets you display a file summary, save the file to a selected directory, print the file, or exit the viewer.

**Save as:** Lets you save the displayed data as a text file to your PC system.

**Summary:** Displays a file summary of the displayed data.

**Figure 224** File Viewer window

```
TMP2.$$$                                                                    _ □ X
File  Search  Help

                             OTM Administration Tool           Page      1
                                Station Administration
                                       Station

        Location: 004-0-06-13                    Name: DALE COLDIRON
      Instrument: M3903                    Department: ORG
 Customer Number: 0                       Sync Status: CHG
           Color:                            Category: Regular
  Equipment Cost:                            Division:
         Cost ID:                     Billing Auth Code:
         Comment:

 TN    004 0 06 13    User Field 0:                  User Field 5:
 CDEN 8D              User Field 1:                  User Field 6:
 DES   3104           User Field 2:                  User Field 7:
 FDN   4500           User Field 3:                  User Field 8:
 TGAR 1               User Field 4:                  User Field 9:
 LDN   NO
 NCOS 9
 RNPG 0000
 SCI   0
 SSU
 XLST
 ZONE 000

                             OTM Administration Tool           Page      2
                                Station Administration
                                       Station

 CLS   CTD FBD WTA LPR PUA MTD FNA HTA ADD AGN SWD MWA AAD DOS XHD IRD
       CCSD NID OLD VCE DRG1 POD HFD TENA LNA CNDA CFTD SFD ICDD PRMD
       PCWD PHTD LLCN MCTD MRD DDV CNID DNDD DPUD GPUD CFXA ARHD CLTD
       CPFA CPTA ABDD AHD ASCD AUTU CCBD CDMD CFHD DDGA DNAA EXR0 FICD
       HBTD HSPD IPND MIND NAID NAMA NRCD NROD NRWD OCBD RCC UDI ULAD
```

**Print:** Sends the file to the default printer (the printer is normally the default printer as defined in Windows). However, for reports, the printer is defined in the form.

**Printer Setup:** Allows you to select a print destination and set printer options.

**Close:** This option closes the Viewer and returns to the window that invoked it.

## Viewer Search menu

The Search menu lets you find a text string that might be contained in the displayed data.

**Find:** Lets you define a text string to find. The Find function is not case sensitive.

**Find Again:** Lets you find the next occurrence of the currently defined string. This option is dimmed until you have searched for a string.

# Changing viewed data

The data displayed in the viewer is in a fixed format, defined in OTM, for the file being viewed.

## Browsing the file

The OTM Viewer is a line viewer with the current line highlighted. You can use the arrow keys or <Page Up> and <Page Down> to move the highlight one line or one screen at a time. You can also use the Windows vertical scroll bars to scroll the report, moving the highlight bar as you scroll. The Windows horizontal scroll bar lets you browse entire lines when the lines are too long for the window.

Use the Search menu to find selected text. A successful Find highlights the line containing the search text.

## Save As

The file is displayed in the Viewer with a default file name in the title bar. You can save the data as an ASCII text file. Choose File > Save As to save the current file with a different name or location.

### *Select a file name*

The Save As dialog box (Figure 225) is the standard window used to specify the file name and file location (for a full description of this dialog box, refer to your Windows documentation). The dialog box contains a scrollable drop-down list of disks that your PC can access. Select a disk to display the list of directories on the disk in a scrollable Directories list field. Select a directory to display a scrollable list of files in that directory. Select an item from the File Name list or type in a file name.

**Figure 225** Save As dialog box
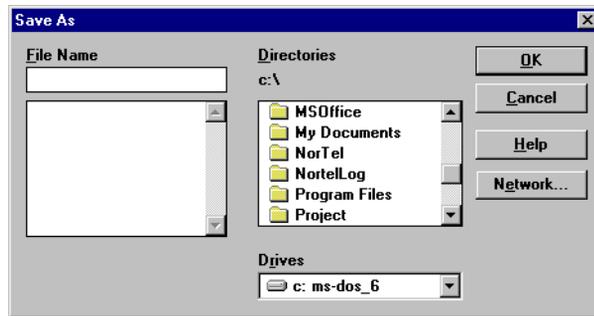


At any time, click Cancel to return to the Viewer without saving the file. Click OK to save the file with the specified file name.

The saved file uses the current default Windows font for character formatting. Any character formatting in the original file (from a Report, for example) is not saved.

## Display a file summary

Choose File > Summary to display a File Summary status box (Figure 226).

**Figure 226** File Summary status box
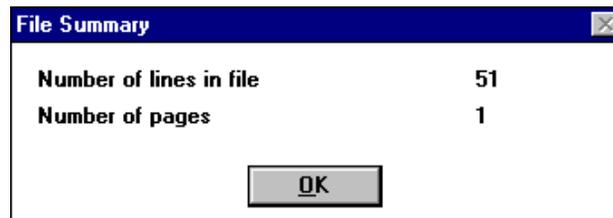


This summary gives the number of lines for a text file (or number of records for a data base report file) and the number of pages in the file. Click OK in the status box to return to the Viewer.

## Print from the Viewer

You can print the file (exactly as displayed) to a default printer directly or you can select another printer for the task. Choose File - Print to print the contents of the Viewer to one of the following destinations:

- If the Viewer is displaying a report, the print destination is the destination defined in the report. If your PC cannot find this printer, OTM displays a status message. Click OK in the Status message box to return to the Viewer.
- If no printer is defined in the file being viewed, the print destination is the current printer defined in Windows. This can be the Windows default or a printer selected in the File - Print Setup option of the Viewer.

A progress status message is displayed while the file is printing (or sent to a print spool if applicable). Click Cancel in the Status box to stop printing. When the task is complete, OTM returns to the Viewer window.

### Search the file

Choose Search > Find to display a dialog box that lets you enter text you wish to find (Figure 227). If Find Again is available, the dialog contains the previous search data.

**Figure 227**   Find Text dialog box
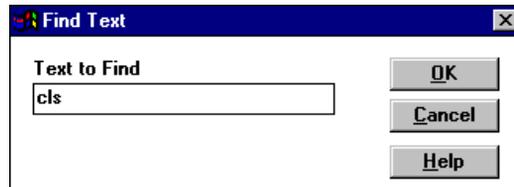


Click OK to accept the data in the dialog box and proceed with the search. Click Cancel to return to the Viewer window. Click Help to display on-line help for this dialog box.

The text box accepts any input. The find function is not case sensitive.

The Viewer highlights the line containing the first occurrence of the text that you specified in the Find Text dialog box. The Find function always starts at the top of the report, regardless of the current cursor position.

When the first search is complete, Search > Find Again is available. If you choose this item, the highlight bar moves to the next occurrence of the text. You can repeat this until a status message indicates that are no more occurrences. Click OK in this status box to return to the Viewer.

When you finish searching, click Cancel to return to the Viewer.

## Printer setup

To define the printer destination and setup from the Viewer, choose File > Print Setup. The Printer Selection dialog box opens .

**Figure 228**   Printer Selection dialog box
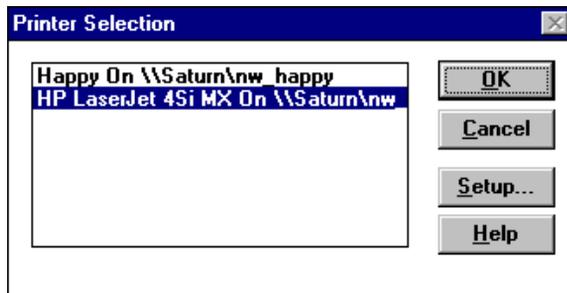


The Printer Selection dialog box contains a scrollable list of printers accessible to your PC. Click OK to accept the selected printer and return to the Viewer window. Click Cancel to return to the Viewer window. Click Help to display on-line help for this dialog.

The Setup button opens the standard Windows printer setup dialog for the currently selected printer. Refer to your Windows documentation for information on Print Setup.

Click Cancel in the Print Selection dialog to return to the Viewer without changing the Print setup. Select a printer and click OK to set the selected printer as the Viewer default and return to the Viewer. This new printer destination is only valid for this viewer session. The report form still retains the original print setup.

## Exit the Viewer

Choose File > Close to close the Viewer and return to the Report Generation window.

# Designing report forms

## Overview

The OTM application includes several pre-designed forms you can use to run the most common reports. OTM also includes a Report Generator module that includes a Forms editor. The editor lets you modify existing forms or create your own forms for customized reports.

The Forms editor lets you generate a customized layout for a report by piecing together predefined report sections.

## Form section concepts

The Report Generator organizes a report by sections. A report form can contain one or more sections:

- Report Header
- Page Header
- Sort Header(s)
- Detail Section
- Page Footer
- Sort Footer(s)
- Report Footer

Each of these sections is optional, but a form must contain at least one section and can have only one of each type. Each section allows an internal free layout of data. The only restriction is the position a section occupies on the report in relation to the other sections.

When you insert a new section in a form, it automatically positions itself correctly relative to other sections. This position is indicated in the Editor window by a line with the section title printed on it. This line is not part of the form, it merely serves as the top boundary of the section it indicates. The list above indicates the order in which the sections will appear in the form.

Arranging sections within a form is described in "Validating the data" on page 365.

# The Forms Editor

The Forms Editor is an application within the Report Generator that lets you design and customize a report using the current database.

Choose Form > New Report Format to display the Forms Editor, with a blank form in the working area. Choose Form > Open Existing Report Format to display a dialog that lets you select from a list of forms for the current system database (Figure 229).

**Figure 229**   Select a Form File dialog box
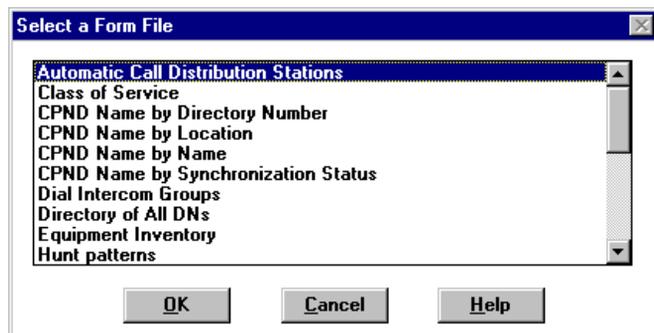


The currently selected form is highlighted. Select a form from the list and click OK to open the Forms Editor. The Forms Editor contains a menu of actions to perform.

## *File menu*

This menu contains commands for saving the current report file and specifying the report parameters.

**Select Report View:** Lets you select the key selection criteria that determine the content of the report at runtime.

**Save:** Store the current report form to a file. If it is a new form, you are prompted for a filename (up to eight characters followed by a period and an extension of up to three characters).

**Save As...:** Store the current report form to a file. Report form files must be stored in the common data directory. OTM will not allow changes to the path for these files.

**Printer Setup:** The Windows default printer is automatically assigned to the current form when you save it. This selection lets you select a different printer and printer configuration to be associated with the current form from a list of installed printers.

The printer options that you select here determine the width and height of the report. The width of the report is indicated by the length of the section separation lines in the form editor window.

**Exit:** Close the Forms Editor and return to the Report Generation window. If the current form has not been saved since the last change, you are prompted to save it before exiting the editor.

## *Edit menu*

This menu contains miscellaneous edit and cursor navigation functions:

**Insert Line After/Before:** Puts a blank line following/preceding the current cursor position.

**Delete Line:** Removes the current line, moving all successive lines up.

**Highlight Off:** Turns off any highlighting in the current form (lets you deselect text and fields).

**Beginning/End of Line:** Moves the cursor to the left/right end of the current line.

**Next/Previous Word:** Moves the cursor to the beginning of the next/previous word or field in the form, going to the next/previous line if necessary.

## *Section menu*

This menu contains commands to insert, edit, and delete report sections.

**New...:** Lets you add a section to the current form. Sections include:

- Report Header: Appears at the top of the report only
- Page Header: Appears at the top of each page of the report
- Detail Section: Defines data to be reported
- Page Footer: Appears at the bottom of each page of the report
- Sort *n* Header: The *n*th sort criterion field for the report (*n* = 1 - 9)
- Report Footer: Appears at the end of the report only

The section title is displayed at the current position of the selected section on the form. This line indicates the Forms Editor cursor location. It will not appear on the printed form.

**Edit Current...:** Lets you define the layout of the section in which the Forms Editor cursor is currently positioned. Displays a dialog containing check-boxes for defining section layout at runtime. Choices include:

- Start new page before this section
- Start new page after this section
- Do not include blank lines
- Suppress trailing (or leading) blanks in a field
- Titles on every page of the report

**Delete Current...:** Removes the section in which the cursor is currently positioned.

**Sort Field...:** Lets you change the current sort field selection. This selection is not available unless the form has sort fields defined (use the **Section New** function to insert sort fields).

**Break Field...:** In a typical report, the break field is the same as the sort field. This selection lets you define a field for a section break that is not a sort field.

*Field menu*

This menu contains options to insert, modify, delete, and maintain fields.

**Insert New Field:** Displays a submenu that lets you choose a field type for insertion into the form at the cursor position. Field types include:

- **Data Field**: Displays a list of data fields in a record of the system database

- **Calculation Field**: Displays a box for entering a formula for the field
- **System Field**: Displays a list of OTM system fields

**Edit Current Field...:** Lets you modify attributes for the current field.

**Edit Field Expression...:** If you have a calculated field at the cursor position, this selection lets you modify the formula.

## Options menu

This menu lets you define the appearance of the report and select data records for inclusion in the report.

**Report Parameters...:** Brings up a dialog that allows you to specify certain report parameters:

- Name of the report (This is not the Windows filename.)
- Margins for the printed page
- Output of some trial records for form layout adjustment
- Default date format for input and during execution

**Report Filter...:** This option allows you to enter a filter criteria for the report. Each data record is tested with the expression that you provide here. A record is selected only if this expression evaluates to a TRUE value. For example, if the expression was *DN->amount>1000*, then only records with a DN higher than 1000 are included in the report.

## Fonts menu

This menu contains formatting commands for highlighted characters (and field values) at runtime.

**Normal**: Removes character formatting, if any)

**Formatting**: Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, Strike.

**Fonts**: Lets you select font and size for highlighted characters and fields. The report generator allows only fixed space fonts. You should be careful that columnar text uses the same font size and spacing to maintain column alignment.

## Changing sections

Figure 230 shows an example of a blank form with all sections in place. The sections are divided by a line labeled with the section name. These lines are place indicators only and will not appear on the printed report.

**Figure 230**   Example blank report form
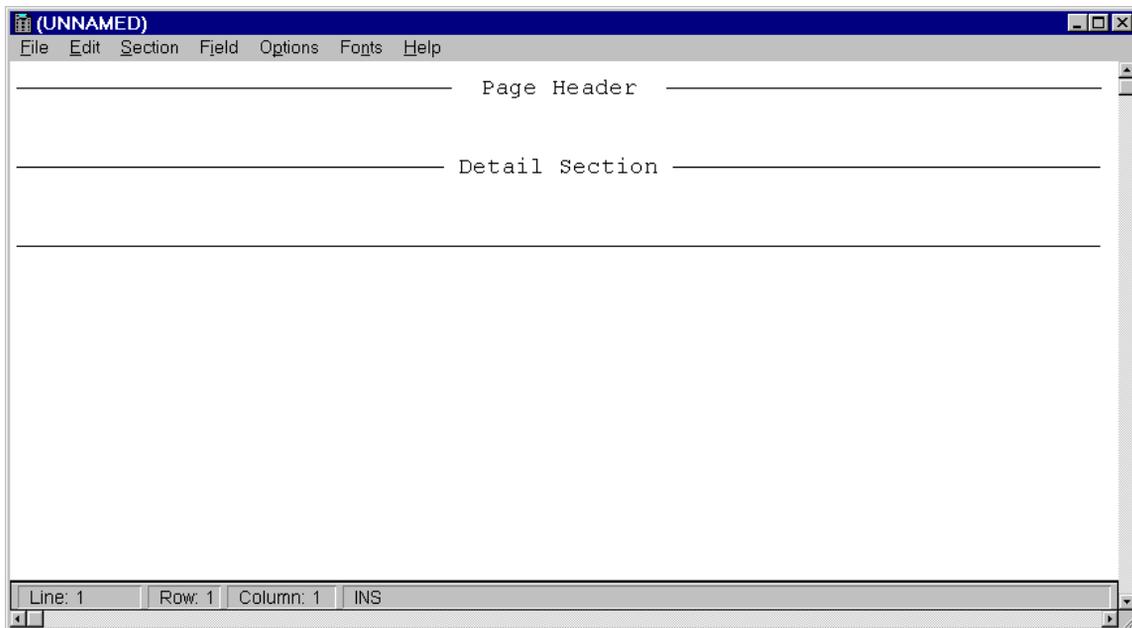


The **Section** menu lets you change the sections as described below.

### Insert a section

To insert a section in a form, choose Sections > New with the cursor anywhere in the Forms Editor window. The Select New Section dialog opens listing the available sections. Only the sections that do not appear in the form are presented (Figure 231).

**Figure 231** Select New Section dialog box
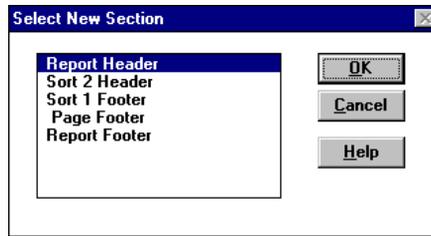


The currently selected Section is highlighted. Select a section and click OK to insert the section in the current form.

At insertion time, each section contains one blank line. Use the Edit > Insert Line After/Before functions to change the section size at any time while the cursor is in the work area of the section (below the section title line and above the next section title line).

### Define section parameters

You can set runtime parameters for the section at the current cursor position. Choose Section > Edit Current to display an Edit Section Info dialog box (Figure 232). This dialog box contains check-boxes that let you set or clear section parameters

**Figure 232** Edit Section Info dialog box
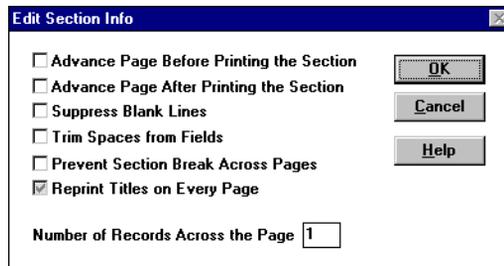


Select the appropriate check box to toggle parameter selection. The parameters include:

- Advance Page Before Printing the Section: The section is printed at the top of the next page.

- Advance Page After Printing the Section: Causes a printer Form Feed after this section.
- Suppress Blank Lines: Causes blank lines not to be printed.
- Trim Extra Spaces from Fields: If a field value is shorter than the field maximum length, this selection causes the field length to be truncated to the length of the value.

> → **Note:** If you are using a columnar format, this parameter might cause misalignment of columns.

### *Report Header / Footer*

These are printed only once, at the beginning/end of the report. The header is generally used as a title and description of the report. The footer might be used as a report summary. A report header and footer can contain free text and fields such as System Date and Time.

### *Page Header / Footer*

These are printed at the top/bottom of every page in the report (beneath the Report Header on the first page and above the report footer on the last page). The header might contain text such as Report title, column headers and any other pertinent text as well as fields such as System Page Number, Date, and so on. The footer might be used for page numbers and page by page field totals or other pertinent data or text.

### *Sort Header / Footer*

Each of these sections indicate a field that the report will use for a sort break. The field you choose is not printed. You can place text or fields or both text and fields at these section breaks to describe the sorts being used in the report.

### *Detail Header*

This section contains a list of data for each record of the database, selected and sorted according to defined criteria.

# Edit a form

Text and data are added at the current position of the cursor within the form. Move the cursor using the mouse or the keyboard arrow keys. The status line at the bottom of the window gives the cursor position by line (row) down and character (column) across. The **<Ins>** key toggles the insert/overtype mode. The status line indicates **INS** for insert mode (text moves everything to the right of the cursor to the right) or **OT** for overtype mode (text replaces existing text at the cursor position).

Type to insert text. There is no automatic line wrapping. If you insert a carriage return (**<Enter>**), the cursor is returned to the beginning of a new blank line.

You can use the **Edit** menu to move the cursor within a line, as follows:

- **Start of Line**: left end of line
- **End of Line**: right of the last character on the line
- **Next Word**: first letter of the word to the right of the cursor
- **Previous Word**: first letter of the word to the left of the cursor.

To insert and edit a field at the current cursor position, use the **Field** menu.

## Insert a field

Choose **Field - Insert New Field** to display a submenu with a list of data field types to paste at the current cursor location. This option is not available when the cursor is positioned on a section separation line or on an existing field.

The selected field appears at the current cursor location as a series of "x" symbols that represent the maximum number of characters in the field, as defined in the database. You can delete any number of field symbols to reduce the field length. To increase the field length, position the cursor on any field symbol except the first one, and type spaces. You can change the current field attributes by choosing **Field - Edit Current Field**.

### Insert a data field

A data field is one field in each record of the current database. If you choose **Field - Insert New Field - Data Field**, a list of data fields is displayed in a Select Data Field dialog. See "Selecting data items" on page 421 for further details.

Click **OK** to paste the selected field into the form at the current cursor position.

### Insert a calculation field

A Calculation field contains an expression that is a combination of data, functions, and operators. At runtime, the expression result is output for each record. You must supply a name for the field as well as the expression to be evaluated. The **Field - Insert New Field - Calculation Field** option first prompts you for the name of the field in a Calculation Field Name dialog box (Figure 233).

**Figure 233**   Calculation Field Name dialog box
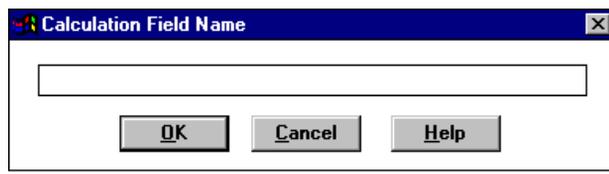


You can enter up to 48 alphanumeric characters (not blanks) in the text box to represent the calculated field name.

Click **OK** to enter an expression for the calculated field. The procedure for expression entry is the same as for "Define selection criteria" on page 421.

### Insert a system field

A System field contains OTM system-dependent information, such as date, time, report page number, and record count. This information is typically in the report or page header or footer. One System field, WRAP_OVERFLOW allows a data field to overflow to the next line or lines. For example, a comment field of 30 characters could contain 10 characters in the data field itself and ten in each of two WRAP_OVERFLOW fields (generally placed directly under the data field itself).

If you choose **Field - Insert New Field - System Field**, a list of System fields is displayed in a Select System Field dialog. The procedure is the same as in "Select Data Field" on page 422.

Click **OK** to paste the current highlighted field in the form at the cursor position.

# Edit field attributes

This option, available by choosing Field > Edit Current Field, is used to edit the attributes for the current field. This option is available only when the cursor is positioned on a field. The field name is displayed in the status bar of the form window. The option displays a set of attributes that can be modified for the current field. You can modify the field attributes as needed.

The attributes that you can modify depend on the type of field. Field types include:

- Text (alphanumeric characters)
- Numeric (numbers, including thousand separators and decimal point)
- Date (date in predefined formats)

### Edit text field attributes

If the cursor is located within a text field and you choose **Field - Edit Current Field**, a Text Field Parameters dialog displaying the current attributes for the field opens (Figure 234).

**Figure 234**   Text Field Parameters dialog box
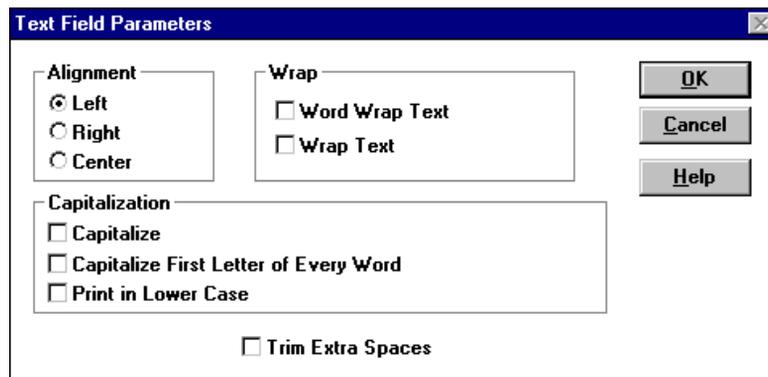
The following parameters can be modified:

**Field Alignment:** By default, text data at runtime is left-aligned. You can use the radio buttons to select left, center, or right alignment.

**Wrap:** If the field length on the form is too short to accommodate the data at runtime, you can select a wrap option to run the text to a **WRAP_OVERFLOW** System field that you have already defined. The Wrap option breaks at the end of the current field, and the Word Wrap option breaks at the end of the last word before the end of the field. The default attribute has no wrap option selected.

**Capitalization:** By default, all text in the data field is printed as stored in the database. You can change this to all capitals, leading capitals, or all lower case, by selecting the appropriate check-box.

**Trim Extra Spaces:** This check-box trims the field length to the length of the data that is entered at runtime.

> **Note:** If you are using columns, this option might cause columns to become misaligned.

## Edit numeric field attributes

If the cursor is located within a numeric field and you choose Field > Edit Current Field, a Numeric Field Parameters dialog box displaying the current attributes for the field opens (Figure 235).

**Figure 235**   Numeric Field Parameters dialog box



The following attributes can be modified:

**Field Alignment:** By default, numbers are left-aligned at runtime. You can use the radio buttons to select left, center, or right alignment.

**Number of Decimal Places:** If the field contains a real number, this option lets you select the number of digits printed to the right of the decimal point.

**Currency Symbol:** If the field represents money, you can use this option to define the currency symbol.

**Sign Representation:** This option lets you select how to represent negative and positive number values. You can enter a character for prefix and suffix for both positive and negative numbers.

**Zero Values:** Check the Suppress Zero Values check-box to suppress printing this field if it contains a value of zero. Check the **Pad with Zeroes** check-box if you wish to align the number to the right of the field and fill with leading zeroes. Check the **Use Comma Format** check-box to insert a comma between thousand values in the field.

In addition to these attributes, you can edit the following attributes for fields that are located in the footer section of the report:

**Summarization Type:** A numeric field in the footer could require the report to print a summary value. This option is a function selector that displays a list of possible summary values, such as total, average, maximum, minimum, or count. You can also print the actual value for the field by selecting Value.

**Retain Value After Printing:** If the footer is a page footer, you can check this option to print "running" values instead of the value for each page.

## Edit date field attributes

If the cursor is located within a Date field and you choose Field > Edit Current Field, a Field Name Edit dialog box displaying the current attributes for the field opens (Figure 236).

**Figure 236**   Date Field Edit dialog
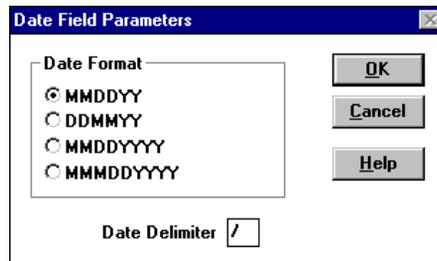


You have a choice of four formats for the Date output, selectable by radio button:

MMDDYY
DDMMYY
MMDDYYYY
MMMDDYYYY

You can also define the date delimiter by entering a required one-character delimiter in the Date Delimiter text box (/ or - , for example).

### Edit calculation field expression

This option is available only when the cursor is positioned on a calculation field and you choose **Field - Edit Field Expression**, or when you are first inserting a calculation field in the form. The option shows the existing calculation expression, if any, in a dialog and allows you to make modifications. The action of this dialog is the same as that for "Define selection criteria" on page 421.

## Setting report parameters

The Forms Editor Options menu lets you set parameters for the report. These parameters are stored with the form and will be operative at runtime.

**Figure 237**   Report Parameters dialog box
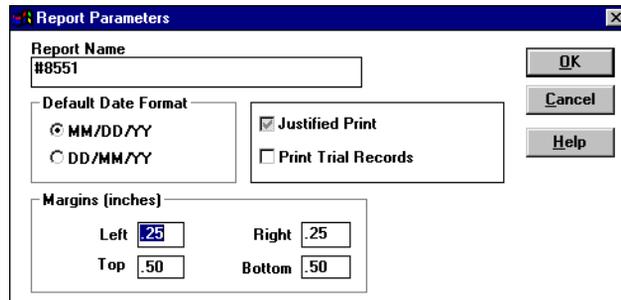


The parameters are defined in the Report Parameters dialog box (Figure 237). To open the dialog box, choose Options > Report Parameters in the Forms Editor. Parameters include the following:

**Report Name:** A text box that lets you enter up to 36 contiguous alphanumeric characters. This name is used in the OTM system as the name for the report and the form. This is not the same as the Windows filename.

**Default Date Format:** A pair of radio buttons that lets you define the format in which dates are printed at runtime. The two formats are MM/DD/YY or DD/MM/YY.

**Print Trial Records:** Run the report with just a few records. This enables you to check that the form generates a report with a suitable appearance and layout.

**Margins:** Four text boxes that let you set the page margins. Enter numeric data only, and ensure that the page layout is valid.

# Character formatting

You can set the appearance of printed text using the **Fonts** menu. By default, text and fields are output in the Windows default font with Normal (unmodified) attributes.

A selection from this menu acts on the selected data. To highlight data (text and fields) place the cursor at one end of the data to be highlighted, hold down the left mouse button and move the cursor to the other end of the data. To turn off highlighting, click anywhere in the form that is not highlighted.

Use the **Fonts** menu to display a list of character enhancements. Select one to print the highlighted text with that enhancement. Enhancements include the following:

Normal, **Bold,** Underline, *Italic*, Superscript, Subscript, Strike.

When you apply an enhancement, highlighting is removed. If you desire more that one enhancement for any text, you must highlight the text again and select another enhancement. To remove an enhancement, highlight the text and choose Font > Normal.

## Font selection

Choosing Fonts > Fonts... opens the Font Selection dialog box (Figure 238) from which you can select a font for the highlighted text.

**Figure 238**   Font Selection dialog box
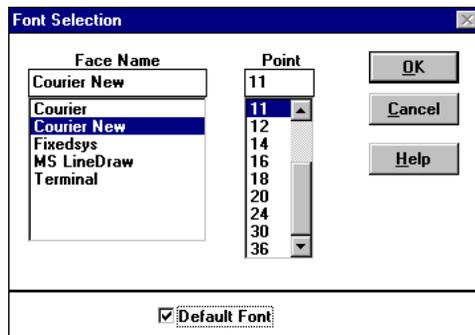
The Face Name box contains the name of the font for the selected text. A list box shows available fonts with the current font highlighted. Click the desired font to change the current font in the Face Name box. Use the arrows to help find the desired size, and click to select the font size.

Click OK to set the highlighted text to the currently selected font and size.

To use a single font for the entire report, select the font face and click the **Default Font** check-box. This becomes the Normal enhancement selection.

## Report criteria

The Forms Editor **Options** menu lets you select criteria for record selection in the report. The criteria cannot be set at runtime, and are stored with the form in which the selection is made. The criteria are defined in an expression that displays in a Select Record Criteria dialog when you choose Options > Record Criteria. The action of this dialog is the same as for "Define selection criteria" on page 421.

## Building a report in the OTM Report Generator - Form Editor

Reports in OTM are built using report forms. The report form contains the information that allows the same report to be run repeatedly with new or updated data. The report form stores information that fully describes the report to the OTM software. A report form is comprised of several sections that describe different aspects of the report. A number of standard report forms are provided with the OTM software to provide some commonly used reports.

This section describes a typical session to build a new report form. As an illustration, it produces a modified version of one of the OTM standard reports: Telephone Directory by Department. The report will print the department name once and print the station information for each department underneath the department heading.

This section describes a step-by-step process to produce a report form. As you become more proficient using the Report Generator, you might find that you use a different series of steps to build or modify reports. Perform the following steps to build a report form:

**1**    Decide what information needs to be displayed on the report.

**2** Select the Report View that best provides the information.

**3** Place the individual data fields on the report.

**4** Decide if the report lines should be sorted.

**5** Specify any special printer considerations for this report.

**6** Apply the finishing touches.

**7** Save the report and test the results.

To work with Report Forms, start the Report Generator (choose File > Reports > Report Generator). Choose Form > New Report Format. This example shows how to create a new form. The report generator places an empty report form on the screen (Figure 239).

**Figure 239**   Empty Report Form

## Decide what information needs to be displayed on the report

As we will see in the next section, information in OTM is organized into several logical databases. A report can use any one of these logical databases. There is also OTM system-dependant data that can appear on a report. This data includes date, system name, page number. Reports also can contain fixed text, typically headings or other constant text information.

In this example, we are using station information (as distinguished from CPND or VMB information). We can sketch out a rough picture of the report as a guide to what will fit on the page and how much heading information will be included.

The basic model of the Report Generator is to read each record in the logical database, decide if it should be included in the report (according to the Report Filter). Some reports sort the records (according to the Sort Header sections). Finally, the records are printed. Some reports print out a line for each record included in the report (specified in the Detail section). Some reports print out summary information (specified in the Sort Header or Sort Footer section), such as the total number of particular instrument types. Some reports combine the detail and summary information

## Select the Report view that best provides the information

After deciding to build a report focusing on station data, pick an appropriate Report View . Views provide alternative ways of looking at the data. Some of the report views describes the type of data. If the report describes CPND configuration information, then choose the CPND view; for CPND Name information (by Directory Number or Group) use the CPND Name view; for VMB information (by Directory Number) use the VMB view.

**Figure 240**   Select Report view dialog box
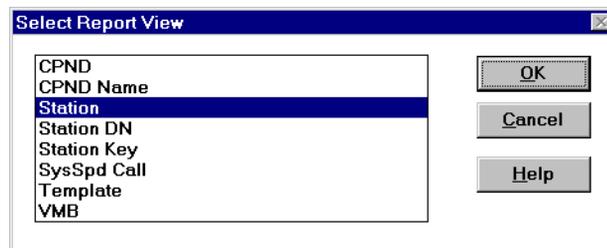
Station data is provided with some alternative views. If the report should print one line for each station, then choose the Station view. If the report should print one line for each Assigned Directory Number, then choose the Station DN view. If the report should print one line for each station key, then use the Station Key view. (In the Station Key view, single line information is included by assigning "pseudo key numbers" to the single line key features.) The SysSpdCall view is a special view primarily designed for the System Speed Call Report. It provides one record for each system speed call list user. If the report is selecting only certain records from the database or printing only summary data, then it will not actually print a line for each record, but the view describes how the selecting and sorting process examines the records in the database.

## Place the individual data fields on the report

Once the Report View has been chosen and the basic design of the report has been defined, it is time to place the data on the report page. The Report Generator Forms Editor shows the current form broken into its logical sections. Initially the Page Header section and the Detail section are displayed. As other sections are incorporated into the form, they are displayed as well. In this example, the report contains the following sections:

**Page Header**: This section contains the information displayed at the top of each page. Typically, it would contain the report title, the column headings over the data, the page number, the system name.

**Detail**: The detail section describes the data items that would appear on each line in the body of the report. Typically, it would contain data from each record in the database that is included in the report. The data might be data items from the record or calculated fields built from the data fields. Calculations allow the report to create specially formatted names or other special expressions.

**Sort Header**: The sort header sections (there can be several) describe how the lines in the report will be ordered. Sort 1 Header describes the primary sort, if two records have the same value for the sort field, then Sort 2 Header can be used to refine the order of the report. A report that should be ordered by name, might specify LastName in Sort 1 Header and FirstName in Sort 2 Header.

It is often easier to design the report by specifying the Detail section first. This allows you to lay out the data on the page before placing the column headers. Treat the screen as a blank report page and position the cursor in the Detail section where the field should be placed. Choose Field > Insert New Field > Data Field to see a list of available data items (Figure 241).

**Figure 241**   Inserting Data Field in the Details section
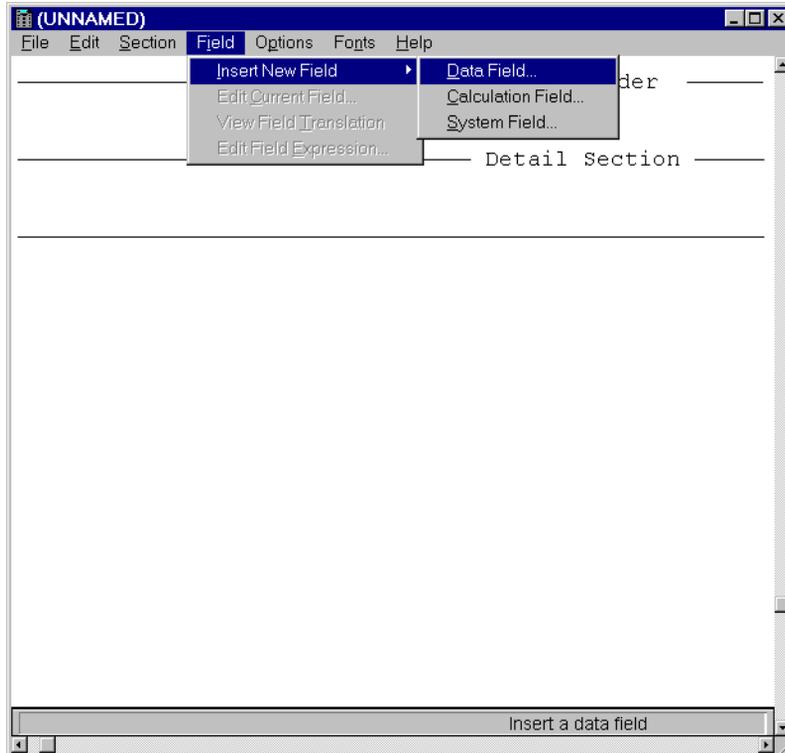


Choosing Field > Insert New Field > Data Field displays a list of the fields that apply to this report view (Figure 242). This Select Data Field list will also appear in other situations where you need to select a field. Several data fields have been added specially to help produce reports and some fields have special meanings that affect their use in reports. Some examples of special reporting data fields include:

ADN - All Directory Numbers: a list of all the Directory Numbers assigned to the station. This field creates a text field with the DNs separated by a space.

ACDS: Keys Assigned to Automatic Call Distribution, showing both the ACD DN and Position ID.

DN: This the Directory Number assigned to a single line station. The PRIMEDN field contains the Directory Number assigned to a single line station and the Directory Number assigned to Key 0 on multi-line station.

> → **Note:** Key features should be reported from the Station Key view and not from KEYGUPD or FTRGUPD.

**Figure 242**   Select Data Field dialog box
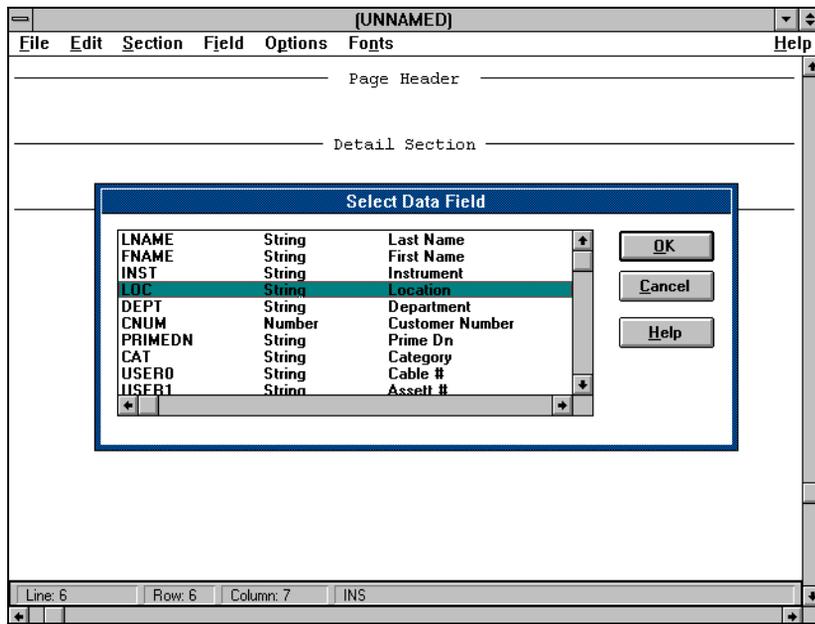


Use a calculated data field to tailor the information from the data record. To use a calculated field in a report, choose Field > Insert New Field > Calculation Field. A dialog box opens (Figure 243), prompting you to name the newly calculated field.

**Figure 243**   Calculation Field Name dialog box
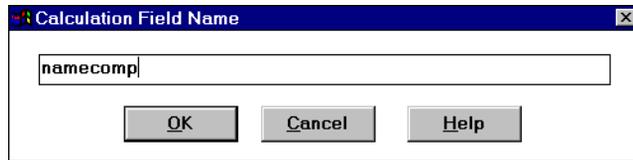


The Field Name dialog box is followed by a dialog box that allows you to construct an expression that performs the calculation. It can be built from existing data fields, functions, and operators. The example in Figure 242 constructs a field that contains "Last Name, First Name".

**Figure 244**   Defining a Calculation field
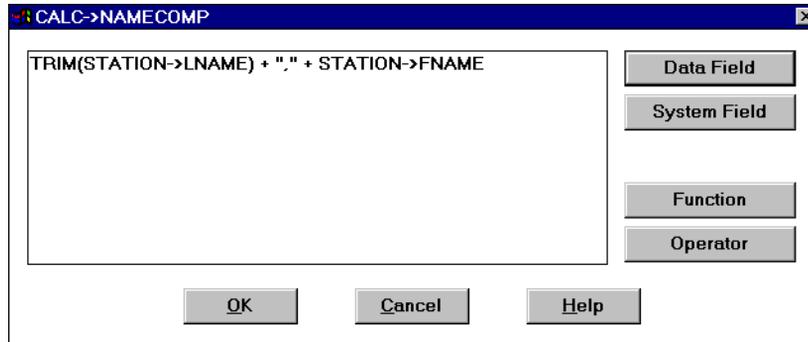


Note that the TRIM function is used to remove extra spaces and the "+" operator is used to concatenate the two fields. You can type the expression directly in the box or you can select the fields (from the **Data Field** or **System Field** buttons), the functions, and the operators. The expression will be built as the pieces are selected.

Note that some functions apply to text fields and some functions apply to numeric fields. The Select Data Field list shows whether a field is numeric or text. In general, functions should not be applied to the System fields.

After the detail section has been specified, you can design the Page Header section. The text for the column labels can be placed over the appropriate data. The Page Header section often uses the System data fields: page number, system name, date, and time. Choose Field > Insert New Field > System Field to open the Select System Field dialog box (Figure 245).

**Figure 245** Select System Field dialog box
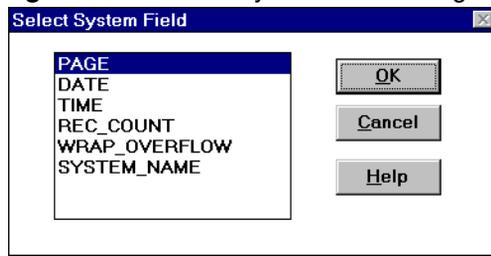


The Page, Date, Time, and System_Name fields are commonly used in the Page Header section. Other system fields are discussed in the section titled "Some special techniques" on page 503.

## Decide if the report lines should be sorted

Many reports require the data to be sorted. Since there is no sort information on a new report form, choose Section > New Section. The Select New Section dialog box opens (Figure 246). Select Sort 1 Header in the dialog box. This will add a sort section to the report.

**Figure 246** Select New Section dialog box
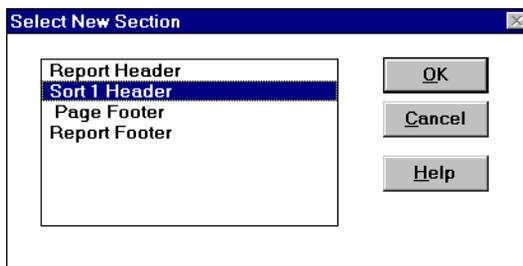


The first sort section specifies the data field that provides the primary ordering of the data. The data value to use for sorting will be selected from the list of data fields.

Other sort sections will be applied only to provide secondary order levels within the primary ordering. To order a report by alphabetizing the names of people in a department, the report should use Department for Sort 1 Header, LastName for Sort 2 Header, and FirstName for Sort 3 Header.

**Figure 247**   Select Data Field dialog box
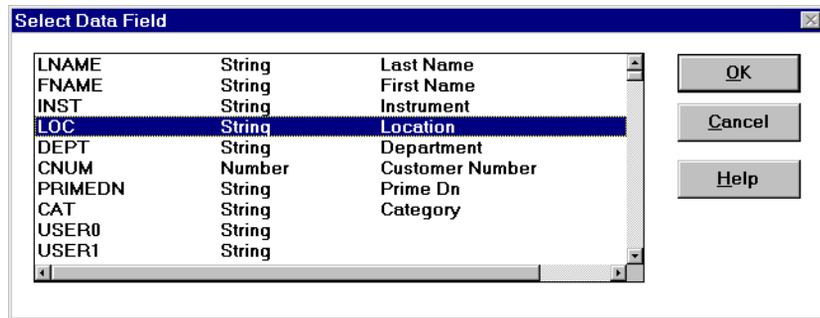


To modify a Sort Header after it has been specified, choose Section > Sort Field.
(It will only be available if the cursor is positioned in a Sort Header.) From this
dialog box, press the Sort Field button to display the list of data fields
(Figure 247).

Summary information can be specified in the Sort Fields, as well. On a report
sorted by department, it is possible to print each department name once, by
specifying the Department field in the Sort Header section and not in the Detail
section (Figure 248).

**Figure 248**   Adding summary information in the Sort Header section
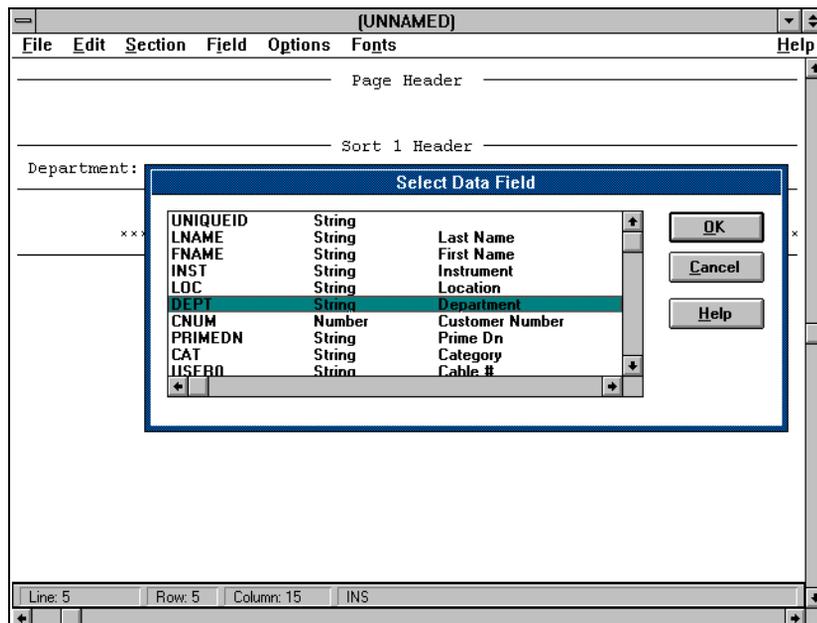
The Sort Header section will print only when the Sort Header's field value changes. It uses the data field on the first record in the new sort group. Typically, the data field chosen to print in the Sort Header should be the same field on which the data are being sorted.

### Specify any special printer considerations for this report

The Report Generator allows each report form to contain special printer information. Some reports might be designed to print in landscape mode, while others should print in portrait mode. Some reports might require a special printer, an impact printer with special forms, for example.

Choose File > Print Setup to select a printer and press the Properties button to specify special print instructions (Figure 249).

**Figure 249**   Printer Properties dialog box
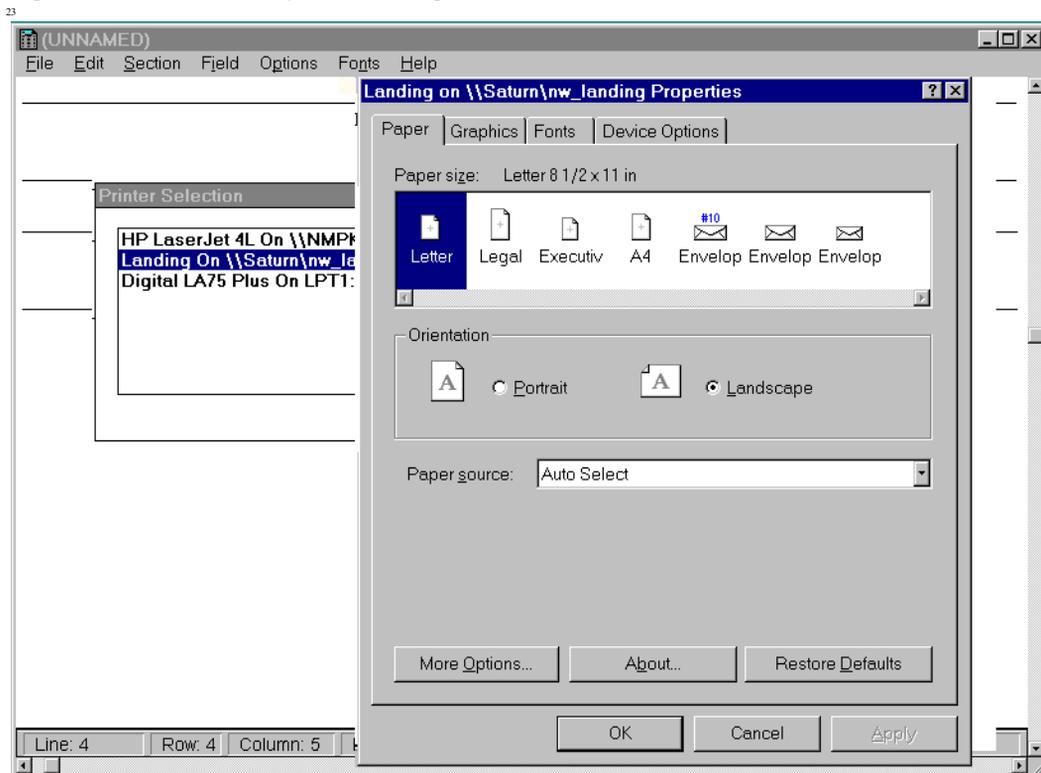
This information is stored with the form so that it applies each time the report is printed. When the Report Generator actually builds the report from the form and the data, you can override this printer information.

## Apply the finishing touches

The Form Editor provides some additional capabilities to tailor the report. As you examine the almost complete report, you might wish to modify the appearance of the report.

### *Lengthening and shortening data fields*

You can adjust the width of the data fields in the report. The area for each data field is marked on the form with the small letter 'x'. The data will be printed in that marked area. If the actual data are longer, they will be truncated to fit in the area; if they are shorter, the rest of the marked area will be filled with blanks. In the example report, you must lengthen the area set aside for the calculated field which holds the name. You might want to shorten a field in order to try to squeeze another field onto the report.

To adjust the width of a data field, place the cursor in the marked area. To shorten the field, press <Delete> or <Backspace>. To widen the field, press any other key. It will appear on the form as the small letter 'x'.

### *Adding and deleting blank lines*

The Form Editor allows you to add and delete blank lines on the report. On a new form, the data in the Detail section is, by default, double spaced. To make a single-space report, position the cursor on the extra blank line and choose Edit > Delete Line (Figure 250).

**Figure 250** Deleting a blank line from the Detail section
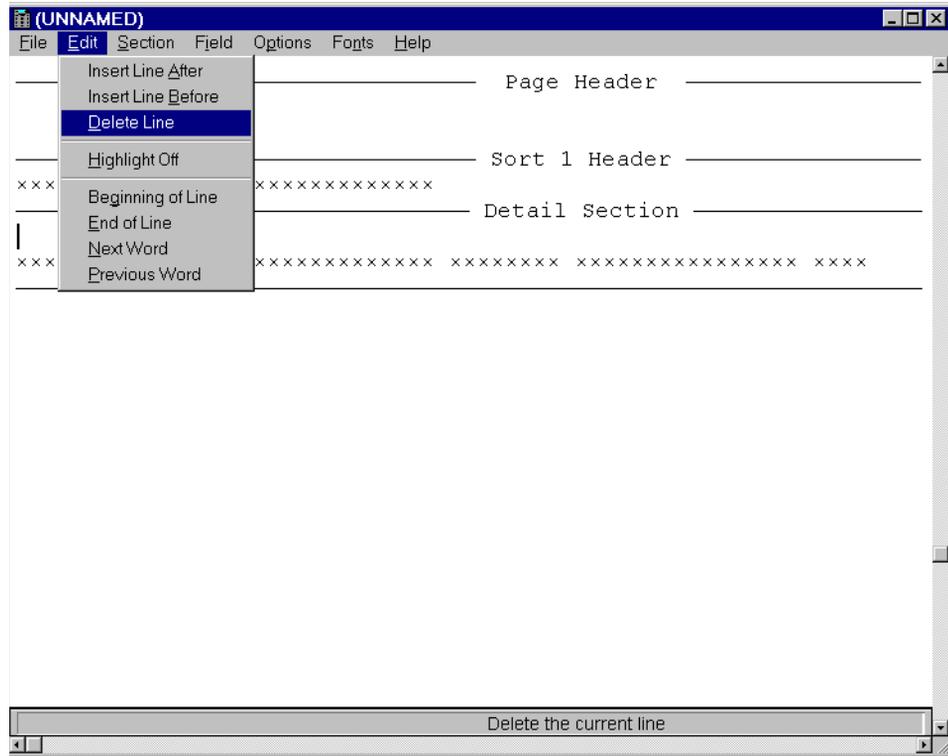


Other items in the Edit menu allow you to insert blank lines either above or below the line on which the cursor currently rests.

*Report Parameters*

There are a few more options available to complete the report. Choose Options > Report Parameters to specify the name of the report as it will appear in the list of available reports. It also allows you to specify margins and other report -wide options.

The Print Trial Records is used for reports that require that the paper be correctly aligned in the printer. It has no effect until you send the report to the printer. At that time, the Report Generator will ask whether it should print a Trial Report. The Trial Report contains the Header and Footer sections and a single line from the

Detail Section. Each data field is replaced with a string of the letter 'X' of the appropriate length. You will be asked to print the Trial Report until you click **No**. This allows you to adjust the paper in the printer until it is properly aligned. Then the full report can be printed.

### *Report Filter*

The Report Filter selects which records are to be included in the report. Choosing Options > Report Filter displays the Record Selection Criteria dialog box (Figure 251). This dialog box helps you to build an expression, typically from the data fields. As the Report Generator reads each record in the database, it evaluates the expression. When the expression is true, the record will be included in the report.

**Figure 251**    Record Selection Criteria dialog box
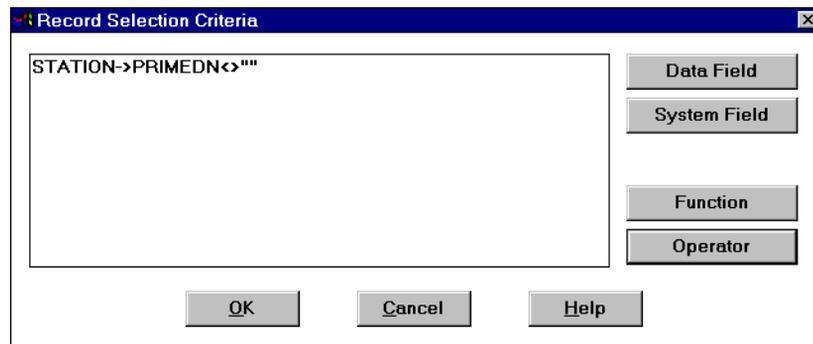


The Record Selection Criteria dialog box operates very much like the Calculation Field dialog box. However, you should build an expression, usually including a comparison operator (=, >, <, <>). In the example, we are selecting all records for which there is a Prime DN. The expression tests whether the PrimeDN field is not equal (<>) to blank (" ").

### *Modifying fields*

As part of the final tuning, you might want to specify more exactly how the fields are to be displayed. Choose Field > Edit Current Field.

The Alignment options operate within the area of the data field, marked by the letter 'x'. The Wrap options should apply when the field will not fit in the area allowed. The section on "Some Special Techniques" discusses how to wrap text. Similar display options, like whether to use commas, control the printing of numeric fields.

## Save the report and test the results

With the initial specification of the form complete, it is time to save the form and test it with the data from the system. Choose File >Save or File > Save As to save the form. Choosing File > Close returns control to the Report Generator. To test the form, choose Report > Run Report and select the report form you want to run (Figure 252).

**Figure 252** Select a Form File dialog box
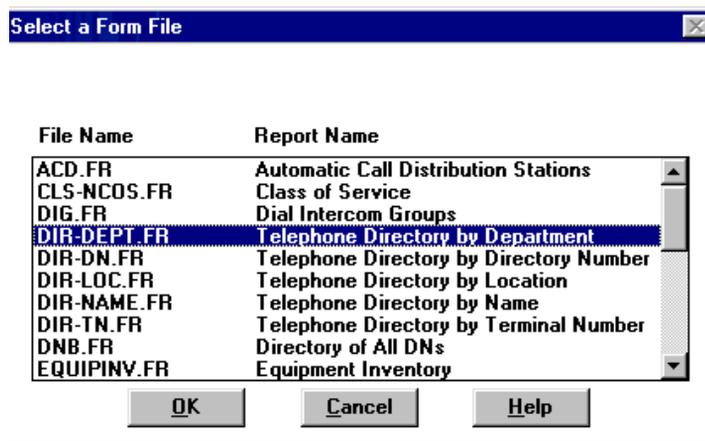


The Select a Form File dialog box uses the report names specified in the Form Editor's Option/Report Parameters dialog. If you did not specify a name for a new form, this list will display the file name. If you modified an existing form and saved it with a new file name but did not change the Report Name, that Report Name will appear twice. In this case, you should go back into the Form Editor to give your modified report a new Report Name.

As you run the report, you might find that you wish to modify the form. From the Report Generator choose Form > Open Existing Report Format to return to the Form Editor and modify the form.

### Some special techniques

The following are a few special techniques available in the Form Editor to help you customize your reports:

#### *Sort Header section /Break Field*

If the cursor is placed in a Sort Header section, the Section > Break Field menu item is enabled. The Break Field is a data field that causes the Sort Header section and the Sort Footer section to print. By default (and almost always) the Break Field is the same as the Sort Field that was specified when the Sort Header section was created.

#### *Word wrap*

If the data field will not fit in the area allowed for it on the form, you can specify that the field should wrap. By default, data which will not fit in the allotted space will be truncated. Wrapping is especially useful for a field like ADN (the list of all Directory Numbers assigned to a station), which can be either quite long or quite short.

Wrapping the data field requires two steps:

**1** Mark the field as one that should be wrapped using the Field/Edit Current Field dialog. (Wrapping only applies to text fields.) Choose the Wrap Text box to cause the field to wrap at a word.

**2** Specify where to position the wrapped portion of the field. Position the cursor directly below the field that is to be wrapped and choose **Field - Insert New Field - System Field**.

You can include several overflow areas directly below each other. If you wish to include the line for the overflow only if it is needed, choose **Section - Edit Current Section**. This dialog includes an option to Suppress Blank Lines that will only print the line with the Wrap_Overflow field if it is used.

#### *Modifying a standard report*

If you choose to modify one of the standard reports distributed with OTM, you will notice that there are numbers in the headers, instead of text (Figure 253). These numbers allow the reports to translate automatically to another language.

**Figure 253** Example Report



To see the actual text within the Form Editor, position the cursor on the octothorp character (#) and choose Field > View Field Translation. A box will display the text that will appear on the printed report.

*A quick description of some section types not used in the example*

**Sort Footer section**: Data fields placed in the Sort Footer section can be used like summary data in the Sort Header section. The fields in the Sort Footer section are only printed if the value changes (except that it prints after the detail lines). In addition, Sort Footer data can contain totals and other summary statistics. After placing a data field in the Sort Footer, you are prompted with a list that contains Value (to print the value from the last record in the group) or various summary statistics (include Total, Average, Count, Max, Min). These summary statistics also can be specified by choosing Field > Edit Current Field in the Footer Field box.

**Report Header, Report Footer**: These sections can be used to specify data that should print only once at the beginning or the end of the report.

# Power User tool

The standard OTM Station Administration window allows you to easily add or modify a few stations at a time. However, creating or maintaining large groups of stations quickly (as when establishing a new system) is better handled using the Power User tool.

The Power User Forms window minimizes the actions required to add a station, eliminates up-front configuration of line cards and numbering plan, and allows you to create specialized installation *forms* that include only the station fields that you decide you need to configure stations.

> **Note:** At any time while using the Forms window, you can press <F1> for on-line reference information on the current field.

## Concepts for the Power User tool

The concepts of *forms*, *templates*, and *filters* are important to understand before using the Power User tool.

### Forms and templates

A *form* (a file that you can design) acts as a *filter* to determine which fields (of the hundreds possible) are displayed in the Power User Forms window for you to edit. When it's time to use the form, you fill in the station values as needed for the first station, save them, and move to the form for the next station in the group that you are adding. You create a form file (a list of only those station-definition fields you wish to see in the order in which you want to see them) using the Forms Editor.

A *template* places default values in some of these fields to save you the repetitive task of adding the same value to station after station. You create a template file (a partially filled-in station) using the template view in the Station Administration module.

> **→** **Note:** The function of templates is identical in the standard Graphical User Interface and the Forms Interface.

This means that a form, used in conjunction with a template, provides you with a station-definition window including only those fields that you wish to edit, and with many fields already configured by the template with values of your choosing.

To lessen clutter on the screen, the fields configured by the template are not displayed. This means that you work with only those fields which must be "personalized" for this station. You do not waste time moving through already-configured fields.

You view and edit these station-configuration fields in the Forms Interface window.

## Filters

There are hundreds of fields for a station, yet you are probably interested in only a few. The Form File that you define acts as a filter to allow only the fields of interest to appear in the forms interface station definition window.

OTM automatically performs a second filtering to determine which of the station fields defined in the Form File actually apply to the current station. This *applicability* filter is based upon Meridian 1 or Succession CSE 1000 system data (software release, option packages, customer options) and the telephone type assigned to the current station.

There are two important benefits to this applicability filter, as follows:

• Form files are independent of systems, and, therefore, X11 software release, options packages, and customer options

For example, a form file might contain fields that apply to release 20, but not to release 19. You can safely use this form with release 19 systems, since the release 20 fields will not be displayed.

- Form Files are independent of station types

  A single Form File can include both single line features (FTRs) and multi-line keys. If the form is used to display a single line station, then the FTRs (but not the keys) are displayed. If the same form is used to display a multi-line station, then the keys (but not the FTRs) are displayed.

# Using the Power User Forms interface

You use the Forms interface to add one or many stations to a system, as described in this section. "Designing forms and templates using the forms editor" on page 524 describes the process of creating forms and templates.

## Forms interface window buttons

The following buttons appear at the top of the Forms interface window:

- **OK**: (Single station adds only) Saves the current station and closes the window.
- **Next**: (Multiple station adds only) Saves the current station, and opens the next blank station form.
- **Previous**: (Multiple station adds only) Saves the current station and opens the previously-created station.
- **Cancel**: Cancels any changes to the current station and closes the window. Any stations created before the current station while using this form are still in place.
- **Validate**: Validates all current station values.
- **Print**: Prints a short form for the current station. This printout shows all values in the station, not just those on the form. (This is a quick way for you to check the value of a field not on the form.)
- **Help**: Opens Windows Help.

## Forms interface message bar

The message bar at the bottom of the window has two panels. The left panel provides a description of the current field. The right panel displays hint text for the current field. For example, the hot keys to invoke the DN and TN lists where appropriate.

### Keyboard shortcuts

In the procedures that follow, keyboard shortcuts are shown in brackets.

### Adding a single station or template

**1** Choose Forms > Forms Interface.

This is a toggled menu item. Clicking it places a check mark next to the name (selects it), and clicking again removes the check mark (deselects it).

**2** Choose Forms > Select Form.

The Select Form dialog box opens (Figure 254). This is a standard Windows file open dialog box.

**Figure 254** Select Form dialog box
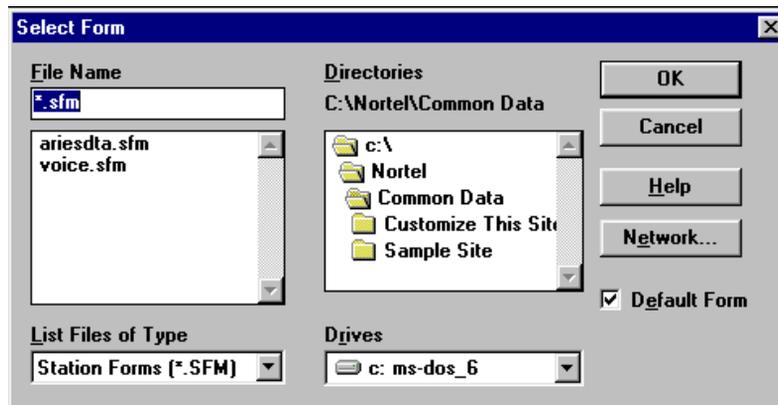


**3** OTM provides the following example forms for you to use in creating forms that meet your needs:

- ARIESDTA.SFM: designed for M2xxx and M3xxx data stations
- VOICE.SFM: designed for all types of voice stations (single and multi-line)
- Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

**4** Select the form from the list box or select the Default Form check box. Click OK.

**5** Choose View > Station to add a station or select Template to add a template.

The existing stations (or templates) for the system appear in the OTM Station Administration window.

**6**   Choose Edit > Add.

The Add Station dialog box (or Add Template dialog box) opens (Figure 255).

**Figure 255**   Add station dialog box



**7**   If you are adding stations, follow these steps:

- Enter "1" in the Number of Stations to Add field.
- Select the Customer Number in the pull-down box.
- Choose a template or instrument.

    If you choose a template, some fields will be filled in with the default values that you chose when designing the template.

- Click the check boxes to automatically assign DN or TN, as desired.
- Click the Phantom check box to add a virtual station, or click the Host Terminal check box to add a host station for the Meridian 1 Virtual Office Feature available on M3900 Series telephones.

**8**   If you are adding a template, select a template from the list (Figure 256).

**Figure 256**  Add Template dialog box
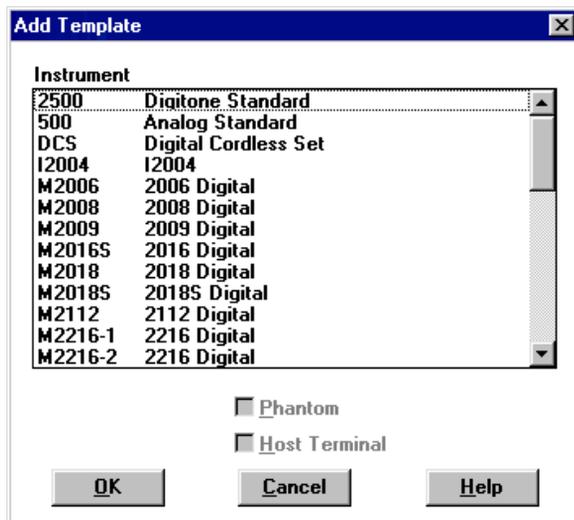


**9** Click OK to open the Forms Interface window.

The single station add form opens (Figure 257).

**Figure 257**   Single station add form



**10** Fill in the fields as described in "Station fields" on page 516.

**11** When you have entered all desired values, click OK.

This saves the station and closes the forms interface window.

**12** For stations: If OTM is in Maintenance mode, the synchronization dialog appears. Fill in the dialog in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

## Updating a single station (or template)

**1**   Choose Forms > Forms Interface.

This is a toggled menu item. Clicking it places a check mark next to the name (selects it), and clicking again removes the check mark (deselects it).

**2**   Choose View > Station.

(To modify a template, select Template.

The existing stations (or templates) for the system appear in the OTM Station Administration window.

**3**   In the OTM Station Administration window, double-click the station (or template) of interest.

The single station add form (or the template add form) opens.

**4**   Modify the fields as required.

**5**   Click OK.

**6**   For stations: If OTM is in Maintenance mode, the synchronization dialog appears. Fill in the dialog in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the **Sync** menu.

## Adding multiple stations

**1**   Choose Forms > Forms Interface.

This is a toggled menu item. Clicking it places a check mark next to the name (selects it), and clicking again removes the check mark (deselects it).

**2**   Choose Forms > Select Form.

The Select Form dialog appears. This is a standard Windows file open dialog. See Figure 265.

OTM provides the following pre-defined forms:

*   ARIESDTA.SFM: designed for M2xxx and M3xxx data stations
*   VOICE.SFM: designed for all types of voice stations (single and multi-line)

- Default form: A general-purpose form that includes all station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

  OTM provides these pre-defined forms as starting points for your own special-purpose forms. You can create forms that include just the fields you need, and templates that set values that you define. See "Creating a new form" on page 524 and "Editing an existing form" on page 526.

**3**  Select the form from the list box or select the Default Form check box. Click OK.

**4**  Choose View > Station.

The existing stations for the system appear in the OTM Station Administration window.

**5**  Choose Edit > Add.

The Add Station dialog box opens.

**6**  Enter the number of stations that you want to add.

**7**  Select the Customer Number in the drop-down box.

**8**  Choose a template or instrument.

If you choose a template, some fields will be filled in with the default values that you chose when designing the template.

**9**  Click the check boxes to automatically assign DN or TN, as desired.

**10**  Click OK to open the Forms Interface window.

The multiple station add form opens (Figure 258).

**Figure 258**   Multiple station add form (default form)



**11** Fill in the fields as described in "Station fields" on page 516.

**12** When you have entered all desired values, Click Next.

This saves the station and opens the next blank station form. The Next button changes to a Finish button while you edit the last station in the group. The Finish button saves the station and closes the forms interface window.

**13** If OTM is in Maintenance mode, the synchronization dialog appears. Fill in the dialog in the same way as with the standard interface. Click OK.

To invoke synchronization manually if you are in Installation mode, use the Sync menu.

# Validating station data

You can validate by field or by station, same as the standard interface. In addition, you have the option to relax numbering plan and hardware validations to ease the process of adding multiple stations at one time.

## Field validation

The current field is automatically validated when you move to another field. If the validation fails, an error message appears, and the focus returns to the erroneous field.

## Station validation

In the Forms Interface window, click Validate to validate all values for the station. This performs the same operation as when you choose File > Validate.

## Validating the numbering plan and hardware

You can relax the numbering plan and hardware validation when you choose Options > Mode and adjust the items in the Mode dialog box (Figure 259) as follows:

- Turn off numbering plan validation. This allows you to assign a DN not defined in the numbering plan, without generating an error.
- Turn off hardware validation. This allows you to assign a TN for which there is no corresponding circuit card, without generating an error.

> → **Note:** These validation settings affect both the forms interface and the standard interface.

**Figure 259**  Mode dialog box
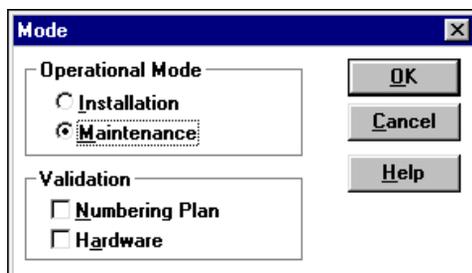


# Station fields

This section provides detail on the station fields that you fill in using the Forms Interface.

### Online Help

At any time while using the Forms window, you can press <F1> for online reference information on the current field.

### Types of station field

The following basic types of station fields can appear in the Forms Interface:

- Class of service
- Multi-line keys
- Single line features (FTRs)
- Prompts: These are all fields which do not fall into one of the above categories (for examples, TN, NCOS, and TGAR)

### Class of service field

The Class of service control appears as a CLS text box which can contain multiple values (the approach taken by LD 10 and LD 11). Enter all CLS mnemonics for this station in the CLS text box.

You can enter multiple mnemonics for the same class of service in the CLS text box (for example, CFXA and CFXD). In this case, whichever mnemonic appears last (furthest to the right) takes precedence. This is consistent with the operation of LD 10 and LD 11.

The values of some Class of service fields might not be visible on the form when it appears. Instead, the form shows only those classes of service which are not equal to default values. You can modify this partial configuration by adding new mnemonics or changing existing ones.

Press <Fl> while within any class of service field for a complete list of class of service mnemonics in Windows Help format.

### *Printing the class of service configuration*

The **Print** button on the form window allows you to print a short form which shows the complete class of service configuration.

## Multi-line keys

Keys for multi-line stations appear as drop-down boxes containing all key mnemonics. As you move through the list of mnemonics, the key description appears in the message bar at the bottom of the window. Additional parameter controls appear automatically if a mnemonic requires them (and for FTRs set to **Yes**).

You can also type a mnemonic directly into the box. OTM tracks your typing and automatically enters the first matching key (and any associated parameter controls).

Alternately, type the first letter of the mnemonic, followed by the down arrow key. The selection moves to the mnemonic starting with that letter. Press the down arrow key again to scroll down the list starting at that point.

## Single line FTRs

FTRs appear as drop-down boxes containing the choices **Yes** and **No**. You can also type directly into the box. Additional parameter fields appear automatically if you set an FTR to **Yes**. When you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window.

### Prompts

Prompt fields appear as either drop-down lists or as edit boxes, depending on the type of the field. Fields with a small number of predefined values appear as drop-down lists (for example, FCAR and DTR). Numeric fields and other fields with a wide range of possible values appear as edit boxes (for example, DES and FDN).

## DN and TN fields

DN and TN fields allow you to use lists of values to fill in the fields. In addition, extra fields appear as needed to allow you to enter parameter values.

### TN fields

When you edit a field with a TN type value, press <Ctrl> T (or double-click in the field) for a list of Terminal Numbers compatible with the current station type (Figure 260).

**Figure 260**   Terminal Numbers value list
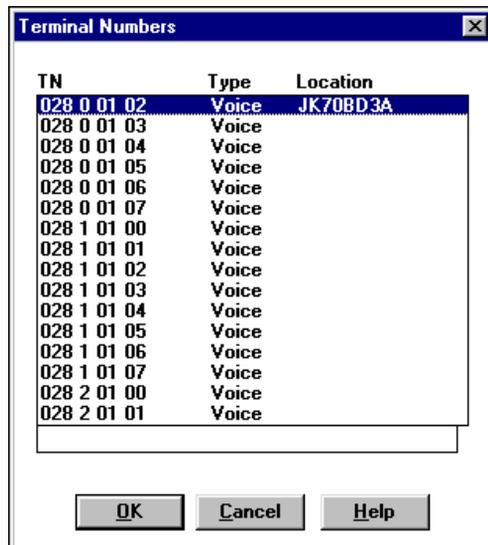
## DN fields

In addition to station fields, you need to modify fields that are not directly associated with the current station, but which are associated with DNs that appear on the station. You can use the following DN fields in the forms interface:

- MARP
- CPND
- VMB

> **Note:** DN data is applicable to stations only, not templates. Therefore, the MARP, CPND, and VMB controls described below appear only on a form when operating on stations. Templates do not actually have DNs. Even if a template is configured with a fully specified DN, no DN record will be added to the database until a station is created using the template. Therefore, at the time a template is created, there is no way to store any DN data.

Press <Ctrl> D while in a DN field (or double-click in the field) for a list of Directory Numbers (Figure 261). In the standard interface, MARP, CPND, and VMB appear as buttons on the DN list dialog. In the forms interface, MARP, CPND, and VMB appear as fields on the main form.

**Figure 261** Directory Number value list
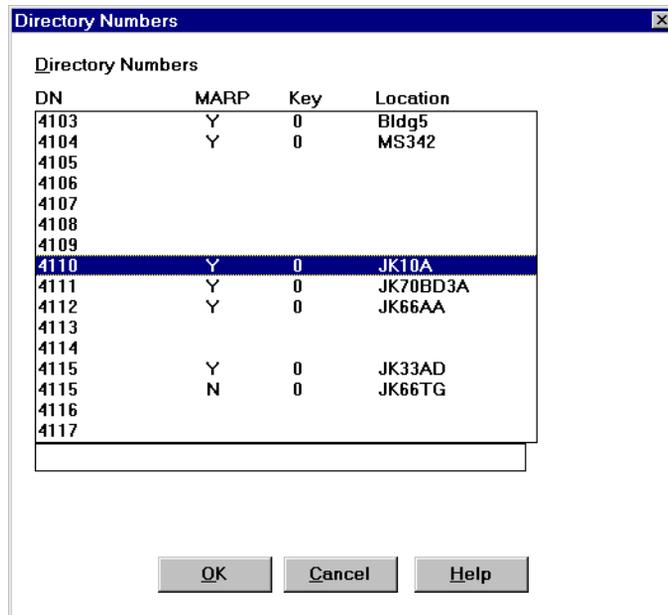


*MARP*

The MARP drop-down list appears below the DN field with which it is associated.
Multiple appearance DNs can have values of **Yes** or **No**. Single appearance DNs
can have a value of **Yes**. The MARP field appears below the DN field of a
single-line station and below the following multi-line keys:

- MCN
- MCR
- PVN
- PVR
- SCN
- SCR
- HOT_L_2WAY

- HOT_D_2WAY

> →  **Note:** The following Meridian 1 releases do not support MARP, therefore MARP does not appear on their forms:
>
> - North American releases 14 and 17
> - International release 16.9X G

*CPND*

The CPND name field is a single drop-down list (additional fields appear to the right if you choose a CPND value that requires them). See Figure 262. A CPND field appears below the DN field of a single line station, as well as below the following multi-line keys:

- MCN
- MCR
- SCN
- SCR

You can choose one of the following values from the drop-down list:

- **None**: Performs no CPND operation
- **Add**: Creates a new CPND name (appears only if no name exists yet for the DN)
- **Delete**: Removes an existing CPND name
- **Update**: Modifies an existing CPND name

## CPND parameter fields

As you move the cursor into a parameter field, the parameter description appears in the message bar at the bottom of the window. See Figure 262.

**Figure 262** CPND parameter fields



The following parameter fields appear to the right of the CPND field when you choose a value other than None:

- Get from location: drop-down list containing Yes and No
- First name: text box
- Last name: text box
- Expected length: text box. This field is only added if the name has Sync Status NEW, and static allocation is enabled in the CPND Administration module.
- Format: drop-down list containing FIRS and LAST
- Language: drop-down list containing ROM and KAT. This field appears only if package 211 (Multi-language CPND) is enabled for the system.

Some additional attributes of the name controls follow:

- If the Get From Location field is Yes, then the First Name and Last Name controls are dimmed and disabled, and contain the name from the First Name and Last Name fields of the station.
- If the operation is Delete, then the additional name controls are dimmed and disabled. This allows you to view the name which is to be deleted, but not to modify it.

→ **Note:** CPND depends on package 95 (Call Party Name Display). If package 95 is not enabled for a Meridian 1 or Succession CSE 1000 system, the CPND field will not appear on the form.

*VMB*

VMB appears initially as a drop-down list (additional fields appear as needed). See Figure 263.

**Figure 263**   VMB fields



A VMB appears below the DN field of a single line station, and below the following multi-line keys:

- MCN
- MCR
- SCN
- SCR

The drop-down list contains the VMB operation to be performed, and allows the following values:

- **None**: Perform no VMB operation
- **Add**: Create a new VMB (appears only if no VMB exists yet for the DN)
- **Delete**: Remove an existing VMB (appears only if a VMB does exist)
- **Update**: Modify an existing VMB (appears only if a VMB does exist)

If you select an operation other than **None**, then additional fields appear to the right of the VMB field. The additional fields are listed below in the order in which they will appear from left to right.

- Class of service (text edit field)
- Second DN (text edit field)

- Third DN (text edit field)
- Keep messages (drop-down list containing **No** and **Yes**). This control is only added if the voice mailbox has Sync Status **NEW**.

As you select a VMB field, the description appears in the message bar at the bottom of the window. Additional parameter fields appear automatically if a VMB requires them.

If the VMB operation is **Delete**, then the additional fields are dimmed. This allows you to view the VMB which is to be deleted, but not to modify it.

> ➡️ **Note:** VMB depends on package 246 (Voice Mailbox Administration). If this package is not enabled for a Meridian 1 system, then the VMB fields do not appear on the form.

> ➡️ **Note:** VMB is not applicable to Succession CSE 1000 systems.
>
> VMB

## Designing forms and templates using the forms editor

The OTM application assumes that station Form Files are located in the Common Data subdirectory, using a ".SFM" file extension. You can, however, place these form files anywhere you wish.

OTM provides the following pre-defined forms:

- ARIESDTA.SFM: designed for M2xxx and M3xxx data stations
- VOICE.SFM: designed for all types of voice stations (single and multi-line)
- Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. Instead of selecting this form in the file-selection box, you select this form by selecting the Default Form check box.

### Creating a new form

To create a form, perform the following steps:

**1**  Choose Forms > Forms Interface.

**2**  Choose Forms > Edit Custom Form.

The FormEdit window appears.

**3**  Choose File > New to open a new form.

The FormEdit window appears with no fields in the Form Fields list.

**Figure 264**  FormEdit window for a new form
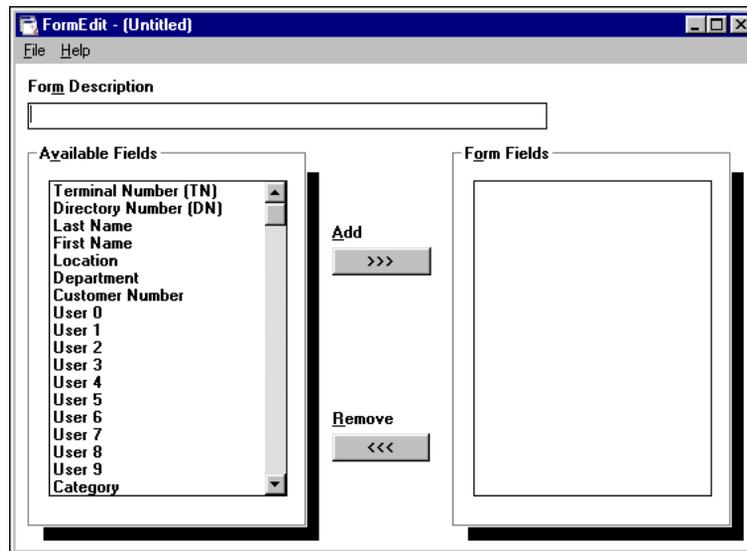


**4**  From the Available Fields list, select the first field you wish to include in the form, and click Add.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to drag from the Available Fields list to the Form Fields list.

**5**  Move all the desired fields to the Form Fields list.

To change the order of the fields, click and drag items up or down in the list.

To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click Remove.

**6**  When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

**7** Choose File > Save to save the form file.

The Save As dialog box opens, allowing you to name the new form. Enter a filename and click OK.

Alternately, to exit the forms editor without saving the form, choose File > Close. A warning box asks whether you wish to save the changes before exiting the editor.

Editing an existing form

To edit an existing form, follow these steps:

**1** Choose Forms > Forms Interface.

**2** Choose Forms > Edit Custom Form.

The FormEdit dialog appears.

**3** Choose File > Open to install a form.

The Select Form dialog box opens .

**Figure 265**   Select Form dialog box
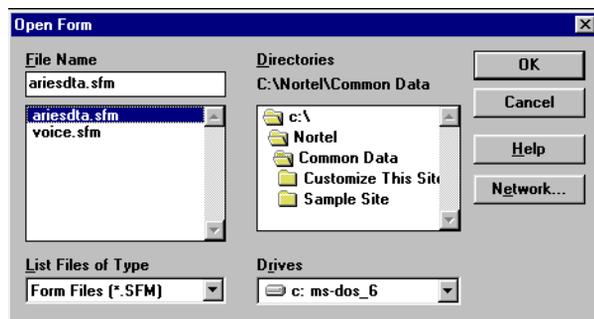


OTM provides the following pre-defined forms:

- ARIESDTA.SFM: designed for M2xxx and M3xxx data stations
- VOICE.SFM: designed for all types of voice stations (single and multi-line)

- Default form: A general-purpose form that includes most station fields. This is a good starting point for a form with many fields. You choose to use this form by selecting the Default Form check box.

> ➡ **Note:** The sample forms provided with OTM are a good starting point for customized forms that you might want to create. Be sure to rename the forms when you save them. Subsequent versions of OTM will use the default filenames, so any files you create that use the default file names are overwritten during the next re-installation or upgrade.

**4** Select the form from the list box. Click OK.

The FormEdit window opens .

**Figure 266** FormEdit window (M2xxx and M3xxx data stations)
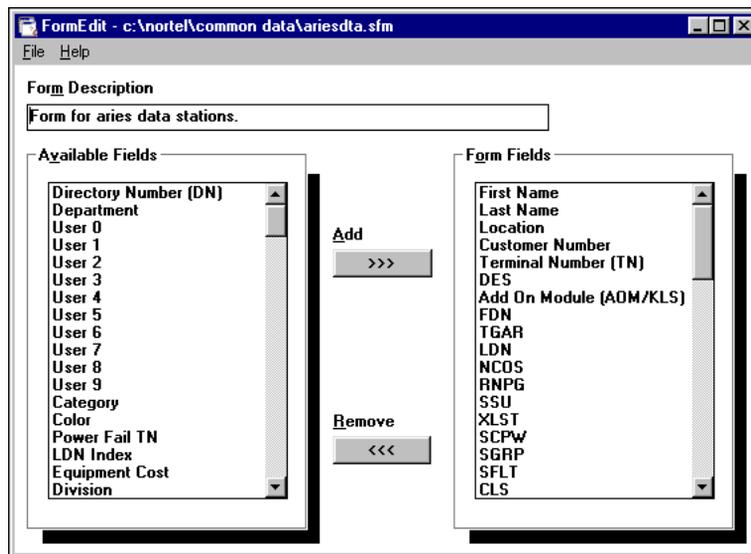


**5** From the Available Fields list, select the field you wish to include in the form, and click Add.

The field moves to the Form Fields list.

Alternately, you can select one or several fields to click and drag to move from the Available Fields list to the Form Fields list.

**6** Move all the desired fields to the Form Fields list.

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To change the order of the fields, click and drag the item up or down in the list.

To remove an item from the list, click and drag from the Form Fields list to the Available Fields list, or select the item and click Remove.

**7** When the Form Fields includes all the desired fields in the correct order, type a descriptive phrase in the Form Description text box.

This is a phrase to help you remember the form's usage, not the filename.

**8** Choose File > Save As to save the modified form file.

Alternately, to exit the forms editor without saving the form, choose File > Close. A warning box prompts whether you wish to save the changes before exiting the editor.

# Chapter 5
# Alarm Management

## Overview

OTM alarm management provides an alarm collection and processing center for multiple systems and devices. OTM receives SNMP traps from systems, such as Meridian 1 systems, Succession CSE 1000 systems, and Call Pilot, and stores them in a circular log file on the OTM Server. The OTM Alarm Notification application monitors the incoming traps and notifies the appropriate people of important events and alarms.

### Alarm management components

OTM alarm management has the following components:

- A Web-based alarm browser server that supports the viewing of alarms from multiple systems and devices. HTML Help is provided for individual alarms.
- A Microsoft® Windows® alarm browser (Event Monitor) you use to view Meridian 1 or Succession CSE 1000 system specific alarms. Windows help is provided for individual alarms.
- An Alarm Notification application that provides a scripting language to generate notifications on selected incoming traps. Notification types include pagers, e-mail, and the forwarding of SNMP traps to an upstream processor (such as Optivity NMS). Notification is triggered by trap data such as alarm severity, device type, and time of day. A Script Wizard application simplifies the creation of Alarm Notification scripts.

- A Text Handler application that parses maintenance TTY output and generates traps on selected error messages. This is intended primarily for legacy Meridian 1 systems (Release 21 and earlier) and Meridian Mail systems which cannot generate traps. Text Handler rules can be created by the user to support other serial devices.

- A PC Event Log and Viewer for viewing events and alarms generated on the OTM Server and all of its Windows clients. This Windows application can also generate SNMP traps based on the event severity level.

Figure 267 shows the main components of OTM alarm management. The Trap Master is responsible for handling the SNMP traps from the systems and storing it on the server for retrieval by the Alarm Browser client. The Trap Server distributes traps to applications registered to receive traps, such as Alarm Notification.

The Trap Master and Trap Server are run as Windows NT Services on the OTM Server.

**Figure 267**   OTM alarm management main components
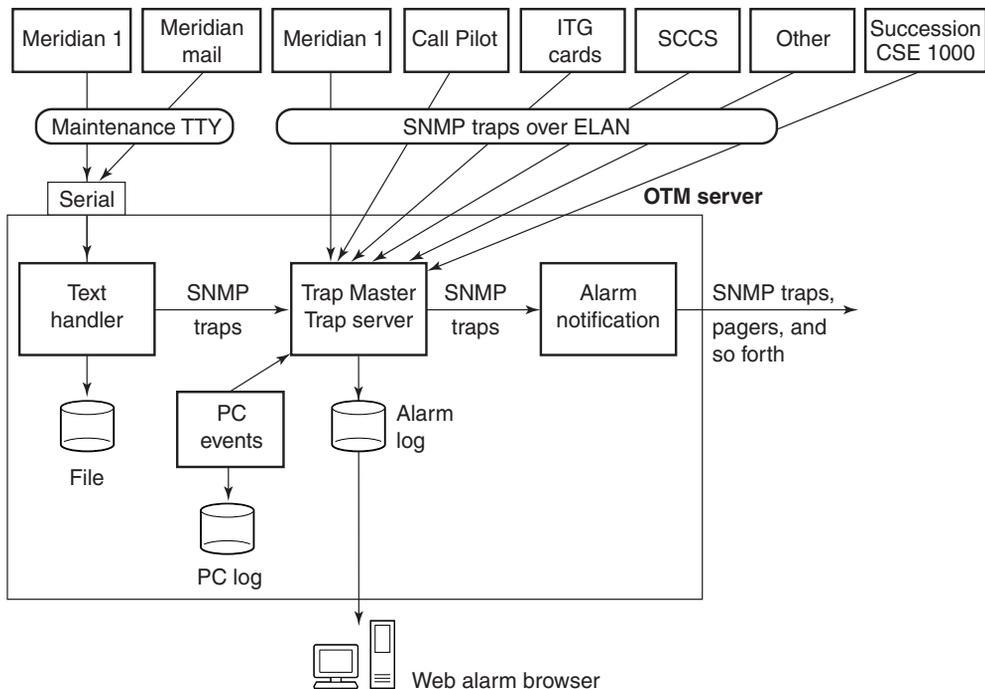
# Alarm management configurations

OTM is the collection point for alarms from Meridian 1 and Succession CSE 1000 workgroup devices. It provides an integrated system view of these alarms. It also provides a gateway to monitor, access, and correct faults for those devices.

You can configure OTM alarm management to met the needs of different users. Typically, there are three levels of administrative responsibilities:

- A single system such as the Meridian 1 or Succession CSE 1000
- Multiple systems in one or more sites
- A large network of voice and data products

The following sections provide an overview of how OTM alarm management can meet the needs of these different users.

## System and device level management

You can configure the Meridian 1 or Succession CSE 1000 system to send SNMP traps to the OTM Server (X11 Release 22 and later for the Meridian 1). You can also configure the Meridian 1 or Succession CSE 1000 system to filter the traps being sent (e.g., only send critical alarms to OTM). The user responsible for the Meridian 1 or Succession CSE 1000 system can use the OTM Windows Alarm Browser to see all the Meridian 1 or Succession CSE 1000 system events and alarms.

You can configure other Meridian products to send traps to OTM. OTM can recognize these traps and provide help for individual alarms. Refer to the respective product documentation for current software release and configuration procedures for the following Meridian products:

- IP Telephony Gateway (ITG)
- Call Pilot
- Symposium Call Center Server (SCCS)
- Meridian Mail 13

The user responsible for these devices can use the OTM Web Alarm Browser to display alarms from a single device.

## Site level management

OTM collects alarms from multiple devices in one or more sites. You can use the Web Alarm Browser to view all of these alarms.

Use the Alarm Notification application when critical alarms occur to identify the notices that are sent and to whom they are sent. Figure 268 shows devices transmitting alarms to the OTM Server.

**Figure 268**   Site alarms
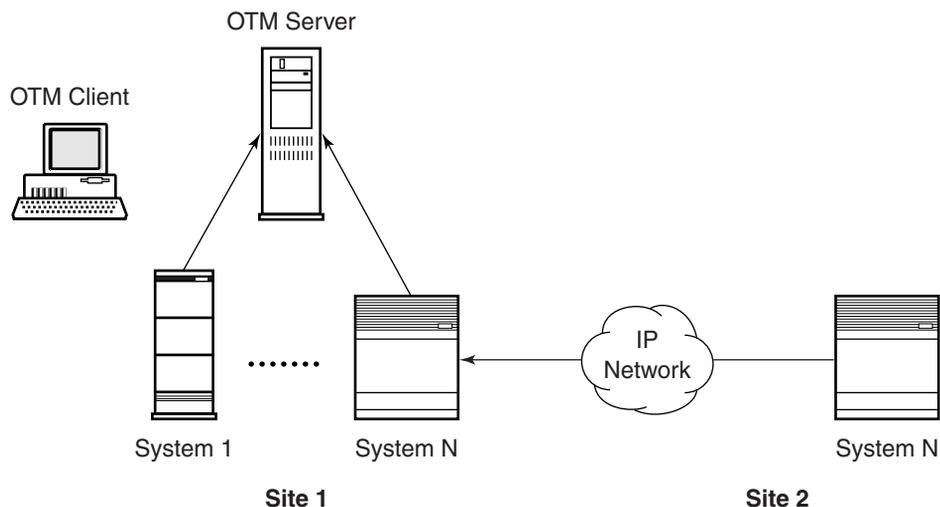


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## Network level management

The devices represented in Optivity NMS are OTM servers that manage individual Meridian 1 and Succession CSE 1000 voice elements. The OTM servers are manually added to the Optivity NMS network by the administrator. OTM is integrated with Optivity NMS 9.0.1 and later.

The OTM Alarm Notification application reformats, filters, and forwards traps to Optivity NMS. Because OTM forms the main representative agent for Meridian 1 systems, Succession CSE 1000 systems, and related voice devices, all alarms received by Optivity NMS result in the change of status state of OTM depicted in the Optivity NMS InfoCenter. The traps are reformatted into the open alarm II format. Typically, only critical alarms are forwarded to Optivity NMS.

When Optivity and OTM co-reside on the same server, the OTM trap system disables its Trap Server and instead sends traps to the Optivity Trap Server.

Figure 269 shows alarms being forwarded from OTM Servers to Optivity NMS.

**Figure 269**   Network alarms
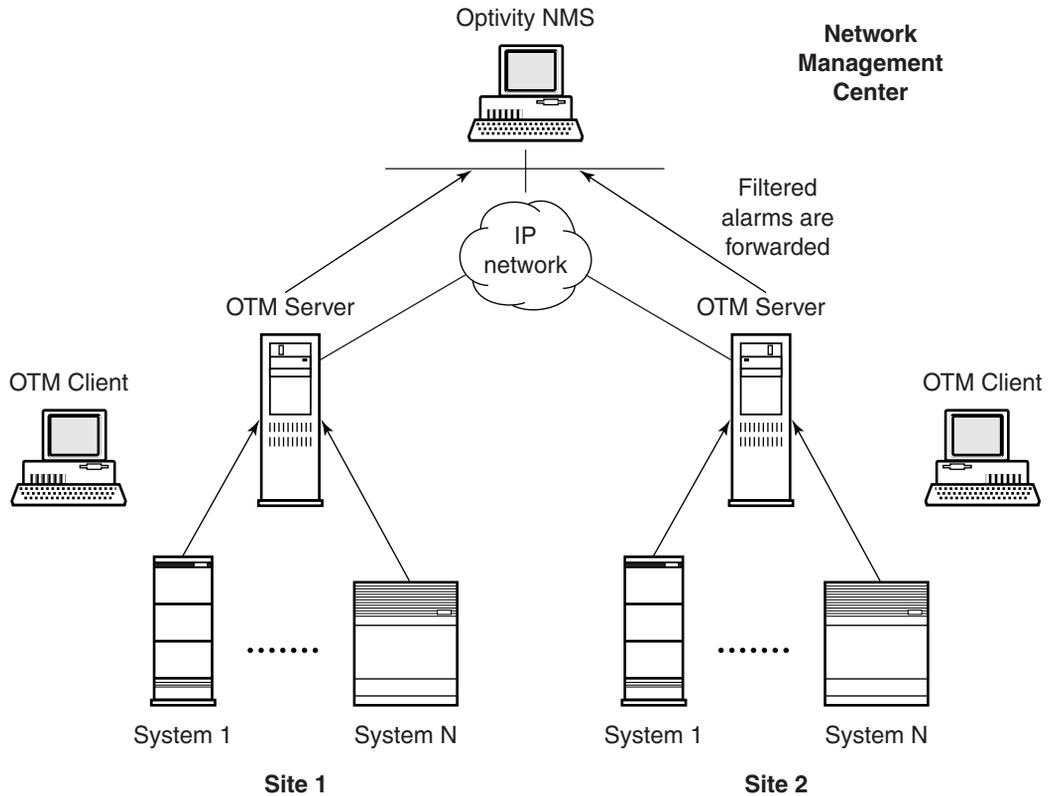


## Optivity NMS InfoCenter

Optivity NMS InfoCenter graphically displays internetworking device fault status in color. Other Optivity NMS applications are available to help you identify the source of the fault.

You can configure the Optivity Telephony Manager as an object in InfoCenter, representing the Meridian 1 and Succession CSE 1000 systems that it manages. OTM-connected systems forward faults to InfoCenter. The fault color represents the fault status of the device.

The applications that you can open for a device depend on the settings in the Application Launch application. For more information on using Application Launch, see the Optivity NMS Application Launch online Help system.

To resolve faults on switches managed by an OTM server, launch the OTM application. This starts a Web browser session with the OTM server. You can then access the Web applications available on the server through the OTM Web Navigator.

The Path Trace feature discovers and displays the connections between resources in the network, including physical and logical paths, and also graphically identifies faults.

The Fault Summary feature displays the faults (or traps) for a single device, multiple devices, or the entire network. Based on the information provided, you can use other Optivity NMS applications to take corrective actions.

# Web-based alarm management

Web-based alarm management provides a list of alarms and events from multiple systems and devices.

## Alarm Browser page

The Alarm Browser page is used to retrieve, view, sort, and view help on alarms received by the OTM server.

### Log in to the Alarm Browser

To view the alarms for all systems monitored by OTM:

**1**   Login to OTM from the Administrator Login page.

The OTM Administrator Current Status page opens.

**2**   Choose Equipment > System Alarms.

The Alarm Browser page opens. This page displays the alarms for all systems monitored by OTM.

To view the alarms for a single system monitored by OTM:

**1**   Login to OTM from the Administrator Login page.

The OTM Administrator Current Status page opens.

**2**   Choose Equipment > System Navigator.

The System Navigator page opens. This page displays the systems managed by OTM.

**3**   Select the system for which you want to view alarms.

**4**   Choose Applications > Alarms.

The Alarm Browser page opens as shown in Figure 270. This page displays the alarms for the selected system.

You can perform the following actions within the Alarm Browser page:

- Filter the list based on severity and system
- Page through the list
- Sort the alarms
- Resize a column to see more information
- View Help on an alarm

**Figure 270**   Alarm Browser page



The list of alarms is not dynamic. Use the OTM Alarm Browser Options dialog box (Figure 271) to set the auto refresh interval and select the number of alarms to be displayed on each page.

## System Alarms table

The System Alarms table in the Alarm Browser page (Figure 270) displays six fields associated with each alarm entry. These fields are Time (received), Severity, Source, Code, Device, and Data. Click on the appropriate column heading to sort the entries by the field of your choice. Double click the alarm entry to display online help for the alarm.

## Alarm Filter pane

Use the Alarm Filter pane in the Alarm Browser page (Figure 270) to select alarm severity, monitored system, and to set Alarm Browser options.

### *Select alarm severity and monitored system*

Use the Show check boxes to select the severity of the alarms that are to be retrieved from the OTM server. You may select the All check box or any combination of the other five check boxes.

Use the System drop down list to select the system to be monitored. You may select All to view alarms from all systems, including systems that are not defined in the OTM Windows Navigator.

The default selections are all systems and all alarms.

When the status of a check box is changed or a new selection is made from the System drop down menu, the change will be reflected in the next auto refresh or when the Refresh or Apply Filter buttons are clicked. The Refresh and Apply Filter buttons initiate a new retrieval and reset the polling timer.

### *Set Alarm Browser options*

To set the Alarm Browser options:

**1**  Click the Options button in the Alarm Filter pane.

The Alarm Browser Options dialog box opens as shown in Figure 271.

**Figure 271** Alarm Browser Options dialog box
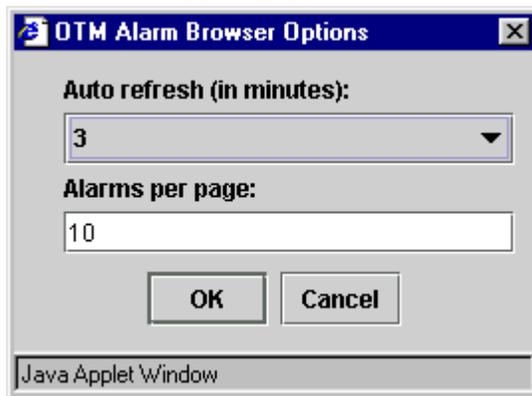


**2** From the drop down list, select a refresh interval between 3 minutes and 10 minutes. The default value is 3 minutes.

> **Note:** The Auto refresh check box in the System Alarms pane of the Alarm Browser page must be checked for auto refresh to occur.

**3** Enter the number of alarms you want OTM to display on each alarm browser page in the Alarms per page box. The number must be in the range 10 to 100. The default value is 10 alarms per page.

**4** Click OK.

> **Note:** The settings in the Alarm Browser Options dialog box and the Alarm Filter pane are temporary. These settings revert to the default values when the browser is closed and reopened

## Alarm details

When an alarm entry is selected, the alarm information and data associated with the alarm are displayed in the Alarm details pane of the Alarm Browser page (Figure 270).

The left side of the Alarm details pane displays the complete information for the selected alarm.

The Operator data box contains all other data for the selected alarm. In addition to operator data, this box may include expert data and sequence number.

### Status bar

The status bar at the bottom of the Alarm Browser page provides a visual indication that new alarms are being retrieved from the OTM server.

> → **Note:** To view information about the menus, toolbar, column headings, and other functions available on the Alarm browser page, use Help.

# Windows-based alarm management

Alarm management consists of a number of components that improve handling of system-generated alarms and events. On Meridian 1 systems, alarm management is only available for systems running X11 Release 22 or later that are configured with the alarm management package (296).

The Meridian 1 and Succession CSE 1000 alarm management components are:

- Text Handler
- Alarm Banner dialog box
- Events Monitor window

## Text Handler

For older Meridian 1 systems, you can use the Text Handler to parse maintenance TTY output and generate traps on error messages. The Text Handler is intended primarily for Meridian 1 systems running X11 Release 21 and earlier and for Meridian Mail systems that cannot generate traps. You can also use the Text Handler to create rules to support serial devices. The Text Handler is a part of the Database Buffering and Access (DBA) application. Refer to "Data Buffering and Access" on page 159 for details.

# Alarm Banner dialog box

You can determine system status by reviewing the history file to look for problems, and by issuing a number of status commands in various overlays to look for disabled or faulty hardware. The Alarm Banner dialog box automatically alerts you to this information in a simple, direct manner.

The Alarm Banner dialog box alerts you to new critical alarms and gives you the count of all new alarms. To learn more about an alarm, you can open the Events Monitor window. If there are no alarms, you can log out or leave the Alarm Banner displayed and go on to another task.

When a new critical alarm arrives, the system beeps if the notification option has been set, and the Alarm Banner title bar icon and Events Monitor window task bar icon flash. The flashing continues until you click anywhere in the Alarm Banner dialog box or Events Monitor window.

## Opening the Alarm Banner dialog box

To open the Alarm Banner dialog box:

➔ Do one of the following:

- Choose Maintenance > Alarm Banner.
- Double-click the Alarm Banner icon in the System window toolbar.

The Alarm Banner dialog box opens as shown in Figure 272.

**Figure 272**   Alarm Banner dialog box
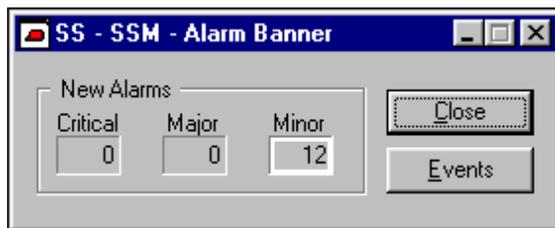
The items in the Alarm Banner dialog box are described in Table 19

**Table 19**   Alarm Banner dialog box items

| Item | Description |
|------|-------------|
| Critical | An alarm that requires your immediate attention. |
| Major | An alarm that needs your attention. |
| Minor | An alarm that you can address anytime. |
| Close | Closes the dialog box. |
| Events | Displays more information about the events that triggered the alarms. |

The Alarm Banner keeps you informed about the current status of the system. You might typically check the current status of the system for the following reasons:

- Standard operating procedure (for example, check every morning)
- Investigating a suspected or reported problem
- Checking and monitoring the system while performing other tasks

## Alarm Banner notifications

The primary function of the Alarm Banner is to notify you when a new alarm arrives in the following ways:

- The outline of the boxes displaying the critical, major, and minor alarm counts flash to indicate the arrival of new alarms.
- The event counts in the Alarm Banner are incremented appropriately.
- One or more beeps sound. This is optional. See "Creating an Event Preference definition" on page 550.

> → **Note:** The Events Monitor window must be active for the beep to sound.

- If you have closed the Alarm Banner dialog box, the sound notification is provided by the Events Monitor window. The window is not brought to the front, because this may interfere with your current task.

There is no alarm notification beep if the sound has been disabled. The count field outline still flashes and the count increments to indicate the arrival of a new alarm.

# Events Monitor window

The Events Monitor window displays the Meridian 1 or Succession CSE 1000 system's Event Log, allowing you to view all recent system alarms and events previously stored in the Meridian 1 or Succession CSE 1000 system's history file. The Events Monitor window displays active events in a way that lets you quickly view the most important events. System events with a severity of critical, major, or minor are considered alarms—alarms are events which may require some corrective action. System events with a severity of Info are for informational purposes only and are not considered alarms.

> **Note:** The Event Log is preserved during and after a sysload and initialization of a Meridian 1 or Succession CSE 1000 system.

## Using the Events Monitor window

Once you open the Events Monitor window, you can:

- Obtain a description of an event
- Acknowledge an alarm you intend to clear—this communicates your intention to others who may be working on the system
- Locate an alarm in the Event file to identify the cause of the problem
- Learn more detail about an alarm
- Mark an alarm as cleared in the list after you have corrected the problem
- Change system event preferences for all subsequent alarms
    — Severity of the alarm
    — Escalation threshold for an alarm type

## Opening the Events Monitor window

To open the Events Monitor window:

➔ Choose Maintenance > Events.

If you are not connected to a Meridian 1 or Succession CSE 1000 system, the connection login window appears.

Once you have connected, the Events Monitor window appears as shown in Figure 273.

**Figure 273**   Events Monitor window
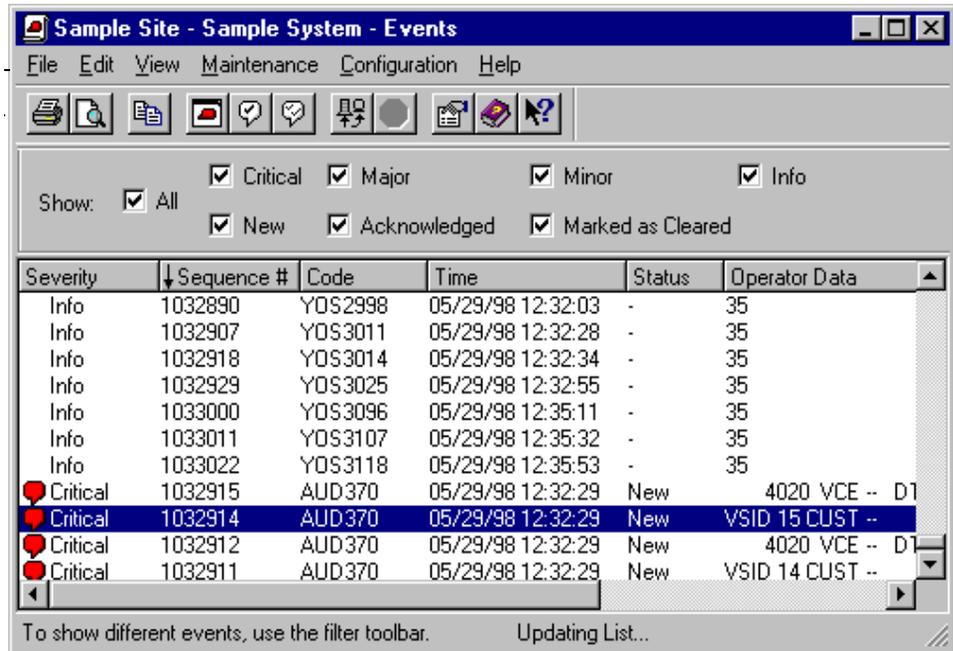


An event remains displayed in the list until expired by the Meridian 1 or Succession CSE 1000 system. The column headings identify and describe the events.

> **Note:** To view detailed information about the menus, toolbar, buttons, and other functions available in the Events Monitor window, use online Help.

## Sorting the event list

Alarms and events are listed in order of occurrence. You can sort the list according to another column by clicking in that column heading. This is useful for prioritizing your work when you deal with a large number of alarms.

Click to sort in ascending order; click again for descending order. An arrow in the column heading indicates the current sort column and sort order.

## Resizing a column in the event list

If the data does not all fit in a column, you can resize a column by dragging the column divider. You can also choose File > Properties to display complete information about a selected event.

Double click on an alarm, or click the What's This button to see reference information in Windows Help.

New critical alarms are indicated by an icon located to the left of the word "Critical" in the Severity column. The icon disappears when the alarm is acknowledged.

## Using the shortcut menu

When you right-click on an alarm, a shortcut menu opens. Table 20 describes the shortcut menu commands.

**Table 20**   Shortcut menu commands

| Command | Description |
|---------|-------------|
| Copy an alarm | Copies selected events to the clipboard. You can then insert the text into another document. Copy is unavailable when no text is selected. |
| Select All alarms | Selects all events in the list. You can print the selected text or copy it to the clipboard and insert it into another document. |
| Acknowledge an alarm | Changes the status of the selected alarm to Acknowledged. This informs technicians on other OTM systems that the problem is being investigated. |
| Mark as Cleared | Changes the status of the selected alarm to Marked as Cleared. This informs users on other OTM systems that the problem is solved. |
| Learn the Properties of an alarm | Displays complete information about the selected event. |
| What's This? general help option | Changes the cursor to a "question mark" cursor and displays help on the next item you select. |

## Event list

The event list provides information about each active alarm. You can resize a column by dragging the column divider to make more room for text. Table 21 describes the event list columns.

**Table 21**   Columns in the event list

| Column | Description |
|--------|-------------|
| Severity | The alarm severity (critical, major, or minor) or a non-alarm event (info). An icon indicates an unacknowledged critical alarm. |
| Sequence | All events are given a unique sequence number. |
| Code | A code that identifies the event. It includes the error category (for example NWS) and a five-digit error number. |
| Time | The date and time that the alarm occurred. |

**Table 21**  Columns in the event list (continued)

| Column | Description |
|---|---|
| **Status** | Current alarm status (appears with a dash "-" for non-alarms). New indicates an alarm has not been acknowledged or cleared. Acknowledged indicates an alarm in the process of being cleared. Marked as Cleared indicates the alarm has been manually cleared. |
| **Operator Data** | Data produced by the equipment that generated the event. Its contents may vary. Typically, it includes a description of the event and the equipment affected (component ID information, such as the loop number or TN). |

## Determining the cause of an alarm

An alarm may be caused by another system event, such as a BUG message. By examining the events immediately preceding an alarm, you may be able to isolate the source of the problem. Use the scroll bar to browse through the event list.

To display Help on a selected alarm:

→ Do one of the following:

- Right-click on an alarm and choose Learn the Properties of an alarm from the shortcut menu.
- Double-click the alarm.

## Acknowledging an alarm that you plan to clear

You can acknowledge a new alarm to inform others that you will investigate the problem and clear the alarm. Your acknowledgment appears in the Status column of the event list. The events are updated for all OTM users.

> **Note:** You cannot acknowledge, or mark as cleared, events with a status of Info. You cannot acknowledge alarms that have been marked as cleared.

To acknowledge an alarm:

**1**  Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Choose Edit > Select All to select all alarms.

> **Note:** You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

**2** Change the status to acknowledged in one of the following ways:

- Choose Maintenance > Acknowledge.
- Right-click and choose Acknowledge an alarm from the shortcut menu.

Once you acknowledge an alarm, the Status field for all selected alarms in the Events Monitor window is marked "Acknowledged."

### Marking an alarm as cleared

After you fix a problem, you will typically mark the associated alarm as cleared. The term *Mark as Cleared* is used because clearing an alarm only indicates that the problem has been fixed—it does not actually fix the problem.

To mark an alarm as cleared:

**1** Select the desired alarm(s) in one of the following ways:

- Click to select a single alarm.
- [Shift]+click to select a range of alarms.
- [Ctrl]+click to select multiple alarms.
- Choose Edit > Select All to select all alarms.

> **Note:** You can usually save time by displaying the type of alarm of interest using the Filter bar before selecting individual alarms.

**2** Change the status to acknowledged in one of the following ways:

- Choose Maintenance > Mark as Cleared.
- Right-click and choose Mark as Cleared from the shortcut menu.

**3** Click OK to confirm.

Acknowledging and clearing alarms is optional. You can clear alarms without first acknowledging them. If you do not clear alarms, the oldest alarms are deleted by the system when it reaches the maximum number of alarms.

> **Note:** Nortel Networks recommends that you clear alarms as you fix problems so that the Events Monitor window accurately reflects the state of the system. Events with a status of Info cannot be acknowledged or marked as cleared. Alarms that have been marked as cleared cannot be acknowledged.

When you clear an alarm, the following happens:

- The Alarm Status field for all selected alarms is updated in the System Event File with "Marked as Cleared."
- The counts in the Alarm banner dialog box are adjusted appropriately for all users.

## Getting details about an alarm

To learn more about selected alarms:

→ Do one of the following:

- Choose File > Properties.
- On the toolbar, click Properties.
- Double-click on an alarm to see online Help information.

## Changing alarm severity or escalation

To specify the severity of events (critical, major, minor, or info) on a per-system basis:

→ Choose Configuration > Event Preferences

The system uses an Event Default Table which predefines the severity of all events. Typically, you modify these settings only when you install or upgrade the system. See "Creating and customizing event preferences" on page 550.

## Viewing the Event Default Table

The Event Default Table contains the default severity settings of all system events. Use the table to verify default settings before you add event preferences.

To display the Event Default table:

**1** Choose Configuration > Event Preferences

**2** Choose Event Default Table from the Help menu in the Event Preferences window (Figure 274).

The Event Default Table window opens (Figure 274).

**Figure 274** A portion of the Event Default Table window

## Creating and customizing event preferences

You can change alarm severities for this system by changing the default alarm severity and escalation threshold using the Event Preferences window. The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. For example, if you set escalation to "10 occurrences in 1 minute" for a minor alarm, the alarm will escalate to a major alarm when it occurs more that 10 times within a 1 minute period. See "Creating an Event Preference definition" on page 550 for steps describing how to set escalation parameters.

Before changing an alarm definition, you may wish to look up the default settings in the Event Default Table. See "Viewing the Event Default Table" on page 549

To open the Event Preferences window:

→ Choose Configuration > Event Preferences

The Event Preferences window opens (Figure 275).

**Figure 275**   Event Preferences window
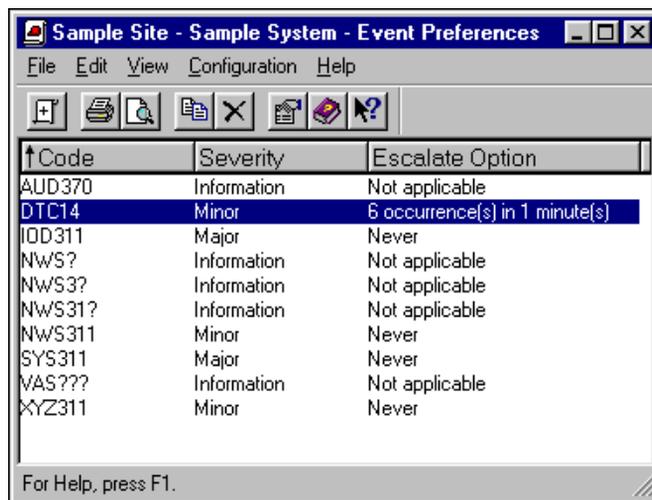


## Creating an Event Preference definition

**1**   Choose Configuration > Add Event Preference.

The Event Preference dialog box opens with the General tab displayed (Figure 276).

**Figure 276**   Event Preference dialog box - General tab
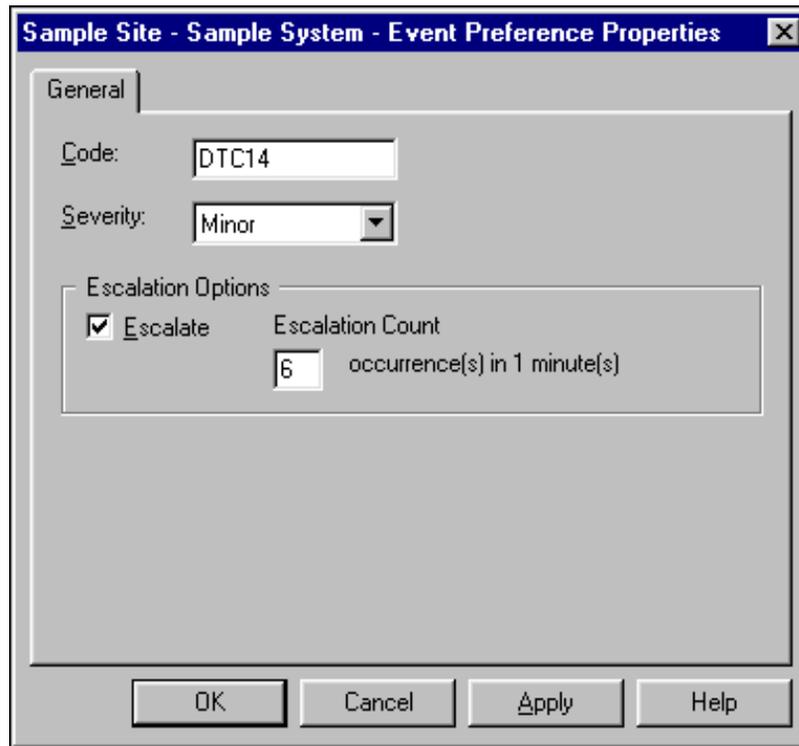


**2**   In the Code field, type the alarm or event ID.

The ID includes the event category, such as BUG, or NWS, and the five-digit event number.

You may use the wildcard symbol ? to represent a group of error code numbers. For example, NWS3?? represents all error codes between NWS300 and NWS399.

**3**   To change the alarm severity, from the severity list, choose a severity type.

**4** To change the escalation threshold, check the Escalate box, and type a number in the Escalation field.

The escalation setting defines the maximum number of times an event can occur within a defined period of time before it escalates to the next higher level of severity. This defined period of time is determined by the Meridian 1 or Succession CSE 1000 system's Global Window Timer. For example, if you set escalation to "10 occurrences in 1 minute" for a minor alarm, the alarm escalates to a major alarm when it occurs more that 10 times within a one minute period.

> **Note:** The Global Window Timer is set in Overlay 117 and can range from 0 to 60 minutes. In this example the Global Window Timer is set to one minute.

**5** Click OK.

## Configuring alarms on the Meridian 1 or Succession CSE 1000 system

The Events Monitor window displays the events stored in the Meridian 1 or Succession CSE 1000 system's Event Log. In order to display the system's events in the OTM Web-based Alarm Browser you must enable the open alarms feature in LD 117. You may also want to suppress minor and informational alarms going to the OTM server.

### Enabling Meridian 1 system alarms with LD 117

To enable alarms with LD 117:

**1** In the OTM system window, on the toolbar, click the System Terminal icon.

The System Terminal Selection dialog box opens.

**2** Click on the Ethernet/PPP (Overlay Passthru) button, and then click OK.

The System Terminal window opens.

**3** Log in with your administrator's user name and password.

You must have appropriate access privileges to use LD 117.

**4** Enter:

**ld 117**

The => prompt appears in the Command Results pane indicating that the system terminal application is ready to accept your input.

**5** Enter:

**prt open_alarm**

A list of slots currently in use is displayed. Slots are numbered from 0 through 7, for a total of eight available slots. Note the number of the next available slot.

**6** Enter:

**set open_alarm <*n*> <*IP_address*>**

where *n* is the next available slot number and *IP_address* is the IP address of your OTM Server. See "Determining the OTM PC's IP address" on page 554 for more information.

> **Caution:** Assigning your IP address to a slot currently in use disconnects that user from the system preventing them from receiving alarm information.

**7** Enter:

**prt open_alarm.**

The list of slots and IP addresses receiving alarms is displayed. Verify that your particular slot and IP address is included.

> **Note:** LD 117 accepts abbreviations of the various commands. For example, you can type the abbreviation **prt op** instead of **prt open_alarm.**

**8** Enter:

**prt suppress**
**prt suppress_alarm**

This shows the current alarm suppression settings.

**9** Enter:

**chg suppress_alarm <*n*>**

This sets the alarm suppression, where $n$ is 0 = All, 1 = Minor, 2 = Major, 3 = Critical. For example, to suppress all alarms except critical, enter 3.

**10** Enter:

```
prt suppress
prt suppress_alarm
```

This allows you to verify the changes.

**11** Enter:

```
prt timer
```

This allows you to view the Global Window Timer setting . The escalation and suppression thresholds are based on the Global Window Timer. The default value is one minute. To change the timer, enter `chg timer <n>`, where $n$ is 0-60 minutes.

**12** Log out and close the system terminal window.

## Determining the OTM PC's IP address

To find your PC's IP address:

**1** From the Windows Start menu, choose Settings > Control Panel.

The Control Panel window opens.

**2** Double-click Network.

The Network dialog box opens with the Configuration tab displayed.

**3** Select the TCP/IP network component used by your PC.

**4** Click Properties.

The TCP/IP dialog box opens with the IP address tab displayed.

**5** Note the IP address shown.

This is the IP address unique to this PC. Enter this information in LD 117 to specify where the alarm event will be received.

*Sample LD 117 session*

The following is a representative sample of a system terminal session using LD 117 to enable alarms. In this example, the OTM PC that will receive alarms has the IP address 47.82.40.6. Slots 0 and 1 are already in use by other PCs. Use the next available slot 2 to enter the new OTM PC IP address. Note the => prompt used by the overlay. All IP addresses are for example purposes only. Additional information about Overlay 117 is available in the online Help

```
login admin1
PASS?
WARNING: THE PROGRAMS AND DATA STORED ON THIS SYSTEM ARE LICENSED
TO OR ARE THE PROPERTY OF NT/BNR AND ARE LAWFULLY AVAILABLE ONLY TO
AUTHORIZED USERS FOR APPROVED PURPOSES. UNAUTHORIZED ACCESS TO ANY
PROGRAM OR DATA ON SYSTEM IS NOT PERMITTED. THIS SYSTEM MAY BE
MONITORED AT ANY TIME FOR OPERATIONAL REASONS. THEREFORE, IF YOU
ARE NOT AN AUTHORIZED USER, DO NOT ATTEMPT TO LOGIN.
BSD000
.ld 117
OAM000
=> prt open_alarm
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
=> set open_alarm 2 47.82.40.6
=> prt op
Open Alarm destination #0 is 47.82.40.237
Open Alarm destination #1 is 47.82.40.119
Open Alarm destination #2 is 47.82.40.6
```

# Alarm Notification application

The Alarm Notification application uses the existing OTM architecture to connect to Meridian 1 systems, Succession CSE 1000 systems, and other supported systems and equipment which can generate SNMP events, to detect specified events. For Meridian 1 and Succession CSE 1000 systems, the SNMP Open Alarms package (315) must be present and activated along with the packages required for OTM.

# OTM alarm notification process

The Alarm Notification application receives SNMP events from designated network equipment over an Ethernet network and sends out alarm notifications when specified event conditions are detected. Received events are compared to a set of rules which may activate notifications of different types. These notifications include:

- SNMP traps or events transmitted to predefined destinations
- Text notification over a modem
- Pager notification to alpha or numeric pagers
- Electronic mail using Simple Mail Transfer Protocol (SMTP)
- Log

> **Note:** The log is not an alarm notification but is included because it describes system events.

SNMP events are displayed at the OTM PC in the Alarm Notification window. You can also view events with a Web browser connected to a configured Web server. When the application starts, three application control files are loaded: a devices file, a configuration file, and a scripts file.

> **Note:** These control files must be present and configured for the Alarm Notification application to work correctly. See "Setting up alarm notification" on page 559.

The devices file specifies the SNMP devices to be monitored. You must define the devices file before you can start alarm monitoring. A sample devices file, Devices.txt, is provided in the OTM directory.

The configuration file defines the event information (SNMP traps) that may be received. The file should contain definitions for all SNMP traps that may be sent by devices specified in the devices file. Event values are mapped to variable names which you may use in the scripts file. You must define the configuration file before you can start alarm monitoring. A sample configuration file, Config.txt, is provided in the OTM directory.

The scripts file defines how alarms are processed and which notifications are used.

Figure 277 shows a functional overview of the Alarm Notification application.

**Figure 277**   Overview of Alarm Notification application
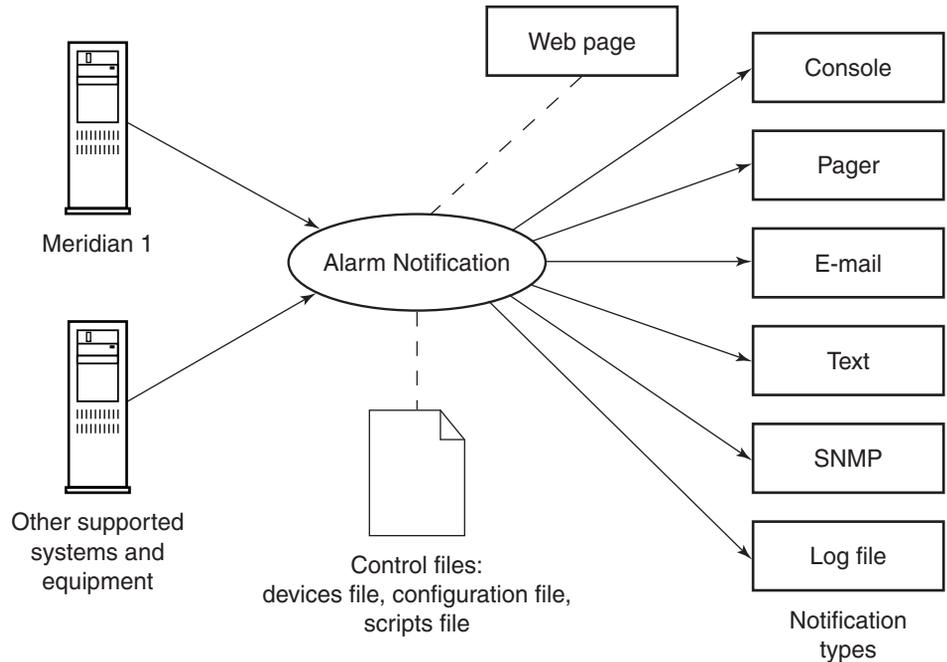


9930EA

A scripting language is included within the application to allow you to define alarm processing and notifications. An external text editor is required to create scripts.

Use the scripting language to define:

- How to process events
- New responses and notifications to predefined events

> **Note:** Events from undefined devices are ignored.

## Opening the Alarm Notification window

To access the Alarm Notification window:

→ Choose Utilities > Alarm Notification.

The Alarm Notification window opens. See Figure 279.

> **Note:** The first time you start the Alarm Notification application, the welcome dialog box in Figure 278 opens. Subsequent sessions do not display this dialog box.

**Figure 278**   Welcome to Alarm Notification dialog box
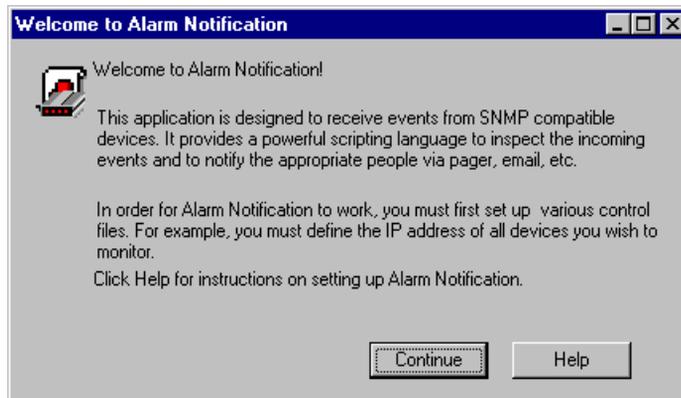


→ Click Continue.

The Alarm Notification window opens. See Figure 279

or

→ Click Help.

The online Help for setting up the control files opens. See Figure 280

**Figure 279**   Alarm Notification window
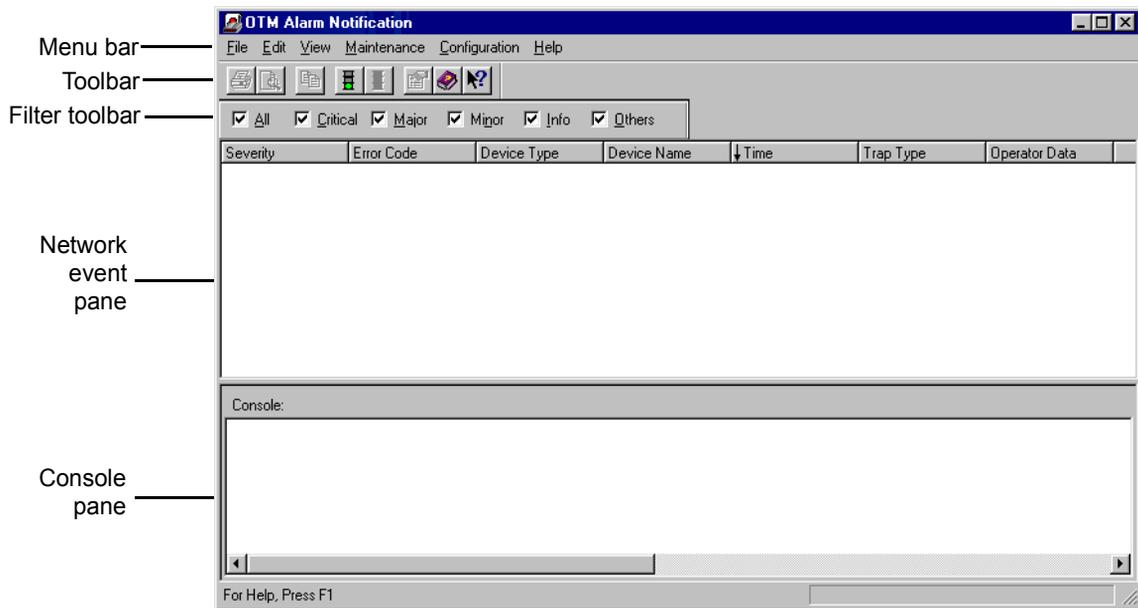


The top pane of the Alarm Notification window, the Network Events browser, displays all events received since starting the application. The bottom pane, called the console, displays notifications defined in the script sent to *con*.

To view information about the menus, toolbar, column headings, window panes, and other functions available in the Alarm Notification window, use Help.

You use the Alarm Notification window to:

* Start, stop, and restart alarm processing
* Specify the control files used by the application
* View events as they are received from defined systems and devices
* View script and notification output in the console as they are received
* View received events

## Setting up alarm notification

Before alarm notification can function correctly, you must set up control files. Control files include the devices file, the configuration file, and the scripts file.

To set up alarm notification, complete the following tasks:

- Make sure you have the control files correctly installed and the Run Options defined. See "Setting up a devices file" on page 561 for more information.
- Determine the IP address of your OTM PC on which you will view the events. This PC must have Alarm Notification correctly installed. The PC must be networked with the system to be monitored. See "Determining the OTM PC's IP address" on page 554 for information on determining the IP address.
- Use Overlay 117 to enable alarms to be sent to your OTM PC. See "Enabling Meridian 1 system alarms with LD 117" on page 552.

## Installing Alarm Notification control files

Make sure you have the control files correctly installed. Control files define which systems are monitored and which events are processed. For detailed instructions about defining Run Options, consult the online Help (Figure 280).

**Figure 280** Help for setting up control files
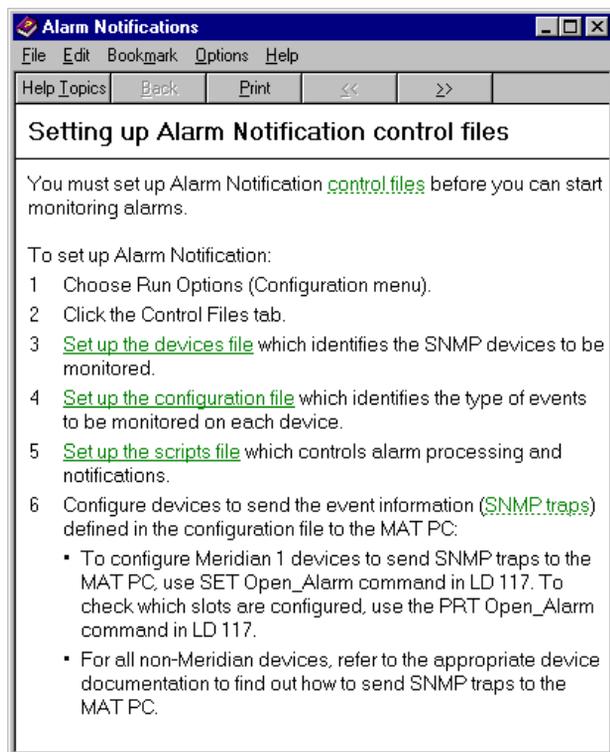
*Setting up a devices file*

The devices file contains the list of monitored systems. SNMP traps that a device sends must be defined in the configuration control file. You can add reference information to monitored systems specifying:

- The IP address of the system or its system name
- An alias for any system name or IP address

> → **Note:** Within the Alarm Notification application, you can reference systems by the specified alias.

See Appendix C, "Control files included with alarm notification," for more information about the contents of the devices file.

To set up a devices file:

**1** In the Windows Explorer, rename a copy of the sample Devices.txt file, located in the OTM directory:

    X:\Nortel\Common Data\Alarm Notification\Control Files

For example, the new filename might be *my_devices*.

> ⬛ **Caution:** Do not work directly in the sample Devices.txt file. This file is overwritten when OTM is reinstalled or upgraded and any changes will be lost.

**2** In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

**3** Click the Control Files tab (Figure 281).

**Figure 281**   Alarm Notification Run Options window, Control Files tab
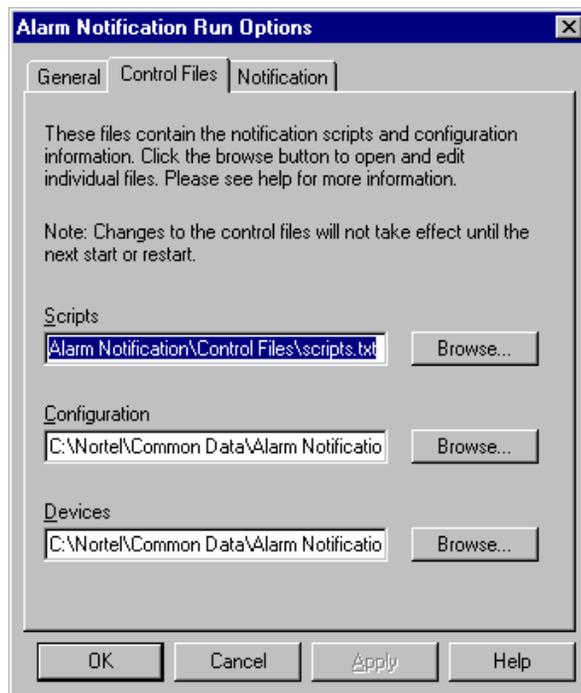


**4**   Next to the Devices field, click Browse.

The Open dialog box opens.

**5**   Find and select the new devices file and click Open.

**6**   Replace the IP address following "Meridian1" with the IP address of your Meridian 1 or Succession CSE 1000 system.

You may also provide an alias.

**7**   For each additional Meridian 1 or Succession CSE 1000 system or non-Meridian device to be monitored, enter a device type name, an IP address, and (optionally) an alias.

- Device type represents the type of device, for example, "XYZrouter". You use this name in the configuration file to identify SNMP traps.

- IP address or PC host file name. If the PC host file is used, the address is obtained from the PC host file.

- Aliases are alternate names you can define, that identify each device within the Alarm Notification window.

**8**   Save the file as text and close the window.

> ➡️   **Note:** Keep a backup copy of your devices file on your local drive.

**Example of device file entries listing monitored Meridian 1 systems:**

```
Meridian1 147.114.45.6 nmkpy716
Meridian1 147.114.45.4
Meridian1 nmkpy711 myM1
```

*Setting up a configuration file*

A sample configuration file for Meridian 1 or Succession CSE 1000 systems is provided. Complete the following procedure only if you want to monitor additional devices, such as routers or printers. Otherwise, you may skip this procedure. See Appendix C, "Control files included with alarm notification," for more information about the contents of the configuration file.

To set up a configuration file:

**1**   In the Windows Explorer, rename a copy of the sample Config.txt file, located in the OTM directory:

```
X:\Nortel\Common Data\Alarm Notification\Control Files
```

For example, the new filename might be *my_config*.

> ⛔   **Caution:** Do not work directly in the sample Config.txt file. This file is overwritten when OTM is reinstalled or upgraded and any changes will be lost.

**2**   In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

**3**   Click the Control Files tab. See Figure 281 on page 562.

**4**   Next to the Configuration field, click Browse.

The Open dialog box appears.

**5** Find and select the new configuration file, and click Open.

**6** To add a new SNMP trap, type the word *device* followed by the device name (as defined in the devices file), followed by the major and minor trap types associated with the device (refer to the device manual), or the appropriate SNMP MIB.

**7** Below the device name, enter the following information for each event to be monitored on the device:

- Object identifier associated with the event (refer to the device manual to find this information).
- Variable type (only 'integer' and 'string' are supported).
- Variable name (you will use the variable name to refer to this event in notification scripts).
- Event name (in quotations). This name identifies the event in the Alarm Notification window.

  See "Example of configuration file entries for Meridian 1 systems:" on page 565.

  You may use the standard Meridian 1 and Succession CSE 1000 system event definitions (variable type, variable name, and event name) to define similar variables for non-Meridian devices. The standard Meridian event names map the event values to corresponding fields within the Alarm Notification window and Event Properties sheet. If non-standard definitions are used, event information appears in the Additional Information field.

**8** Repeat steps 6 and 7 for each non-Meridian 1 or Succession CSE 1000 device to be monitored.

**9** Save the file as text and close the window.

The following example shows the standard configuration file to process Meridian 1 and Succession CSE 1000 system events. Modify this file to add other systems to be managed. Users should be familiar with scripting logic and programming principles to effectively use and extend this application's capabilities.

**Example of configuration file entries for Meridian 1 systems:**

```
device Meridian1 6.10 {
1.3.6.1.4.1.562.3.3.7.1.0 integer $CurrentAlarmSeqNum
1.3.6.1.4.1.562.3.3.7.2.0 string $CurrentAlarmTime
1.3.6.1.4.1.562.3.3.7.3.0 integer $CurrentAlarmSeverity "Severity"
1.3.6.1.4.1.562.3.3.7.4.0 string $CurrentAlarmErrorCode "Error Code"
1.3.6.1.4.1.562.3.3.7.5.0 string $CurrentAlarmComponentId
1.3.6.1.4.1.562.3.3.7.6.0 string $CurrentAlarmComponentAddress
1.3.6.1.4.1.562.3.3.7.7.0 string $CurrentAlarmDescriptiveText "Text"
1.3.6.1.4.1.562.3.3.7.8.0 string $CurrentAlarmOperatorData "OperatorData"
1.3.6.1.4.1.562.3.3.7.9.0 string $CurrentAlarmExpertData "Expert Data"
1.3.6.1.4.1.562.3.3.7.10.0 string $CurrentAlarmCounts
}
```

Contained in the configuration file is a set of SNMP trap definitions, each followed by a list of the monitored devices of that type. Each trap definition begins with the word device, followed by the device name, and followed by a list of variables for the defined trap. For the example above, the designated name is Meridian 1, and the trap number is 10.

The next lines contain SNMP object identifiers, followed by a variable type, and followed by a variable name and an optional printable name in quotes. The variable name may be referenced in the scripting language and the printable name is displayed in the Network Event browser pane in the Alarm Notification window.

> → **Note:** Only integer and string values are supported in the device definition entries.

*Setting up a scripts file*

The scripts file defines alarm processing and notification. A sample scripts file is provided which you can modify. See Appendix C, "Control files included with alarm notification," for more information about the contents of the scripts file.

To set up a scripts file:

**1** In the Windows Explorer, rename a copy of the sample Scripts.txt file, located in the OTM directory:

X:\Nortel\Common Data\Alarm Notification\Control Files

For example, the new filename might be *my_scripts*.

> ⬛ **Caution:** Do not work directly in the sample Scripts.txt file. This file is overwritten when OTM is reinstalled or upgraded and any changes will be lost.

**2** In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

**3** Click the Control Files tab. See Figure 281 on page 562.

**4** Next to the Scripts field, click Browse.

The Open dialog box appears.

**5** Find and select the new scripts file, and click Open.

**6** Using the sample script as a guide, create your own notification script file.

For an example of scripts files, see "Sample Alarm Notification Scripts" on page 586 and Appendix C, "Control files included with alarm notification."

**7** Save the file as text and close the window.

A script includes variables, rules, notifications, functions and logical expressions that evaluate and may apply to event data. See "Scripting" on page 568. Values defined within a script are exclusive and visible only to that script. The script container is delimited by "curly" brackets { }. You can define global values that are visible to all scripts.

When the Alarm Notification application starts, each script is executed in the order defined in the script file.

*Setting up auto-start for scripts*

Once the control files are defined, use the following procedure to automatically load the scripts when you start the Alarm Notification application:

**1** In the Alarm Notification application, choose Configuration > Run Options.

The Alarm Notification Run Options dialog box opens with the General tab displayed.

**2**   Click the box marked "Auto-start scripts on program launch."

The scripts are automatically loaded each time that you start the application.

## Events processing

Events received are displayed in the network event pane. As each event is received, it is placed in a queue for processing by the application. Each event is checked to see if it originates from a defined system or supported equipment. Events received from undefined systems devices are ignored and discarded from the queue.

The application executes every applicable script for each specific event type. If a rule is matched to an event type, the output is displayed in the Alarm Notification window console pane and/or sent as one of the other available notification types, for example e-mail or pager, according to the script. Output to the console pane occurs immediately but notifications are written to disk.

The notification process periodically polls the notifications and sends them to the specific device or function for this notification type. If directed by the script, results of the notification are displayed in the console pane. If a failure occurs due to power interruption or software or hardware error, the unprocessed notifications are completed on restart.

## Viewing events properties

The Alarm Notification application receives events from many different systems and devices. Each event source may have different characteristics requiring you to enter different information to fully define an event source. You can identify the event source in the Event Properties dialog box.

To view event properties:

**1**   In the network even pane, select an event.

**2**   Click Properties.

The Event Properties dialog box opens with the General tab displayed.
(Figure 282)

**Figure 282** Event Properties dialog box - General tab



For information on the fields in the Event Properties dialog box, refer to online Help.

> ➡ **Note:** The Event Properties dialog box is optimized for Meridian 1 and Succession CSE 1000 system events.

The Alarm Notification application processes events you have defined in the configuration file from specific systems or devices you have defined in the devices file. Events from undefined systems or devices are ignored.

## Scripting

Scripting is the process of using the syntax of the programming language in the Alarm Notification application to create text files specifying that certain actions be taken for defined events. A script includes one or more logical expressions that evaluate event data and provide notification instructions. The script file may contain many scripts. When the Alarm Notification application starts, all scripts are run against each new event as it is received.

Scripts are run in the order defined in the script file. To cause a script to be skipped when it is not applicable, use the *when* operator. You must be familiar with scripting logic and programming principles to effectively use and extend this application's capabilities.

Scripting syntax includes the following:

- Data types
- Operators
- Notifications
- Rules
- Comments
- Functions

The syntax is described in the following sections. Consult the online Help for specific examples of scripting syntax.

## Data types

The scripting language supports three data types:

- Counter

  Counters contain signed integer values. You may assign values to counters when you define them. And, you may include multiple variables of the same data type in the same statement.

- Timer

  Timers are counters that are automatically incremented when the time changes. Default timers increment once every minute. You may define specific update intervals other than the default increment.

- String

  Strings contain arbitrary alphanumeric data. A default string contains up to 80 characters. If more data is placed in a string than the string definition allows, the application truncates the entry.

## Operators

Scripts usually contain a logical expression for testing event data. Logical expressions support operators, that you can use in any combination and with the aid of parentheses to clarify the order of operations.

The Alarm Notification application supports the operators described in Table 22.

**Table 22** Operators

| Operator | Description |
|----------|-------------|
| +, -, *, / | Addition, subtraction, multiplication, division |
| <, <= | Less than, less than or equal |
| >, >= | Greater than, greater than or equal |
| =, != | Equal, not equal |
| <> | Contains (look for substrings) |
| and, or | Logical and, logical or |
| := | Assigns a value to a variable. The data types must agree or a compiler error will result when the script is executed. If a value is assigned to a string value, the string must be declared large enough to contain the new value. |

For an example of how some of these operators are used, see "Sample Alarm Notification Scripts" on page 586 and Appendix C, "Control files included with alarm notification."

## Notifications

Notifications define the message text and the means by which it is conveyed. The Alarm Notification application supports the notification types shown in Table 23.

**Table 23** Notification types

| Name | Definition |
|------|------------|
| console | Sends output to the console pane in the Alarm Notification window. This type of notification is the simplest and contains no fields. |
| npager, apager | Sends messages to numeric (npager) or alphanumeric (apager) pagers. |
| email | Sends an e-mail message to a remote system using Simple Mail Transfer Protocol (SMTP). For e-mail to work correctly, an SMTP-capable host must be accessible to the OTM PC. |

**Table 23**   Notification types (continued)

| Name | Definition |
| --- | --- |
| modem (text) | Sends message text from the OTM PC to a remote system, such as an alarm collection management workstation through an attached modem. To use this feature, a modem and a phone line must be connected, supported, and available. If the destination is busy, the Alarm Notification application will retry later or send the message to an alternate destination. Use the Alarm Notification Run Options dialog box to define additional actions. |
| snmp | Sends SNMP traps to a remote system |
| file | Saves the output to disk as a text file |

## Notification types

All notification types except console accept the days and times fields. The days field may contain a quoted list of valid days, for example, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, or a range of valid days, for example, Sunday-Saturday. You may specify different destinations depending on the current day, date, time, or alarm notification type.

Using the send syntax, you can direct Alarm Notification to deliver six types of notifications:

- Console
- Pager
- E-mail
- Text (over modem)
- SNMP
- Log file

### Console

The console notification type displays a notification in the console pane in the Alarm Notification window. No parameters are required. A default console notification, con, is provided.

**Example:**

```
// (no definition necessary)
.
.
.
// send a console notification
send(con,"M1 alarm: ",
     $CurrentTrapSource," - " ,          // Name of this M1
     $CurrentAlarmErrorCode," - " ,      // M1 error code (i.e., BUG1234)
     $CurrentAlarmTime," - " ,           // Timestamp from M1
     $CurrentAlarmDescriptiveText," - ", // Text with error message
     $CurrentAlarmOperatorData);         // More text with error message
```

> **Note:** This script displays the text "M1 alarm:," then the values for the
> listed traps which includes the name of the system, the error code, the
> time when the alarm occurred, and text associated with the error code.
> Note the use of con with the send syntax in the script.

## *Pager*

Alarm Notification supports both alphanumeric and numeric pagers. You define
the list of paging destinations and supported functionality for each pager. Be sure
you have a modem and a valid phone line connection. Messages must match the
pager type: up to 30 characters for alphanumeric pagers and only digits for
numeric pagers.

Mandatory parameters are:

- phone:="408-555-1212";

  The phone number you dial to connect to your pager service.

- pin:="123456";

  The alpha numeric pager's PIN number, for the type apager only.

**Example:**

The following example shows a script defined to call an alphanumeric pager named "my_pager" only on Monday and Thursday through Saturday, from 9 a.m. to 5 p.m. The PIN and the pager service number are specified. Note that the number needed to access an external phone line is included.

```
notification apager my_pager
{
   days:="monday, thursday-saturday";
   times:="9am-5pm";
   pin:="123456";
   phone:="9,408-555-1212";
}
```

> **Note:** The indentations facilitate reading the script and do not affect how the script is interpreted by the application.

## *E-mail*

You can write a message that the application sends to a specified list of recipients. The application uses Simple Mail Transfer Protocol (SMTP) to send the message. To make this notification type work correctly, you must have an SMTP-capable host connected and accessible to the OTM PC. You must configure the host in OTM before activating this feature. Each send statement is treated as a separate e-mail message.

E-mail messages coming from Alarm Notification are sent with "OTM" as the sender. The receiving e-mail program may try to match OTM with a corresponding local user account and displays the closest match in the e-mail's header. Although the header information may not be accurate due to mismatches between the term "OTM" and the local user account information, the e-mail message is still displayed as defined by the notification.

Mandatory parameters are:

*   from:="OTM";

    The sender's valid e-mail address.

- ```
  address:="support@tech.com";
  ```

  The recipient's valid e-mail address.

- ```
  server:="192.9.200.1";
  ```

  IP address or host name of SMTP mail server.

**Example:**

```
// define an email notification
   notification email my_email {
      from:="OTM";
      address:="joe@acme.com";
       server:="192.9.200.1";
}
.
.
.
// send an email message
send (my_email,$CurrentTrapSource,"-MPK alarm:",
$CurrentAlarmErrorCode);
```

> ➡ **Note:** This script defines an e-mail notification named "my_email"
> which has an associated recipient address and the mail server IP address.
> This script sends e-mail to the address stating the source of the alarm and
> the alarm error code. Note the use of the named e-mail notification
> my_email with the send syntax in the script.

### *Text (over modem)*

The text notification type allows you to write a message that the application sends
to a remote modem. The application connects to the remote modem, usually a
remote support site that you have defined, and transmits the message. Be sure that
you have a modem and a valid phone line connection.

If the remote modem is busy, the application stores and notes the message for a
later delivery or sends it to another specified alternate destination.

Mandatory parameters are:

- ```
  phone:="408-555-4321";
  ```

  The phone number you dial to connect to the remote modem.

**Example:**

```
//define text over modem notification
   notification modem tech_center   {
   phone:="9,555-4321";
  }
.
.
.
//send text over modem notification
send (tech_center,$CurrentTrapSource,"-MPK alarm:",
$CurrentAlarmErrorCode);
```

> ➡ **Note:** This script defines a modem notification named "tech_center"
> which has an associated number to dial to connect to the remote modem.
> This script sends text to the dialed remote modem stating the source of
> the alarm and the alarm error code. Note the use of the named modem
> notification tech_center with the send syntax in the script.

## *SNMP*

You can request that the OTM PC generate Simple Network Management
Protocol (SNMP) traps. You define SNMP Object Identifiers (OIDs) as
parameters in the send syntax. Specify a list of TCP/IP addresses or registered
host names on the Ethernet network to receive the trap; however, receipt is not
guaranteed once messages are transmitted. You must be familiar with and
knowledgeable about SNMP to effectively utilize this notification type.

Mandatory parameters are:

- address:="192.9.200.1";

  IP address or hostname of the destination for the trap.

- trap:="6.10";

  Trap type in Major type.Trap number format.

Example:

In this example, control_center is already defined as an SNMP notification.

```
// define an SNMP notification
   notification snmp control_center {
       address:="192.9.200.1";
       trap:="6.10";
   }
.
.
.
// send an SNMP notification to the control center with the same trap
//format as the M1

   send(control_center,
"1.3.6.1.4.1.562.3.3.7.1.0","Integer",$CurrentAlarmSeqNum,
"1.3.6.1.4.1.562.3.3.7.2.0","OctetString",$CurrentAlarmTime,
"1.3.6.1.4.1.562.3.3.7.3.0","Integer",$CurrentAlarmSeverity,
"1.3.6.1.4.1.562.3.3.7.4.0","OctetString",$CurrentAlarmErrorCode,
"1.3.6.1.4.1.562.3.3.7.5.0","OctetString",$CurrentAlarmComponentId,
"1.3.6.1.4.1.562.3.3.7.6.0","OctetString",$CurrentAlarmComponentAddress,
"1.3.6.1.4.1.562.3.3.7.7.0","OctetString",$CurrentAlarmDescriptiveText,
"1.3.6.1.4.1.562.3.3.7.8.0","OctetString",$CurrentAlarmOperatorData,
"1.3.6.1.4.1.562.3.3.7.9.0","OctetString",$CurrentAlarmExpertData);
```

> **Note:** The script identifies the value of each variable in the trap generated, whether an integer or an octet string.

### *Log file*

The log file notification type writes a message that the application saves to a text file. You specify the storage location of this text file in the script. If no path name is specified, the file is saved in the same directory as the Alarm Notification application.

Mandatory parameters are:

- `filename:="c:\Normat\sample_log";`

  Full path name and filename.

**Example:**

```
// define a file notification
notification file sample_file {
filename   :=  "c:\eventlog.txt";
}
.
.
.
// send a file notification
send(sample_file, "M1 alarm: ",
$CurrentTrapSource," - " ,           // Name of this M1
$CurrentAlarmErrorCode," - " ,       // M1 error code (i.e., BUG1234)
$CurrentAlarmTime," - " ,            // Timestamp from M1
$CurrentAlarmDescriptiveText," - ",  // Text with error message
$CurrentAlarmOperatorData);          // More text with error message
```

> **Note:** This script defines a log file notification named "sample_file"
> having an associated path name defining a storage location on the
> c: drive. The store file is named eventlog.txt. Note the use of the named
> file notification sample_file with the send syntax in the script.

## Rules

Rules allow you to define actions that may be applied to a given event. Rules may
only be defined in scripts. By default, rules are examined in a top-down manner.
You may use an infer statement to explicitly specify the order in which rules are
examined. A rule consists of an if statement containing a logical expression,
followed by an instruction.

A rule may also include an else statement, which is only executed if the logical
expression in the if statement is false. Within a rule, a send statement or a function
may be called. New variables may not be defined within the scope of a rule.

## Comments

Comments provide a convenient way of adding informational notes within a
script. To include comments within a script, use the C conventions (begin with /*
and end with */) or C++ conventions (begin the comment with //).

**For example:**

```
/* This is a comment. */

// This is another comment.
```

> **Note:** Many of the scripts presented in this chapter have portions noted as comments. Remove the comment tags for the application to interpret these as actual scripting code.

### Functions

Functions contain a combination of logical expressions and optional variable declarations. They accept parameters and return a single result. You may invoke functions either within logical expressions or rules, or within themselves. Within a function, assignments may occur along with `if` and `loop` statements.

## Alarm Script Wizard

The Alarm Script Wizard is a graphical easy-to-use tool that enables you to define, consult, and edit the notifications sent when OTM receives an alarm message.

> **Note:** The Alarm Script Wizard generates scripts that can be compiled by the Alarm Notification script compiler. The Script Wizard is not able to open scripts that are not generated by it. If you edit a generated script file, the script is no longer understood by Script Wizard.

Use the Alarm Script Wizard to create basic script files. To define more elaborate notification rules, see "Scripting" on page 568.

### Starting the Alarm Script Wizard

To run the Script Wizard:

**1** From the Windows Start Menu, choose Programs > Alarm Script Wizard.

The Alarm Script Wizard window opens (Figure 283).

**Figure 283**   Alarm Script Wizard
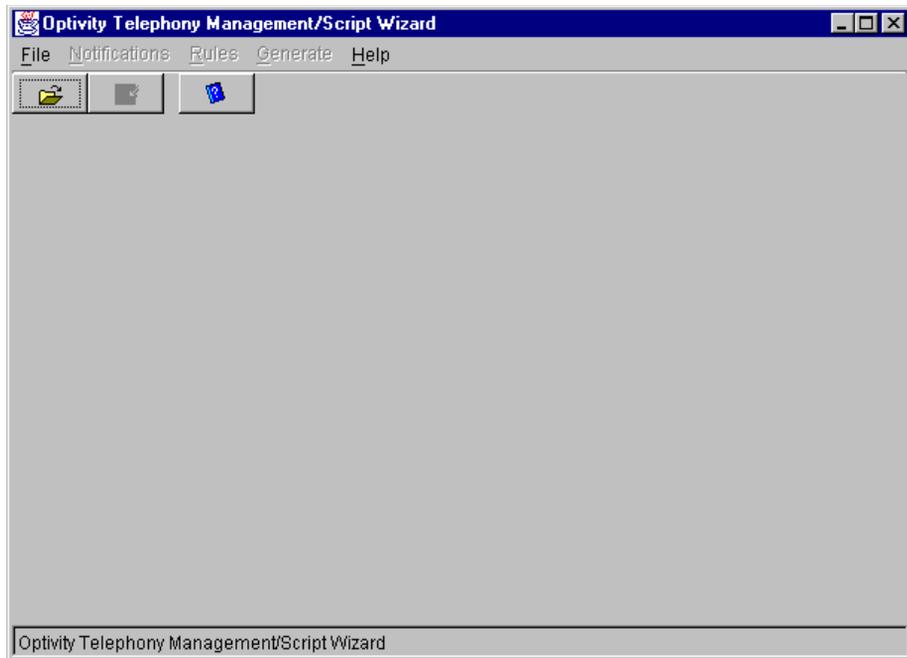


2   To open a script file, do one of the following:

- Choose File > Open

- On the toolbar, click Open

The Select script file window opens (Figure 284).

**Figure 284** Select script file window
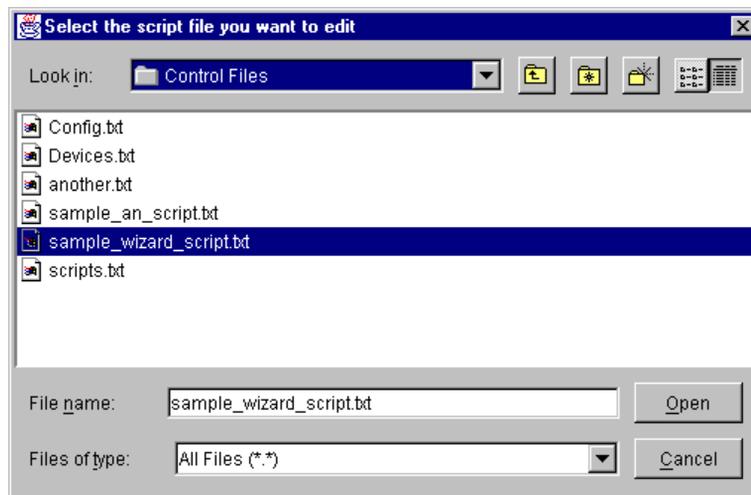


**3** Select the appropriate filename

**4** Click Open.

The script file is loaded into the Script Wizard.

When the existing script is loaded or a new script is created, the main Script Wizard screen opens (Figure 285).

**Figure 285** Main Script Wizard window
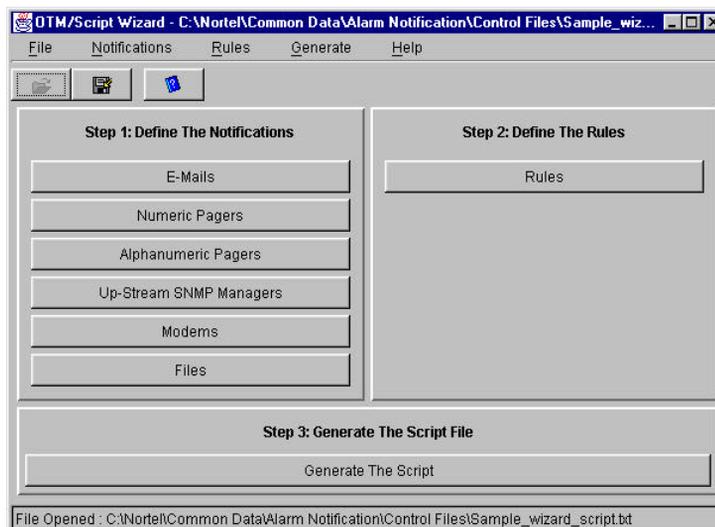
> **Note:** To view information about the menus, toolbar, buttons, and other functions available in the Script Wizard window, use online Help.

The three major parts of the main Script Wizard window are identified as:

- Step 1: Define The Notifications
- Step 2: Define The Rules
- Step 3: Generate The Script File

In Step 1, you select the type of notification that you want to generate. See "Defining the Notifications" for information on completing Step 1.

In Step 2, you defines the rules that will determine when a notification is to be sent. See "Defining the Rules" on page 582.

The final step is to generate the script. See "Generating the Script File" on page 585.

## Defining the Notifications

A list of available notification types is shown in the Main Script Wizard window. There are six available notification types:

- E-Mails
- Numeric Pagers
- Alphanumeric Pagers
- Up-Stream SNMP Managers
- Modems
- Files

Clicking on one of the notification types opens the corresponding definitions window. You use the definition window to edit notification parameters. Figure 286 shows the E-Mail Notification Definition window.

**Figure 286** E-Mail Notification Definition window

```
E-Mail Notification Definitions - C:\Nortel\Common Data\Alarm Notificat...  _ □ ✕

Notification Name:      samplemail
Frequency:              3
E-Mail Address:         name@company.com
SMTP Server IP Address: 0.0.0.0
Message:                DATE&TIME : Device n.n.n.n generated a m.n
                        trap with severity level: SEVERITY.

Record 1 of 2
```

> **Note:** To view information about the menus, toolbar, buttons, and other functions available in the Definition windows, use online Help.

> **Note:** A Frequency is associated with each notification. The number entered in the Frequency field indicates the number of times the notification is called by the program before the action is actually executed. In the example shown in Figure 286, the E-Mail will be sent after the third occurrence of the notification.

## Defining the Rules

Rules allow you to define actions that will be applied to a given event or condition. Each rule is defined by a unique Rule Name. You can add, remove, and edit a rule. Rule definition is divided into three sections. The first section, Define Condition, is shown in Figure 287. This section defines a test to be applied to each alarm processed by the application. A condition is composed of five segments or sub-conditions.

> **Note:** To view information about the menus, toolbar, buttons, and other functions available in the Define Condition window, use online Help.

**Figure 287**    Define Condition window



The second section, Define Actions if True, describes the actions to be taken if the condition defined in the first section is true. This section is shown in Figure 288. The action should be a reference to an already defined notification. See Figure 286. A minimum of one action is required. You may enter up to three actions for each type of notification for a total of eighteen actions.

→ **Note:** To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If True window, use online Help.

**Figure 288** Define Actions If True window
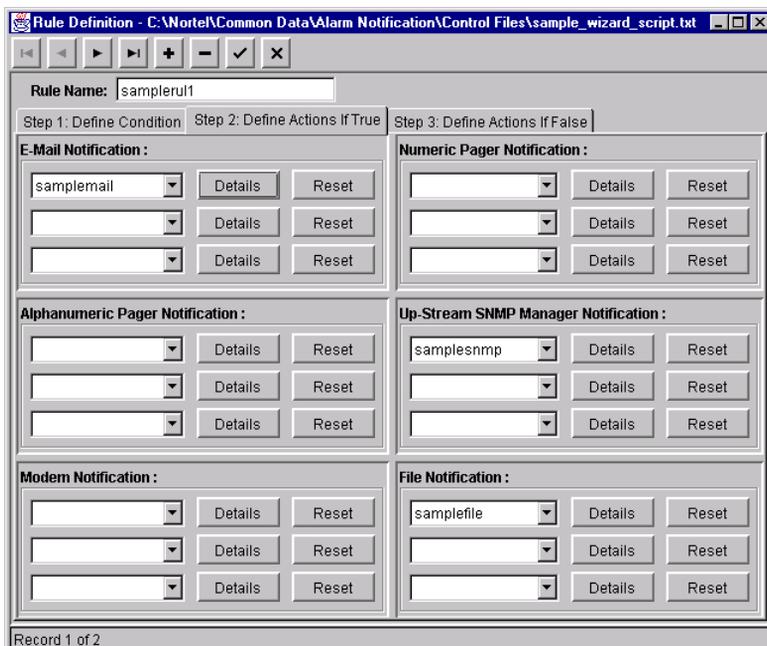


Click on the Details button to display the notification definition as shown in the example in Figure 289.

**Figure 289** E-mail notification details

The third section, Define Actions if False, describes the actions to be taken if the condition defined in the first section is false. This section is shown in Figure 290. You are not required to enter any information in this section, but you may enter up to three actions for each type of notification.

> → **Note:** To view information about the menus, toolbar, buttons, and other functions available in the Define Actions If False window, use online Help.

**Figure 290**   Define Actions If False window



### Generating the Script File

The final step in the Script Wizard is to generate the script file.

→ In the Main Script Wizard window(Figure 285), click Generate The Script File

A script file is generated using the conditions, actions and notifications that you entered.

# Sample Alarm Notification Scripts

This section shows portions of a sample script to illustrate scripting syntax that performs common alarm notification tasks.

## Log file

This script uses the file notification and saves all events to the filename "sample_log.txt" in the defined location.

> **Note:** Windows "long" file names are allowed in the scripts but are truncated when the system saves the file. Keep your file names to the standard eight character length.

```
notification file sample_file {
   filename:="c:\sample_log.txt";
}
```

## Numeric pager

This script uses the npager notification. Customize this script by typing in your numeric pager number

```
notification npager sample_numeric_pager {
   phone:="9,555-1212";
}
```

## Alphanumeric pager

This script uses the apager notification. Customize this script by typing in your alphanumeric pager number and Personal Identification Number (PIN).

```
notification apager sample_alpha_pager {
   phone:="9,555-1212";
   pin:="101565";
}
```

### Severity code descriptions

This script examines error codes generated by the Meridian 1 system and assigns descriptive text to them. This portion of the script uses the counter data type and the send alarm notification to send alarm notifications to a file and a pager. Note the use of rule and send syntax. Note the $Current... references to configuration file entries. See "Example of configuration file entries for Meridian 1 systems:" on page 565.

```
/* Provide variables to map M1 severity values into words */
counter info:=0,minor:=1,major:=2,critical:=3,debug:=4;
script SampleScript {
   counter bug3456:=0;

   /* This rule looks for critical M1 events */
   rule check_critical {
      if ($CurrentTrapDevice="Meridian1" and $CurrentAlarmSeverity=critical)
```

> **Note:** The `if` statement ensures that only critical alarms from the Meridian 1 system are processed.

```
{
        /* print event to console */
         send(con,"M1 alarm: ",
       $CurrentTrapSource," - " ,          // Name of this M1
      $CurrentAlarmErrorCode," - " ,       // M1 error code (i.e., BUG1234)
      $CurrentAlarmTime," - " ,            // Timestamp from M1
      $CurrentAlarmDescriptiveText," - ",  // Text with error message
      $CurrentAlarmOperatorData);          // More text with error message
```

> **Note:** The script displays on the console pane information about the Meridian 1 system alarm in the console pane, including the system where the alarm originated, the error code of the alarm, the time of the alarm, any descriptive text associated with the alarm, and other text associated with the error alarm.

```
/* append event to log file */
        send(sample_file,"M1 alarm: ",
       $CurrentTrapSource," - " ,          // Name of this M1
      $CurrentAlarmErrorCode," - " ,       // M1 error code (i.e., BUG1234)
      $CurrentAlarmTime," - " ,            // Timestamp from M1
      $CurrentAlarmDescriptiveText," - ",  // Text with error message
```

```
        $CurrentAlarmOperatorData);          // More text with error message
```

> **Note:** The script saves to a named file on disk the same information about the Meridian 1 system alarm that was displayed on the console.

```
/* optionally send message to alpha pager */
send(sample_alpha_pager,$CurrentTrapSource,":",$CurrentAlarmCode,"!");
*/
        }
    }
```

> **Note:** The send command contacts the pager named as sample_alpha_pager with the error information "M1 : BUG1234" where M1 is the name of the Meridian 1 system that has the error and BUG1234 is the error type.

### Specific system events

This script examines error codes generated by a Meridian 1 system for a specific event code and counts the number of occurrences for this event. For this example, BUG3456 is the specific event code. This portion of the script displays to the console the time when the error occurred. Customize this script by typing in your error code. This script may be of use if you are trying to troubleshoot the system for a specific problem.

This rule is named check_specific_event and examines events from the device named Meridian 1 for error code BUG3456. If this event is detected, the console displays "Found BUG3456 at <alarm time>" where <alarm time> is the timestamp provided by the system.

This script uses the `rule` syntax.

```
rule check_specific_event {
      if ($CurrentTrapDevice="Meridian1" and
$CurrentAlarmErrorCode="BUG3456")
          {
          send(con,bug3456,")
Found ",$CurrentAlarmErrorCode," at ",$CurrentAlarmTime);
          bug3456:=bug3456+1;
          }
      }
```

### Combining scripts

Several scripts are often found in a single script file. The sample scripts in this section are combined into a single text file named *Script.txt* included with the application. See "Script files" on page 7. Note the use of comments to document the various portions of the script.

### Scripting notes

The scripting language available with Alarm Notification allows tremendous flexibility and functionality in defining how the application processes events from connected systems. You can use any text editor such as Notepad to write your script. Use the Control Files tab in Alarm Notification Run Options dialog box to specify the script and other control files you will use.

Customized scripts are interpreted by the Alarm Notification application. Errors in the script are noted and related error messages are displayed in the console pane in the Alarm Notification window. Scripting error messages include the line number where the error occurred, as counted from the top of the text file, as well as a short error description.

# Chapter 6
# Maintenance Applications

## Overview

Meridian 1 and Succession CSE 1000 systems have over 600 overlay-based maintenance commands that support their powerful capabilities. To maintain a Meridian 1 or Succession CSE 1000 system, you must remember (or look up) which overlay has the appropriate commands and the syntax of each command—an enormous task!

Welcome to OTM Maintenance Windows. The 37 Maintenance Overlays are grouped into eight hardware-related windows to allow you to perform all maintenance tasks without having to remember or look up any overlay-based commands. The new interface provides a comprehensive view of Meridian 1 and Succession CSE 1000 system hardware configuration with the following benefits:

- see quickly the equipped hardware
  The hardware list works like a spread sheet data view—you can scroll through the list, sort the list, and select items for changing.
- select an item from the list and apply a Maintenance command from the right-mouse button popup menu
- print the list or copy it to a spreadsheet
- select a TN or DN and print the TN/DN block
- see Enabled/Disabled status in real time

For example, to disable a network loop on a Meridian 1 system, you click on the loop number and choose the Disable command from the menu. Maintenance Windows loads the appropriate overlay, executes the command, and displays the result of the action in a window that you can scroll and save.

## About this chapter

This chapter provides you with an introduction to the OTM Maintenance Windows application as well as an overview of its major functions.

This section describes functions that are common to all of the Maintenance window applications. Be sure to read this section thoroughly to help you use these applications efficiently.

Subsequent sections focus on the eight hardware related windows. A section is included on the Inventory Reporting application which is based on Overlay 117. For information on the web interface to maintenance applications, see "Web-based maintenance" on page 603.

## Help

This chapter does not discuss each Maintenance Windows function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Maintenance Windows function, use the on-line Help function. You can use the Help function to obtain help for topics either directly or through its index and word-search functions. While running Maintenance Windows, you can obtain context-sensitive help on any topic you require by simply clicking Help from a specific dialog box or window.

To obtain help for a topic, click Help from the currently selected dialog box or window. This will access the Windows Help function and display context sensitive help information on the current topic.

Once you access Help, scroll through the other Maintenance Windows help topics to search for a specific topic or print the help information.

To view a list of Help topics for Maintenance Windows, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

## Launching a Maintenance Windows application

You launch Maintenance Windows applications from the OTM System window. Figure 291 shows the OTM System window.

**Figure 291**   OTM System window
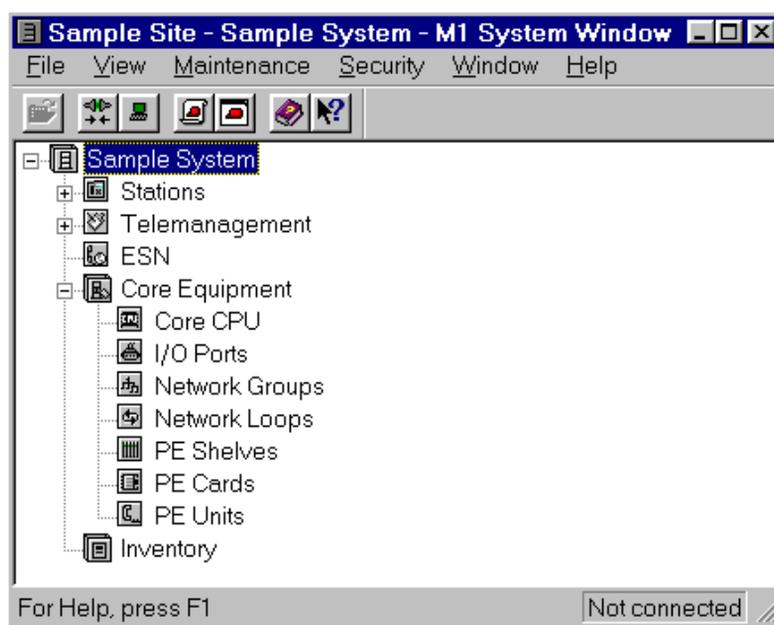


Under Core Equipment, double-click the icon for the desired Maintenance Windows application to launch that application. The appropriate window appears.

> **Note:** Each application is described in detail in a separate chapter in this document.

For example, double-click on the Network Loops icon to open the Network Loops window (see Figure 292). Each loop is listed, along with descriptive information. From this window, you can sort this information, select a loop and run maintenance commands, and get help on the selected loop.

**Figure 292**    Network Loops window
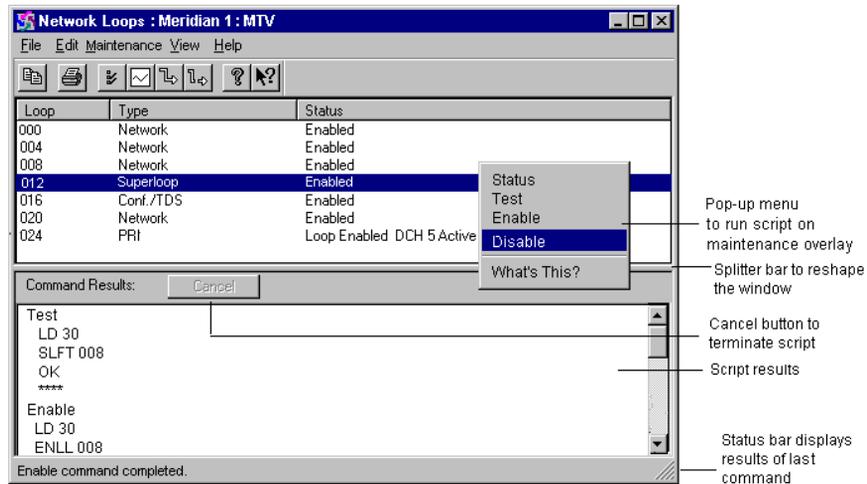


## Maintenance Windows applications

OTM Maintenance Windows includes the following applications:

### Core CPU

The CPU window displays the status of cards in both CPU shelves on the selected Meridian 1 system, or the Call Server on the selected Succession CSE 1000 system. You can perform actions and tasks on cards in the Meridian 1 system's CPU shelf or the Succession CSE 1000 system's Call Server from the CPU window.

### I/O Ports

The I/O (Input/Output) Ports window displays the status of all I/O ports on the Meridian 1 or Succession CSE 1000 system, and allows you to execute actions and tasks on a selected port.

### Network Groups

The Network Groups window displays the status of all Network Group Cards on the Meridian 1 system, and allows you to execute actions and tasks on a selected card.

### Network Loops

The Network Loops window lists all the network loops on the Meridian 1 system. It allows you to execute actions and tasks on a selected loop by choosing commands from the Maintenance menu.

### PE Shelves

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on a Meridian 1 system, and allows you to execute actions and tasks on a selected card.

### PE Cards

The PE Cards window displays the status of all EPE and IPE Peripheral Equipment cards for each PE Shelf on a Meridian 1, and allows you to execute actions and tasks on a selected card. The PE Cards window is also used to display the status of the circuit cards associated with each of the Media Gateways on a Succession CSE 1000 system.

### PE Units

The PE Units window displays information for all PE units and Directory Numbers on the Meridian 1 or Succession CSE 1000 system, and allows you to execute actions and tasks on a selected unit.

### B- and D-channels

The PRI/PRI2 B and D-channels window displays the B and D-channels on the selected digital trunk (for example, PRI loop), and allows you to execute actions and tasks on a selected channel.

### Option 11C Line Size Expansion

The Option 11C Line Size Expansion increases the Option 11C line capacity from the current three expansion cabinet configuration to a maximum of five expansion cabinets. Along with this expansion, the Option 11C supports an additional 20 IPE cards.

### Option 11C Mini

The Option 11C Mini affords full Meridian 1 feature functionality to the 20 to 80 line PBX customer. The three mounting options, wall, rack, and table top, are fully OTM and X11 system software compatible. There is an option for an expansion cabinet that supports an additional four peripheral slots. OTM recognizes this system type as an Option 11C in the Navigator and System Properties windows.

### Inventory Reporting

The Inventory Reporting window allows you to generate and download inventory files listing cards and telephone sets installed on a Meridian 1 system.

## Full documentation in on-line help

Each Maintenance Windows application is fully documented in the on-line help. Each menu command, button, and field is documented. Please be sure to consult the on-line help if you wish to get more detail about any of these items.

For help on an object in a list, select the item and use the right mouse button to select What's This help. Descriptive information on the item appears. For example, ask for help on a TTY object and the window shown in Figure 293 appears.

**Figure 293**   "What's This" help on PTY
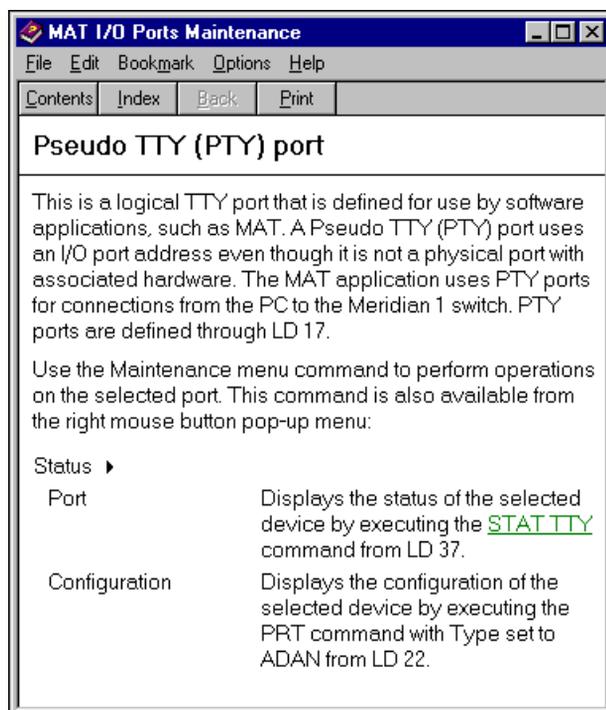


## Performing a maintenance task on an item

To perform a maintenance task on a card, loop, shelf, and so on, follow these steps:

**1**   Open the appropriate Maintenance Windows application.

**2**   Select the item from the list.

**3**   Choose a command from the Maintenance menu, the toolbar, or by using the right mouse button popup menu. A confirmation dialog box appears for potentially destructive commands.

**4**   The script appears in the command result section of the window, followed by the overlay output.

### Meridian 1 or Succession CSE 1000 system connection

Maintenance window applications connect to the Meridian 1 or Succession CSE 1000 system by a Pseudo TTY (PTY). A PTY is a "software only" TTY that uses an I/O port address. PTYs appear in the I/O Ports window. One PTY is used for all Maintenance Windows users connected to the system (even from multiple PCs). One PTY is used for each System Terminal connection even if it is not logged into the overlays.

### Queueing scripts

If the Meridian 1 or Succession CSE 1000 system is currently processing another user's script, your command is placed in a queue. You must wait until your script is finished processing before you can choose another Maintenance menu command. However, while you are waiting, you can perform maintenance tasks on another type of system component using a different Maintenance Windows application.

### Cancelling scripts

To remove a command from the queue or to cancel a command in progress, click Cancel. Pressing the <Esc> key also removes or cancels a command. If a command is in progress, Cancel aborts the current command and overlay by sending four stars (****).

### Refreshing the hardware status in the list

The hardware status in the list is updated as follows:

- the list is updated every few seconds even if there is no activity on the OTM PC

> **Note:** You specify the interval on a per-window basis. See the About Maintenance Windows item in the Help menu.

- the selected object status updates at every OTM PC after every script (therefore if you disable a port from one PC, the status updates on all other PCs)

- the entire list updates after some scripts because multiple objects are affected (examples: Split CPU, Disable MSDL)

- you can manually refresh the hardware status display by pressing <F5>

## Menu commands

Each menu command is fully documented in on-line help. The Status Bar provides useful information on the script to run (see "Using the Status Bar" on page 601).

You can also read What's This help on any menu command. Press <Shift><F1> (or select What's This from the Help menu) and select the command for full on-line documentation.

The Maintenance menu is unique for each hardware application, and is also fully documented in on-line help. In addition to the information provided in the Status Bar, you can read What's This help on any menu command as described above.

## Getting help on an error message

Sometimes, a maintenance command results in a Meridian 1 or Succession CSE 1000 system error message, such as NWS010.

To get help on the last error message (even if it has scrolled out of view):

→ Choose Error Message from the Help menu.

To get help on a previously-displayed error message:

- Use the scroll bar to move to the error message. Double-click the error message.

    or

- Select the error and choose Error Message from the Help menu.

    or

- Press <Ctrl>E for information on the last error message.

# Getting around in the maintenance window

You can use the maintenance window in the following ways:

## Customizing the window and columns

- resize the window and columns using standard Windows 95 controls
- use the horizontal or vertical scroll bars to move around in the alarm display
- you can resize the column by dragging the column divider to make more room for text

> **Note:** An ellipsis (...) after column text indicates there is more information than will fit in the column.

- drag the splitter bar (that divides the window into two display areas) to change the sizes of the card list and command results display areas.

## Sorting the list

By default, items are listed in an order optimized for that application. You can sort the list according to another column by clicking in that column heading. Click to sort in ascending order (an "up" arrow appears in the heading); click again for descending order ("down" arrow).

> **Note:** For help on the definition of any column in the list, click What's This in the Help menu, and then click the column title.

## Using shortcuts

The application provides convenient keyboard equivalents for many menu selections. You can perform the following common tasks by typing the accelerator keys:

- <Ctrl>R (Status)—displays detailed status information for the selected hardware device
- <Ctrl>T (Test)—performs predefined tests on the selected hardware device
- <Ctrl>W (Enable)—restores the selected hardware device to service

• <Ctrl>D (Disable)—removes the selected hardware device from service

### Using the Toolbar

The Toolbar gives you quick access to selected commands. Each button is documented in the on-line help (see Figure 294).

**Figure 294**   CPU toolbar



### Using the Status Bar

To display or hide the Status Bar located at the bottom of the window, use the Status Bar command in the View menu.

The Status Bar describes actions of the menu commands as you use the mouse to navigate through menus. When you select a Maintenance menu item, the status bar displays the following:

• the type of object selected
• the first overlay command in the script

When you run a Maintenance menu command, the Status Bar describes the progress of the command while it executes. For example, the Status Bar shows "Enable command in progress" when you choose an Enable command.

The Status Bar also displays the actions of the Toolbar buttons as you move the pointer over them.

## Printing

You can print Maintenance Windows information by selecting the lines to print in the list or the command results area (or the entire section), and selecting Print from the File menu. Select Print to File in the Print dialog to export the data for use in a spreadsheet or other application.

## Supported systems

Maintenance Windows is supported on Succession CSE 1000 systems, and on Meridian 1 systems with X11 Release 22 or later and the OTM Management Interface package (296).

The following Meridian 1 systems are supported:

- Option 11C
- Option 51C
- Option 61C
- Option 81
- Option 81C

It also supports the Option 11C Compact beginning with X27 Release 1.

## Feature limitations

- Not all hardware maintenance commands are supported. See the tables in each Maintenance Window application chapter for the list of supported hardware and commands.
- Only one user can access a maintenance overlay at a time (this is an existing limitation of the overlays). Commands issued from a Maintenance window will be queued if:
  — a TTY user has loaded a maintenance overlay
  — another Maintenance window (same or different user) is running a script that uses the same maintenance overlay
  — a previous command was issued from a Maintenance window (that is, you must wait until the first command is completed before issuing another)

One Pseudo TTY port is required for Maintenance Windows (regardless of the number of windows and logged-in users). Each instance of the System Terminal window (active or inactive) requires an additional Pseudo TTY port. This is in addition to the PPP/ethernet ports required for the basic OTM PC connection.

Maintenance window menus are not context sensitive to the maintenance state of the selected Meridian 1 or Succession CSE 1000 object. For example, the enable command will not be grayed out if the object is already enabled. You will get the same response as entering the enable command in the overlay (usually an error message stating that the card is already enabled).

# Web-based maintenance

## Core CPU page

To open the Core CPU page:

**1** Click the Core CPU radio button.

**2** Click Go.

The Core CPU page opens as shown in Figure 295.

**Figure 295** Core CPU summary page



To perform maintenance operations on a CPU:

**1** Click the CPU number link that corresponds to the CPU on which you want to perform maintenance operations.

The Core CPU Maintenance Page for the selected CPU opens as shown in Figure 296.

**Figure 296**   Core CPU Maintenance page
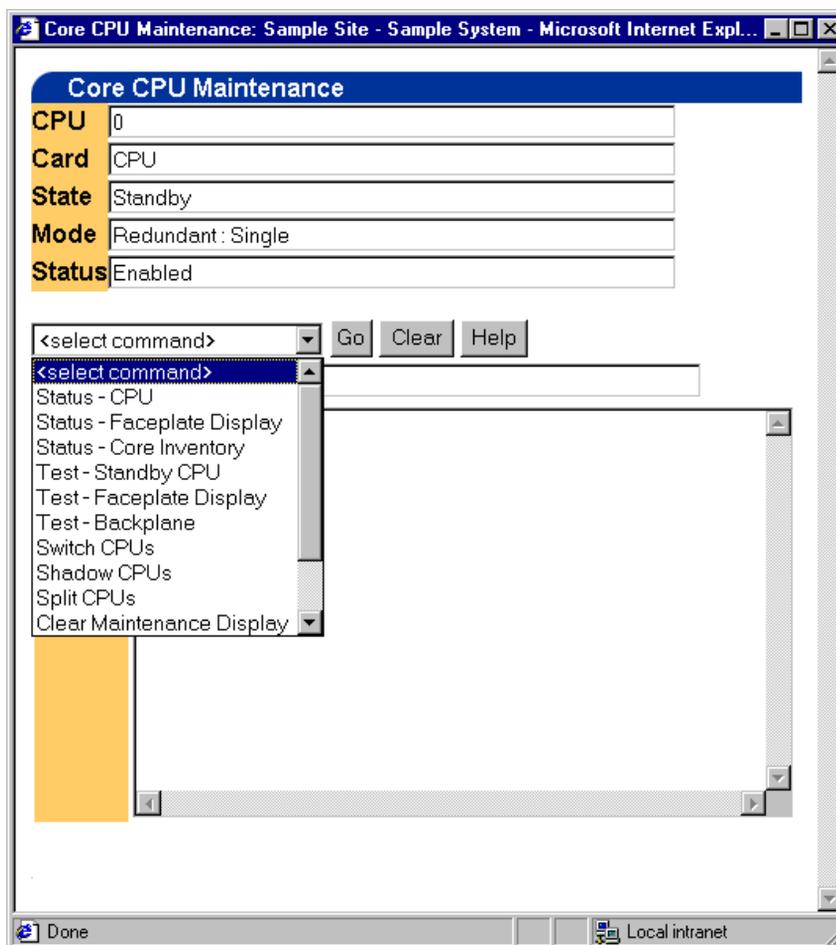


**2**   Select a command from the drop down list.

**3**   Click Go.

The results are displayed in the Results frame as shown in Figure 297.

**Figure 297** Core CPU Maintenance command results
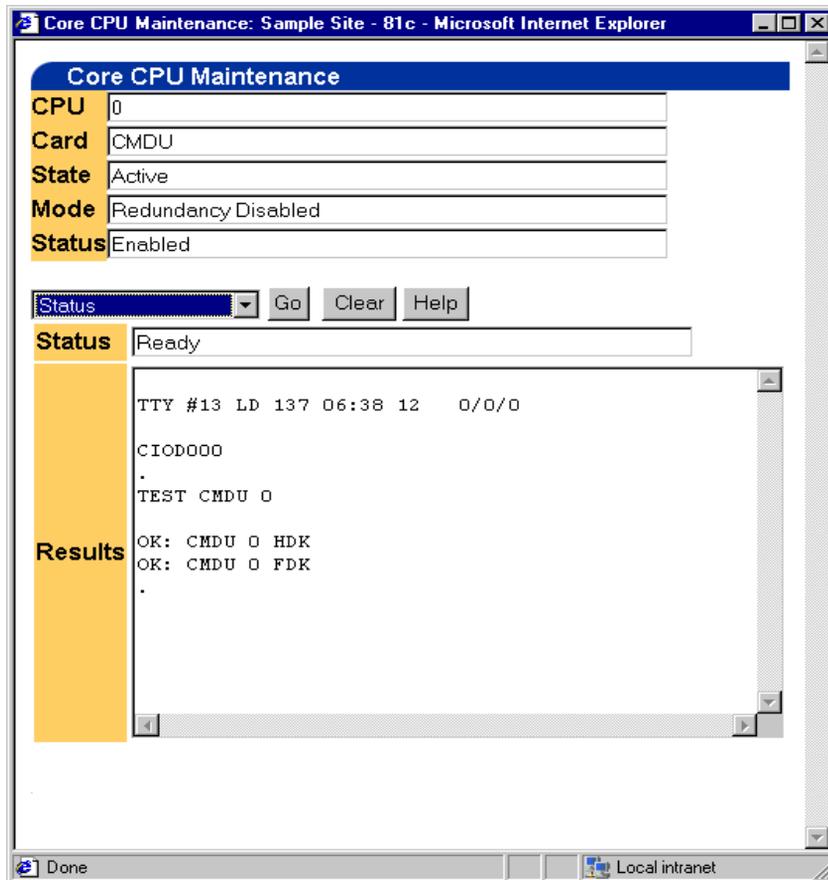


Some of the Core CPU cards require that you input additional information prior to the execution of the Go command. The following example outlines the procedure for sending maintenance commands to a CMDU.

To perform maintenance commands on a CMDU, first, select a CMDU:

→ Click the CPU number link that corresponds to the CMDU on which you want to perform maintenance commands.

The Core CPU Maintenance Page for the selected CMDU opens as shown in Figure 298.

**Figure 298**   Core CPU Maintenance page for a CMDU
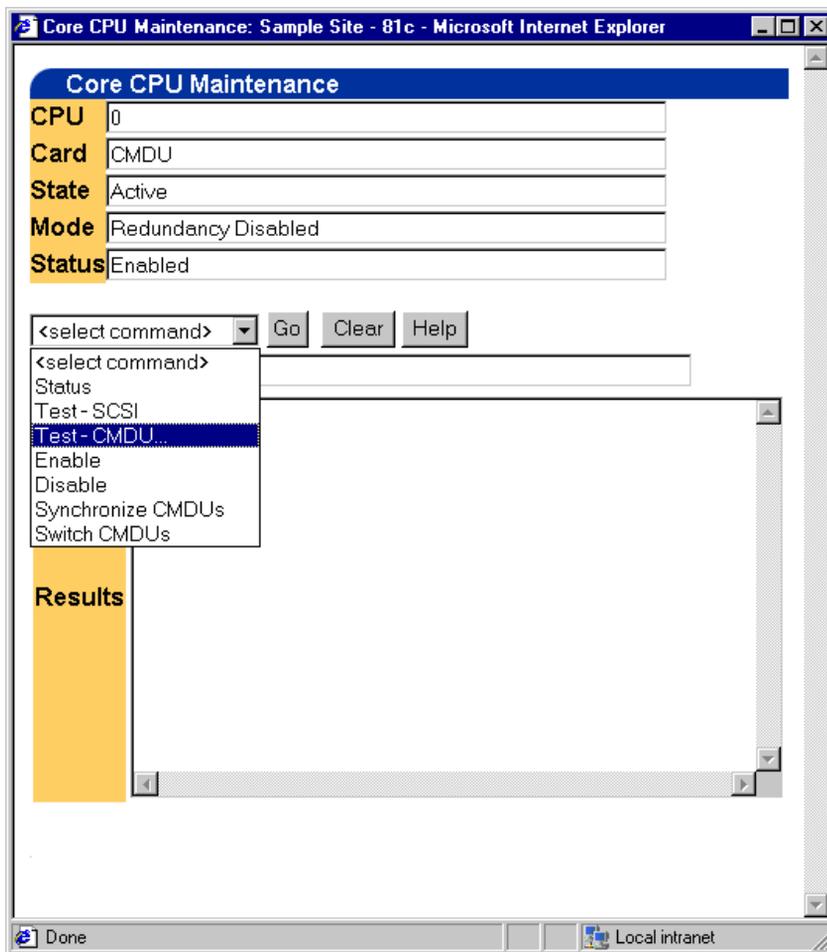


To Test the selected CMDU:

**1**   Select Test-CMDU from the drop down list.

**2**   Click the Go button.

The Go button is replaced by an Options button as shown in Figure 299.

**Figure 299** Core CPU Maintenance page with Test-CMDU command selected
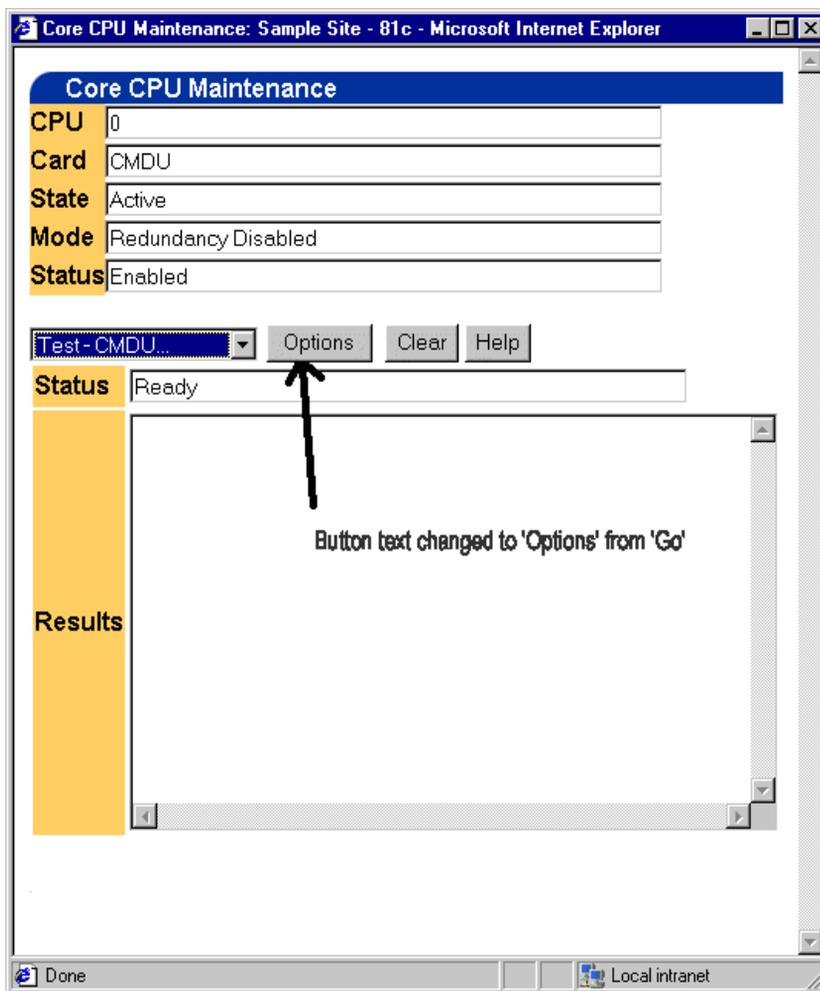


**3** Press the Options button.

The CMDU Test Options page opens as shown in Figure 300.

**Figure 300**   CMDU Test Options
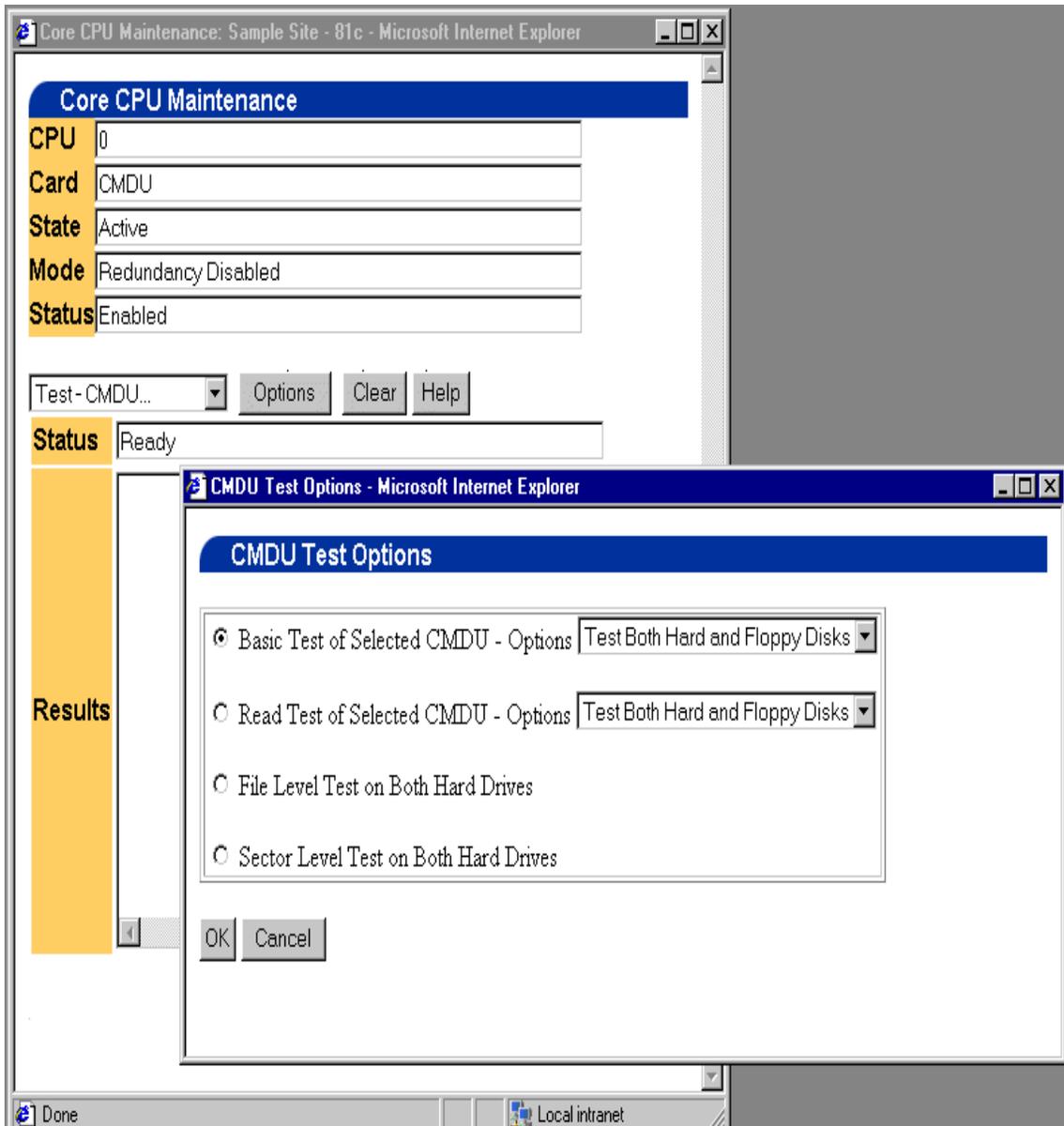


**4**   Click the radio button corresponding to the type of CMDU test you want to perform:

To perform a basic test of the selected CMDU:

**a** Click the radio button corresponding to Basic Test of Selected CMDU.

**b** Select an option from the drop down list as shown in Figure 301.

**Figure 301** Basic Test of Selected CMDU - Options
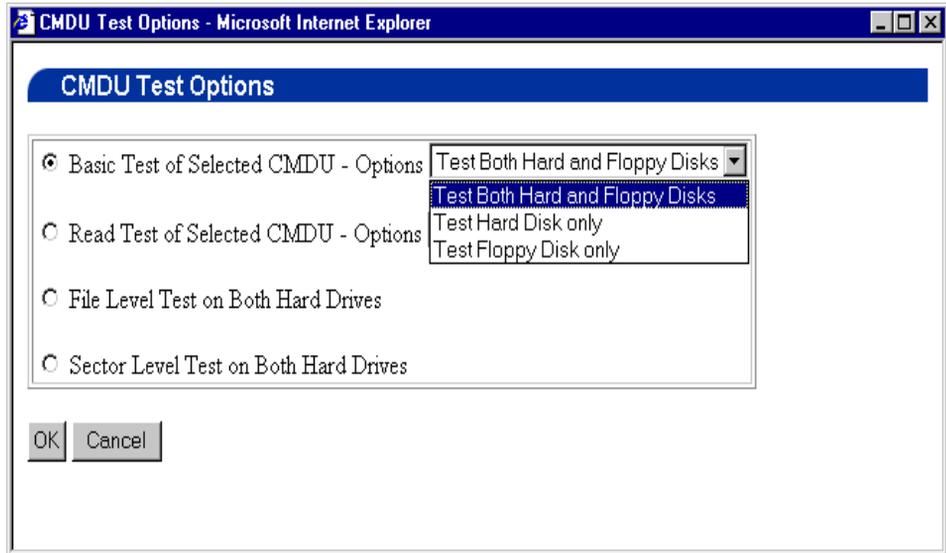


**c** Click OK.

The Options button is replaced with a Go button as shown in Figure 302.

**Figure 302**   Core CPU Maintenance page after options have been selected
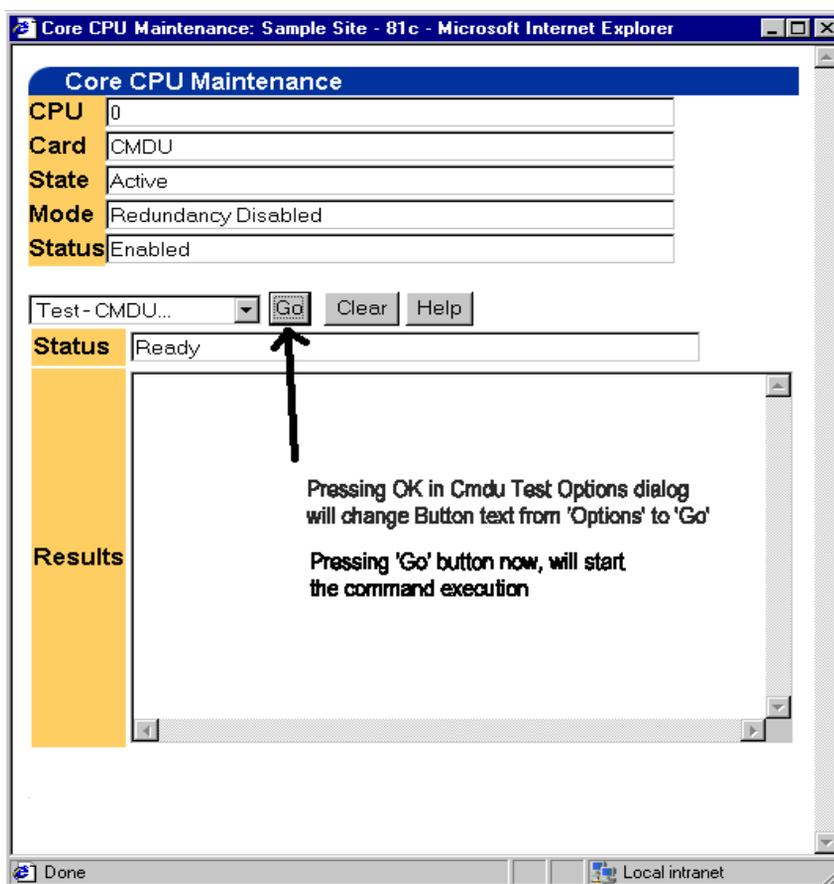


To perform a read test of the selected CMDU:

**a**   Click the radio button corresponding to Read Test of Selected CMDU.

**b**   Select an option from the drop down list as shown in Figure 303.

→ **Note:** The "Test CD-ROM Only" option will only appear when you are connected to a Meridian_1 system running X11 release 23 or later.

**Figure 303**   Read Test of Selected CMDU - Options
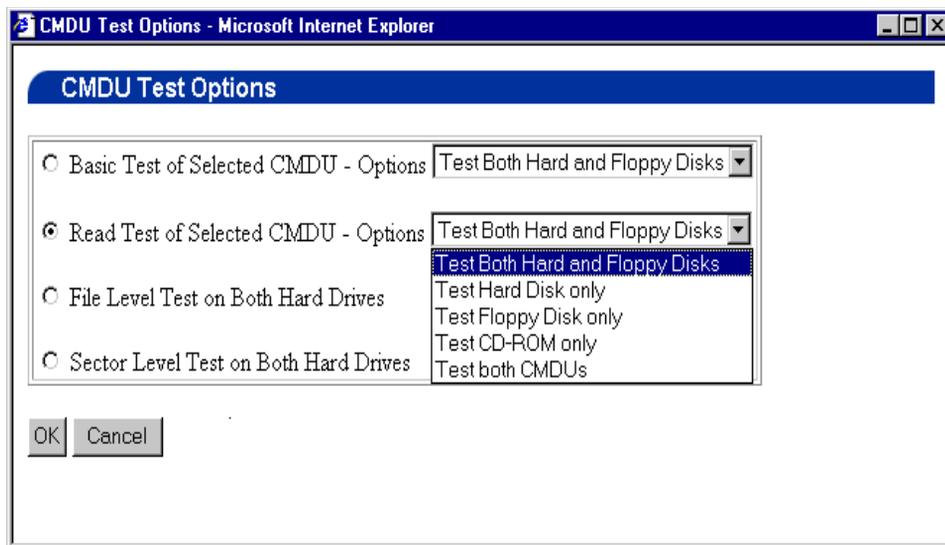


**c**   Click OK.

The Options button is replaced with a Go button as shown in Figure 302.

To perform a file level test on both hard drives:

**a**   Click the radio button corresponding to File Level Test on Both Hard Drives.

**b**   Click OK.

The Options button is replaced with a Go button as shown in Figure 302.

To perform a sector level test on both hard drives:

**a**   Click the radio button corresponding to Sector Level Test on Both Hard Drives.

**b**   Click OK.

The Options button is replaced with a Go button as shown in Figure 302.

**5**   Click Go.

The test results are presented in the Results frame as shown in Figure 304.

> **Note:** The Go button is replaced with an Options button since Test-CMDU is still selected in the drop down menu.

**Figure 304**   Core CPU Maintenance test results
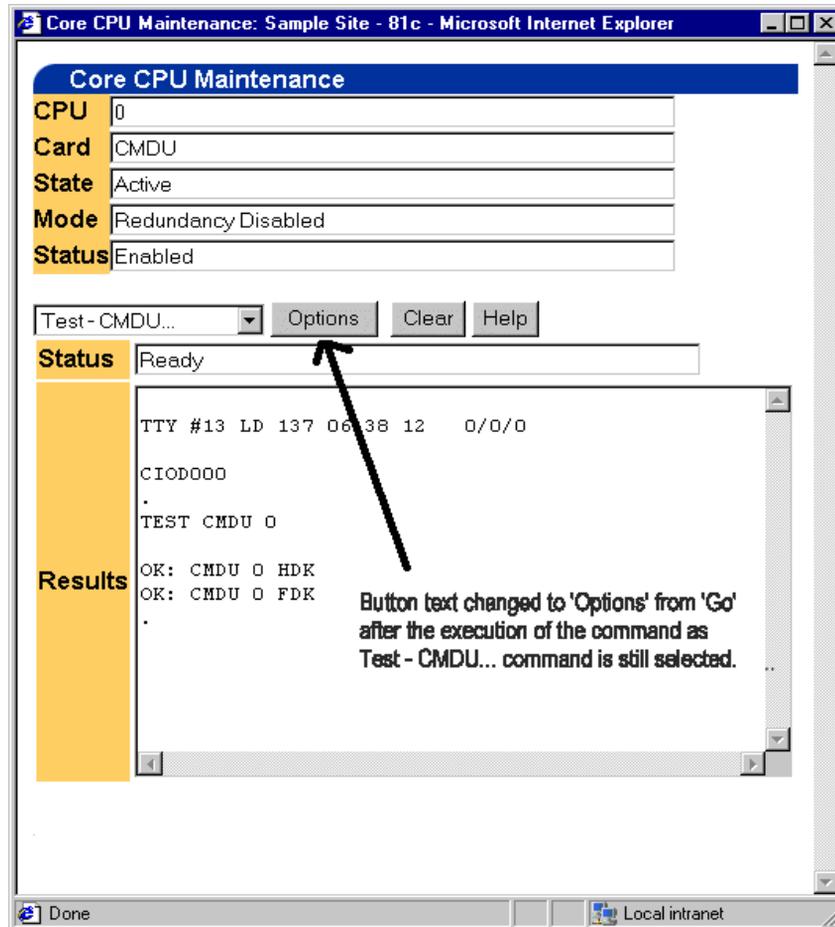


## I/O Ports page

To open the I/O Ports page:

**1**   Click the Core I/O Ports radio button.

**2** Click Go.

The I/O Ports summary page opens as shown in Figure 305.

**Figure 305** I/O Ports summary page



To perform maintenance operations on an I/O Port:

**1** Click the Type link that corresponds to the port on which you want to perform maintenance operations.

The I/O Port Maintenance page for the selected port opens as shown in Figure 306.

**Figure 306**   I/O Port Maintenance page



Some I/O Port Maintenance operations require that you select a group number prior to execution of the command. To select a group number:

**2**   Click Options.

**3**   Select the group number from the drop down list as shown in Figure 307.

**Figure 307** Group number option dialog box
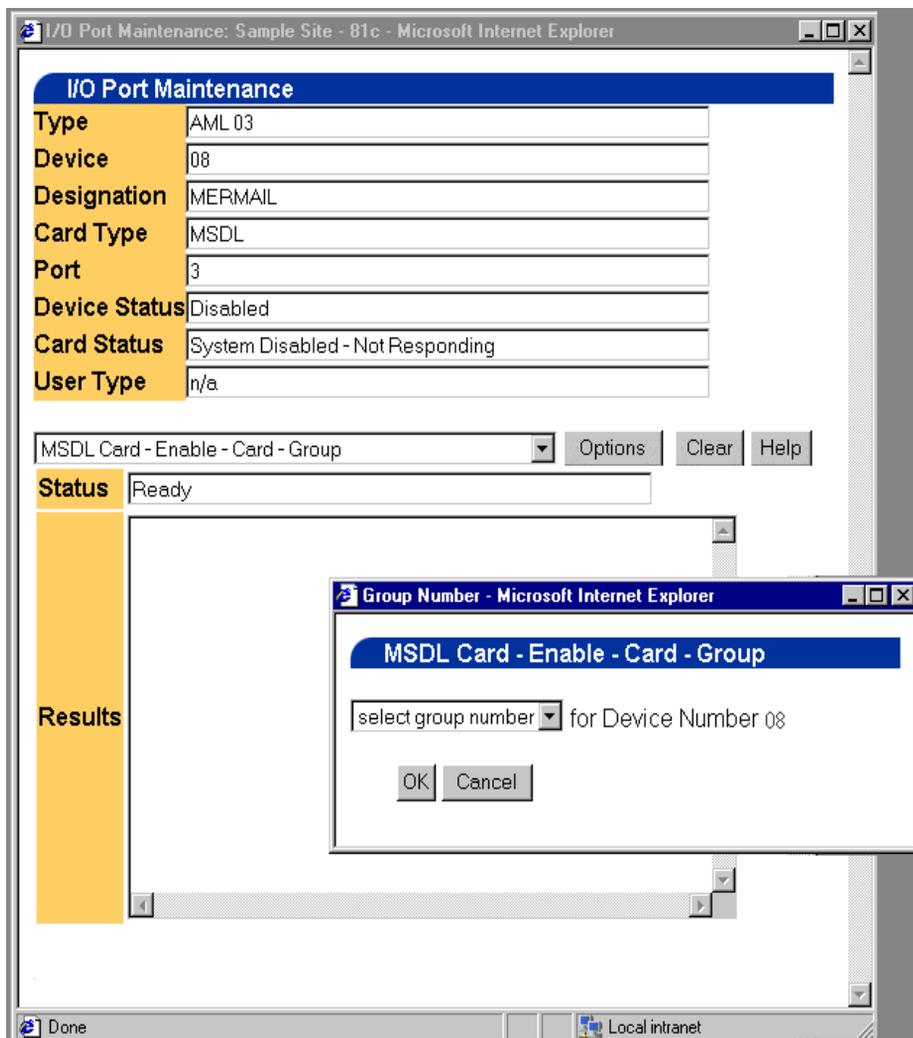


> **Note:** The command that you selected from the select command drop down list appears as the title in the select group number dialog box.

**4** Click OK.

**5** Click Go.

The Device Status field is updated to indicate that the card is enabled.

# Groups page

To open the Groups page:

**1** Click the Groups radio button.

**2** Click Go.

The Groups summary page opens as shown in Figure 308.

**Figure 308** Groups summary page

# Loops page

To open the Loops page:

**1** Click the Loops radio button.

**2** Click Go.

The Loops summary page opens as shown in Figure 309.

**Figure 309** Loops summary page



To perform maintenance operations on a Loop:

**1** Click the Loop link that corresponds to the loop on which you want to perform maintenance operations.

The Loop Maintenance page for the selected loop is displayed as shown in Figure 310.

**Figure 310**   Loop Maintenance page
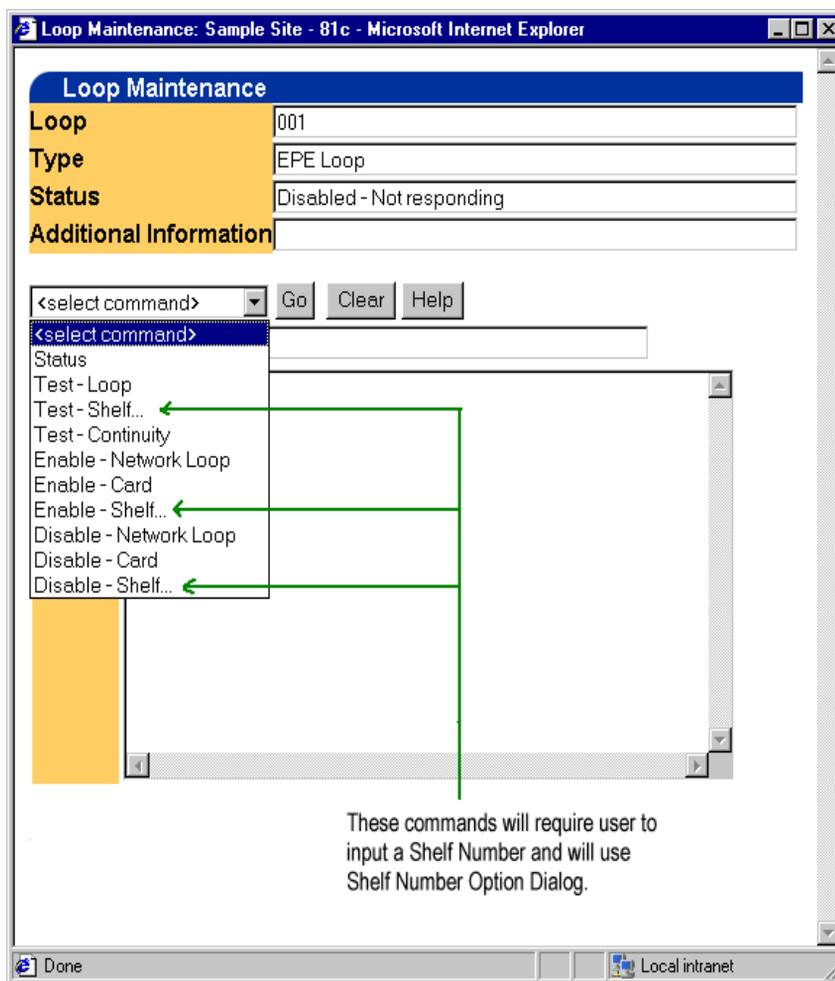


Some Loop Maintenance operations require that you select a shelf number prior to execution of the command. For these operations, the Go button becomes an Options button as shown in Figure 311. To select a shelf number:

**2**   Click Options.

**3**   Select the shelf number from the drop down list as shown in Figure 311.

**Figure 311** Loop Maintenance page with shelf number option dialog box
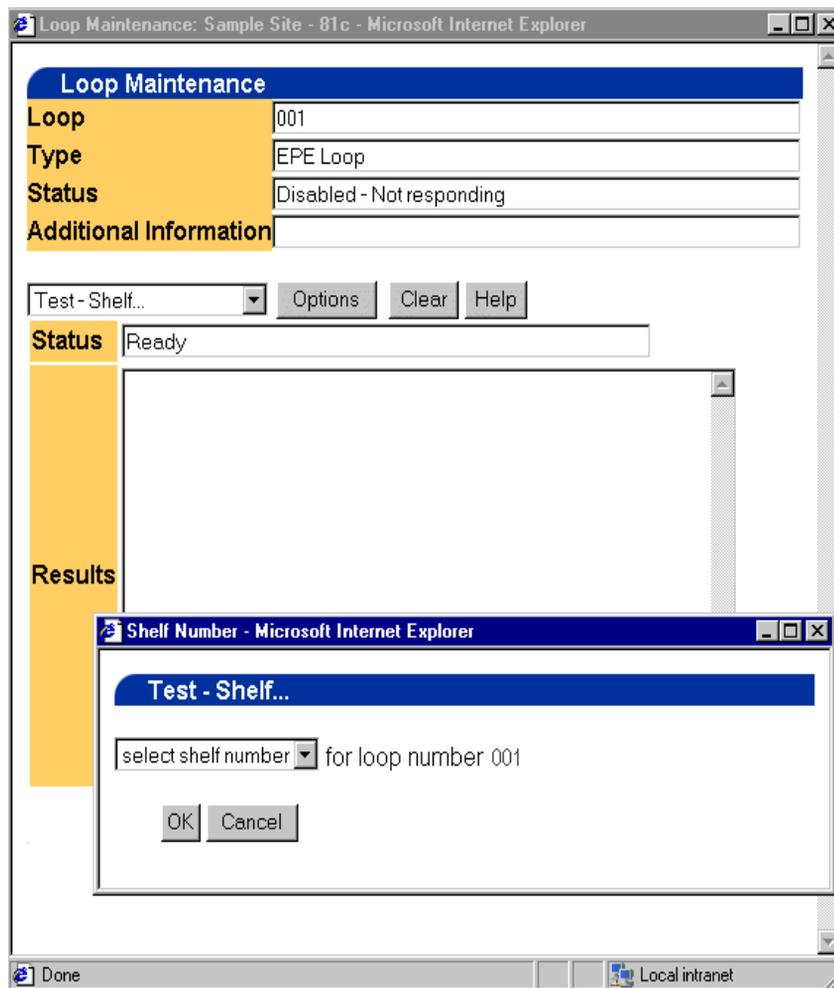


→ **Note:** The command that you selected from the select command drop down list appears as the title in the select shelf number dialog box.

**4** Click OK.

**5** Click Go.

The test results are returned in the Results frame.

# B-Channels Maintenance page

To perform maintenance operations on B-Channels:

**1**  From the Loops summary page (Figure 312), select the Loop link for the Superloop on which you want to perform maintenance.

**Figure 312**   Loops summary page with PRI and DTI2 loops



The B-Channels summary page for the selected loop opens as shown in Figure 313.

**Figure 313** B-Channels summary page



**2** Click the Channel link that corresponds to the channel on which you want to perform maintenance operations.

The B-Channel Maintenance page for the selected channel opens as shown in Figure 314.

→ **Note:** The available maintenance commands are dependent on the type of B-Channel selected.

**Figure 314** B-Channel Maintenance page
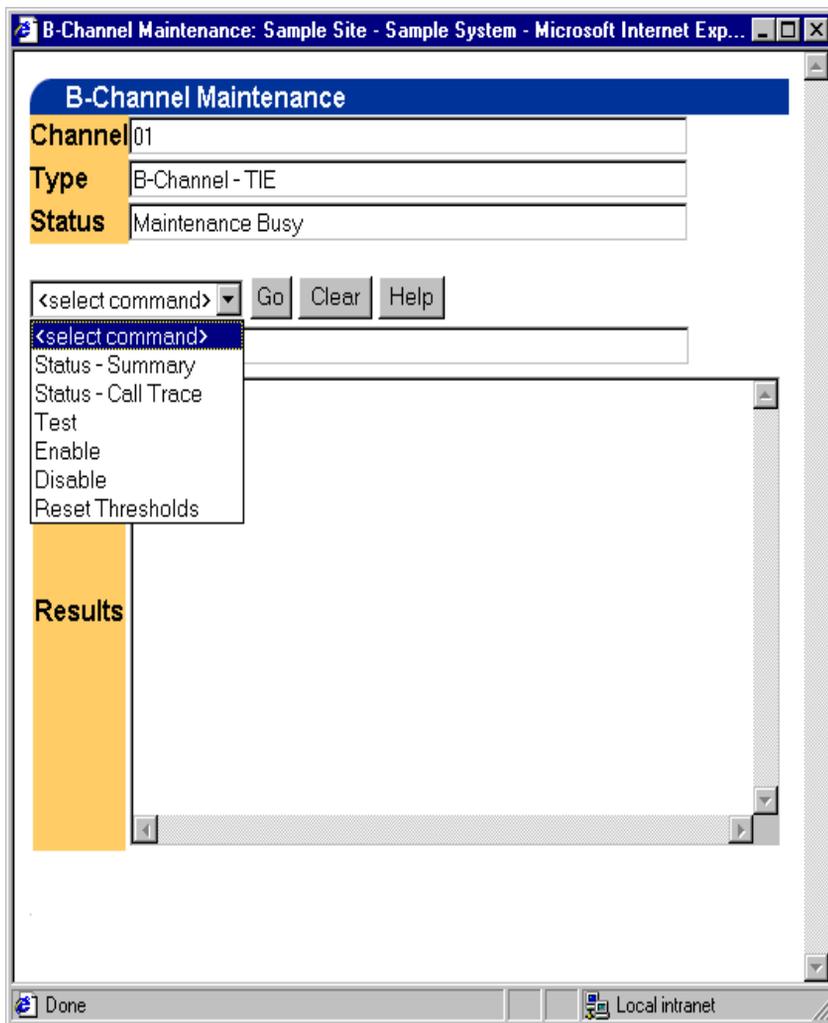


**3** Select a command from the drop down list.

**4** Click Go.

The results of the command appear in the Results frame as shown in Figure 315.

**Figure 315** B-Channel Maintenance test results
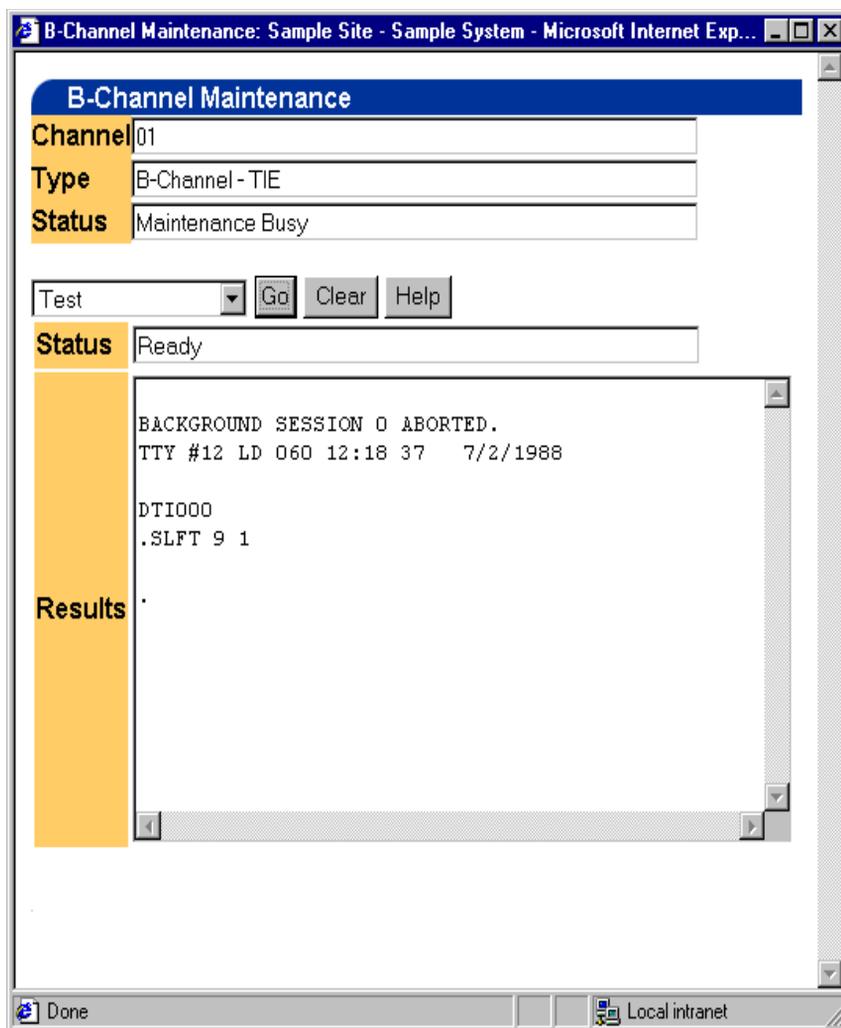


## PE Shelves page

To open the PE Shelves page:

**1** Click the Shelves radio button.

**2** Click Go.

The PE Shelves summary page appears as shown in Figure 316.

**Figure 316**   PE Shelves summary page



## PE Cards page

To open the PE Cards page:

**1**   Click the PE Cards radio button.

**2**   Click Go.

The PE Cards summary page appears as shown in Figure 317.

**Figure 317** PE Cards summary page



To perform maintenance commands on a PE card:

**1** Click the TN link that corresponds to the PE card on which you want to perform maintenance commands.

The maintenance page for the selected PE card is displayed as shown in Figure 296. This example shows the maintenance page for TN 001 0 01.

**Figure 318**  PE Card Maintenance page



**2**  Select a command from the drop down list.

**3**  Click Go.

The results of the command are placed in the Results box. Once the command has been executed, the component state is updated.

## Find Telephones and Find PE Units pages

Use the PE Units list to manage Directory Numbers (DNs), and Terminal Numbers (TNs). Before the list is displayed, a find option is provided since it is unlikely that you would want to view the entire list. The PE Units list can be retrieved from the Station database on the OTM server, using Find Telephones, as shown in Figure 319. The PE Units list can also be retrieved directly from the Succession CSE 1000 or Meridian 1 system as shown in Figure 320.

### Find Telephones (OTM)

To open the Find Telephones (OTM) page:

**1** Click the Find Telephones (OTM) radio button.

**2** Click Go.

The Find Telephones screen appears as shown in Figure 319.

**Figure 319** Maintenance Pages Find Telephones (OTM) screen
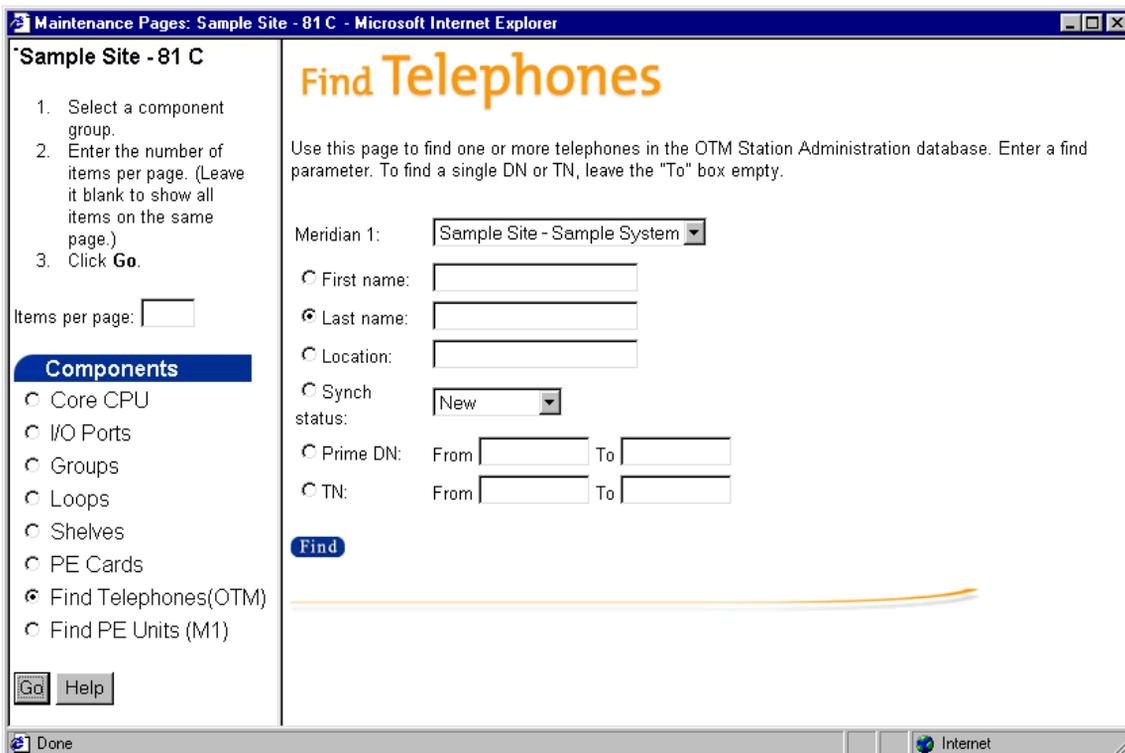


### PE Units

To open the Find PE Units (M1) page:

**1** Select the Find PE Units (M1) button.

**2** Click Go.

The Find PE Units (M1) screen appears as shown in Figure 320.

**Figure 320**   Maintenance Pages Find PE Units (M1) screen
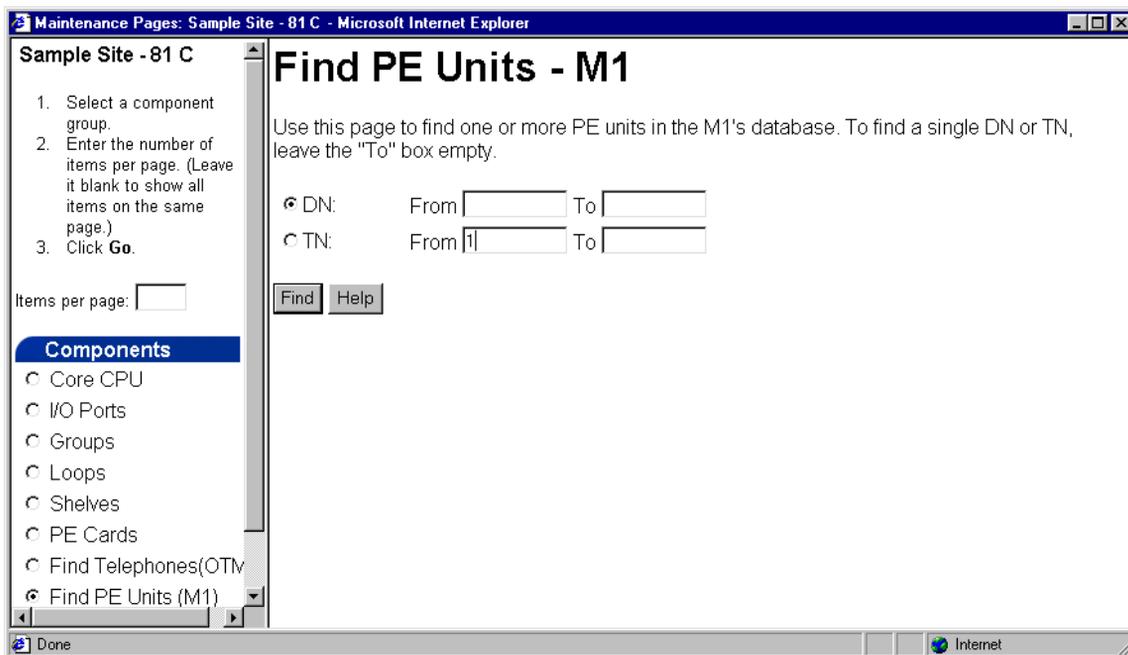


## Telephones/PE Units maintenance

In either the Find Telephones screen or the Find PE Units- M1 screen:

**1**   Enter a single DN or TN, or enter a range of DNs or TNs.

**2**   Click **Find**.

After you click the Find button the results are displayed as shown in Figure 321 if you entered DN(s), or as shown in Figure 322 if you entered TN(s).

**Figure 321** PE Units Find Results (by DN)

**Figure 322**   PE Units Find Results (by TN)



**3**   Click on a DN or a TN. A new browser window appears as shown in Figure 323. This example shows the maintenance page for TN 001 0 0 00.

**Figure 323**   Viewing PE Unit data



**4**   Select a command from the drop down list and click Go.

The command status goes through the following sequence:

- Ready
- Logging In ...
- Retrieving Results ...
- Updating Status ...
- Logging Out ...
- Ready

In this example, we have selected the Enable command. Figure 324 shows that the status of this unit has been updated from disabled in Figure 323 to idle in Figure 324.

**Figure 324**   PE unit data after applying enable command



**5**    Select another command, or close the browser window.

# Windows-based maintenance

## Core CPU window

The Core CPU window displays the status of cards in the CPU shelves on the selected Meridian 1 system or the status of the Call Server in a Succession CSE 1000 system.

### Launching Core CPU

From the System window, under Core Equipment, double-click Core CPU icon. The Core CPU window appears as shown in Figure 325.

**Figure 325** CPU window
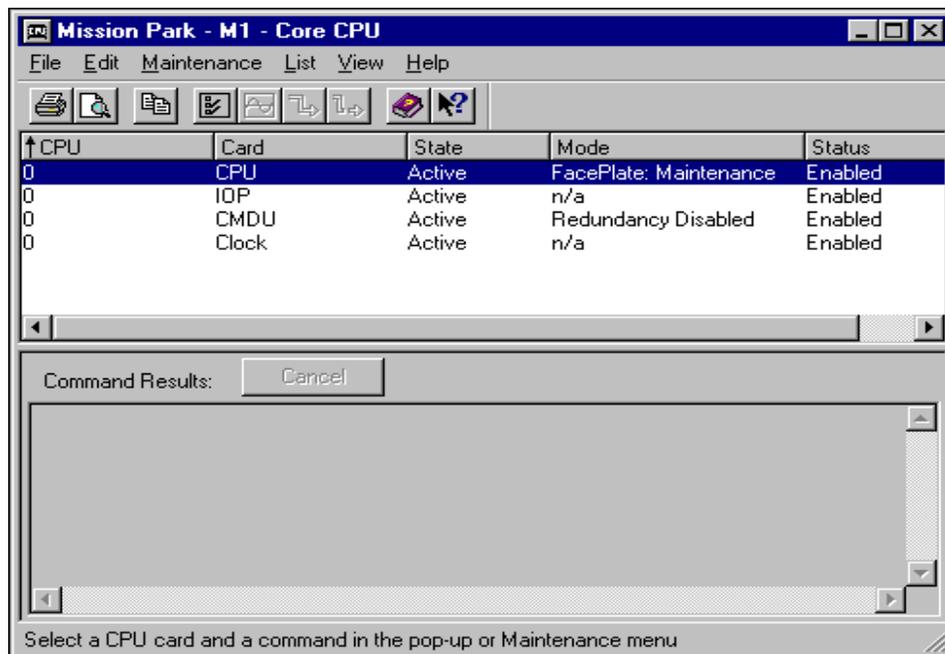


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## Core CPU column descriptions

The Core CPU window provides columns of information about each card installed in the shelf. The Core CPU list is initially sorted by CPU number (there may be one or two CPU shelves, depending on the hardware type). Table 24 describes each column.

**Table 24**   Core CPU window column descriptions

| Column | Description |
|--------|-------------|
| CPU | Shelf number associated with the card. |
| Card | CPU card type, the following types are listed:<br>• Core Processing Unit (CPU) cards<br>• Core Multi-Disk Unit (CMDU) cards<br>• Input/Output Processor (IOP) cards<br>• Clock Controller (Clock) cards<br>• Fiber cards (Option 11C only) |
| State | A card can be in an active or standby state. |
| Mode | Mode applies only to CPU and CMDU cards:<br>CPU cards may be in split or shadowed mode. The faceplate may be in Normal or Maintenance mode.<br>CMDU cards may be in Redundancy enabled or Redundancy disabled mode. |
| Status | Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu. |

## Supported Core CPU commands

Table 25 lists the hardware and Core CPU commands supported. Use System Terminal for hardware or commands not supported by the Core CPU window.

**Table 25**   Supported Core CPU Commands

| Hardware | Supported | Commands supported |
|----------|-----------|--------------------|
| CP cards | yes | all, except split and shadow CPU commands |
| I/O Processor (IOP) cards | yes | all, except disable IOP and Ethernet commands<br>**Note:** You will lose connection to M1. |

**Table 25** Supported Core CPU Commands

| Hardware | Supported | Commands supported |
|---|---|---|
| Core Multi-Disk Units (CMDU) | yes | all |
| Clock Controller | yes | all |
| Fiber Link (Option 11C) | yes | all, including cabinet enable/disable commands |
| Fiber Link | yes | all |
| System Utility (SUTL) | yes | all |

# I/O Ports window

The I/O (Input/Output) Ports window displays the status of all I/O ports on the Meridian 1 or Succession CSE 1000 system.

## Launching I/O Ports

From the System window, under Core Equipment, double-click the I/O Ports icon. The I/O Ports window appears as shown in

**Figure 326** I/O Ports window
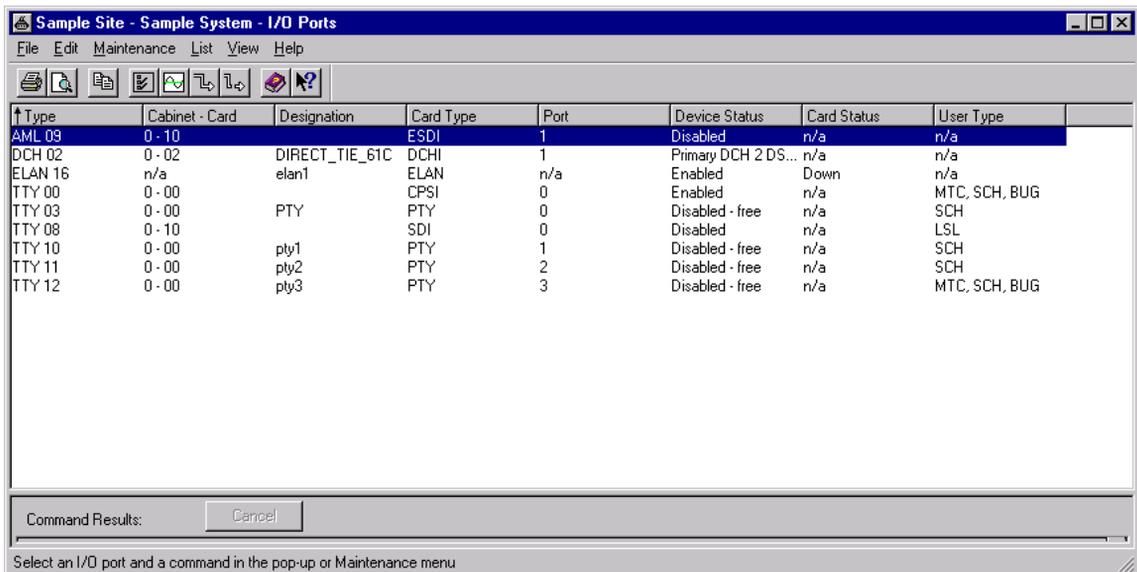
The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## I/O Ports column definitions

The I/O Ports window provides columns of information about each port in the system. The I/O Ports list is initially sorted by port type and number. Table 26 describes each column.

**Table 26**   Column descriptions   (Sheet 1 of 2)

| Column Name | Description |
| --- | --- |
| Type | Type and number of I/O port: <br> • Teletype (TTY) <br> • Printer (PRT) <br> • Application Module Link (AML) <br> • D-Channels <br> • Intercept Computer Update Link (ICP) <br> • Ethernet Local Area Network (ELAN) <br> • Single Terminal Access (STA) <br> • D-channel Digital Signaling Link (DDSL) <br> • Low Speed Signaling Link (LSSL) |
| Device | Physical address of the card or port. |
| Designation | Port name. |
| Card Type | Card containing the I/O port: <br> • Serial Data Interface Card (SDI) <br> • Enhanced Serial Data Interface Card (ESDI) <br> • D-channel Interface Card (DCHI) <br> • Multi-purpose Serial Data Link Card (MSDL) |
| Port | Port number on the card. |
| Device Status | Current maintenance status of the port. |

**Table 26** Column descriptions  (Sheet 2 of 2)

| Column Name | Description |
|---|---|
| Card Status | Current maintenance status of the card. Applies only to MSDL Cards. |
| User Type | Indicates current port usage.<br>• ACD: Automatic Call Distribution printer<br>• APL: Auxiliary Processor Link<br>• ICP: Intercept Computer Update Link<br>• LSL: Low-speed AUX link<br>• HSL: High-speed AUX link<br>• XSM: System monitor<br>• BGD: Background terminal<br>• CTY: Call Detail Recording (CDR) TTY for CDR records<br>• PMS: Property Management System Interface (PMS)<br>• BUG: BUG messages included on port<br>• CSC: Automatic Set Relocation and Attendant Administration messages (CSC) included on port<br>• FIL: Output filtered messages included on port<br>• MCT: Malicious Call Trace messages included on port<br>• MTC: AUD, BUG, and ERR messages included on port<br>• NOO: No overlay allowed on port<br>• SCH: Service Change or any database change included on port<br>• TRF: Traffic reports included on port |

## Supported I/O Ports commands

Table 27 lists the supported I/O Ports hardware and commands. Use System Terminal for hardware or commands not supported by the I/O Ports window.

**Table 27** Supported I/O Ports commands  (Sheet 1 of 2)

| Hardware | Supported | Commands supported |
|---|---|---|
| TTY port on SDI/MSDL card | yes | all except test command |
| XSM (System Monitor) on SDI/MSDL card | yes | all |
| PRT - Printer port on SDI/MSDL card | yes | all except test command |
| PTY - Pseudo TTY port | yes | all |

**Table 27**   Supported I/O Ports commands  (Sheet 2 of 2)

| Hardware | Supported | Commands supported |
|---|---|---|
| AML - (Application Module Link) on an ESDI/MSDL card | yes | all except message monitor commands |
| ACD High Speed Port on SDI/MSDL card | yes | all except message monitor commands |
| ACD Low Speed Port on SDI card | yes | all except message monitor commands |
| Auxiliary Processor Links on any SDI/ MSDL card | yes | all except message monitor commands |
| Intercept Computer Update ports (ICP) on any SDI/MSDL card | yes | all except ICP application commands |
| D-channel on an MSDL/DCHI card | yes | all except message monitor commands |
| Single Terminal Access port | yes | all |
| MSDL card | yes | all except download version x of software |
| ACD Low Speed Link for Option 11C | yes | all |
| ICCM ELAN for ICCM | yes | all |
| DPNSS DDSL (D-channel) | yes | all |
| APNSS LSSL (D-channel) | yes | all |

# Network Groups window

The Network Groups window displays the status of all Network Group cards on the Meridian 1 system.

## Launching Network Groups

From the System window, under Core Equipment, double-click the Network Groups icon. The Network Groups window appears as shown in Figure 327.

**Figure 327**   Network Groups window
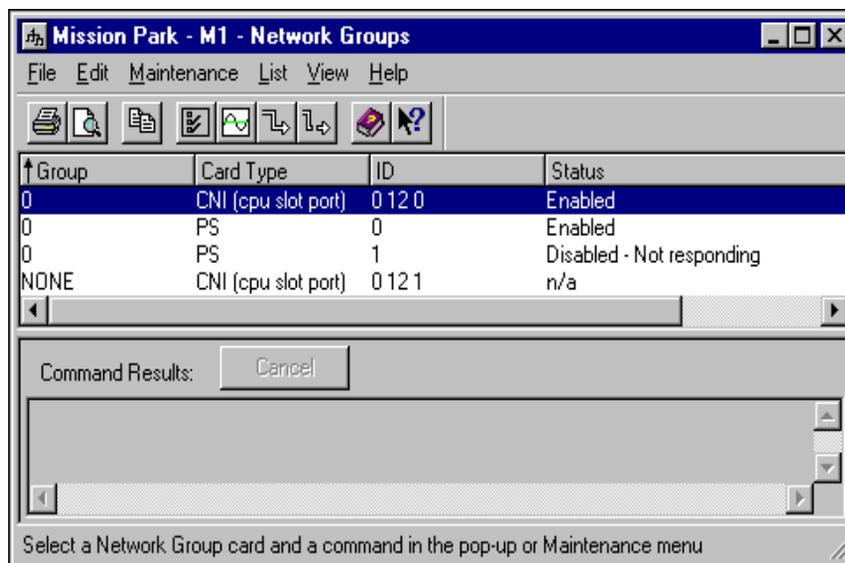


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## Network Groups column definitions

The Network Groups window provides columns of information about each port in the system. The Network Groups list is initially sorted by Group number. Table 28 describes each column.

**Table 28**   Column descriptions

| Column Name | Description |
|---|---|
| Group | Network group identification number. |
| Card Type | Each network group can include the following cards:<br>• Core to Network Interface cards (2 cards)<br>• Peripheral Signaling cards (2 cards)<br>• InterGroup Switch cards (4 cards) |
| ID | Card identification number. ID for CNI cards include the CPU number, slot number, and the port number. |
| Status | Current status of the card. For a more detailed status report, use the Status command on the Maintenance menu. |

### Supported Network Groups commands

Table 29 lists the supported hardware and Network Groups commands. Use System Terminal for hardware or commands not supported by the Network Groups application.

**Table 29**   Supported Network Groups commands

| Hardware | Supported | Commands supported |
|----------|-----------|--------------------|
| Core to Network Interface (CNI) card | yes | all |
| Peripheral Signalling card | yes | all |
| InterGroup Switch card | yes | all |
| Fiber Junctor Interface (FIJI) card | yes | all |

## Network Loops window

The Network Loops window lists all the network loops on the Meridian 1 system.

### Launching Network Loops

From the System window, under Core Equipment, double-click the Network Loops icon. The Network Loops window appears as shown in Figure 327.

**Figure 328**   Network Loops window
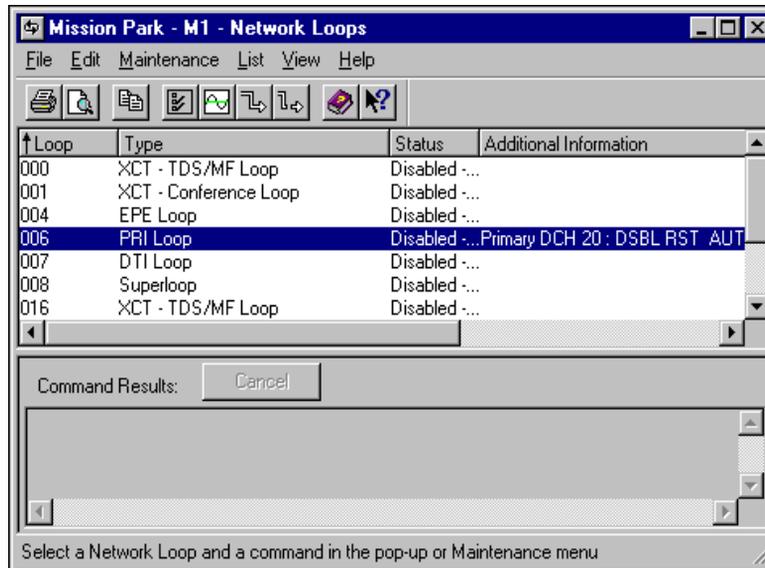


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## Network Loops column descriptions

The Network Loops window provides columns of information about each loop in the system. The Network Loops list is initially sorted by Loop number. Figure 30 describes each column.

**Table 30**   Network Loops window column descriptions

| Column | Description |
|--------|-------------|
| Loop | Loop number.[1] |
| Type | Type of Loop. |
| Status | Current status of the card. For a more detailed status report, use the Status command in the Maintenance menu. |
| Additional Information | Applies only to PRI/PRI2 and International RPE loops: <br>• For PRI/PRI2 loops, displays the application status, link status, and designation for the Primary and Backup D-channels (DCH). <br>• For 2.0 mb/s RPE loops, displays the RPE group number. |

1  Loop is replaced by slot for Option 11C.

### Supported Network Loop commands

Figure 31 lists the supported hardware and Network Loop commands. Use System Terminal for hardware or commands not supported by the Network Loops window.

**Table 31**    Network Loops

| Hardware | Supported | Commands supported |
|---|---|---|
| Enhanced PE (EPE) Network Loop card | yes | all except test timeslot and LD45 XCON commands |
| Superloop cards | yes | all except LD 45 XCON commands and enable/disable background continuity tests |
| Digital Trunk Interface (DTI/DTI2) cards | yes | all |
| Primary Rate Interface (PRI/PRI2) cards | yes | all |
| Remote Peripheral Equipment (1.5 and 2.0 Mb/s) cards | yes | all |
| Meridian ISDN Signaling Processor (MISP) cards | yes | all except application download commands and Meridian Packet Handler commands |
| DPNSS/DASS2 cards | yes | all |
| APNSS cards | yes | all |
| Conference cards | yes | all |
| Tone and Digit Switch cards | yes | all |
| Conf/TDS cards | yes | all |
| Fiber Remote (FNET) card | yes | all |
| Multifrequency Sender cards | yes | all |
| Phantom loops | yes | None. Phantom loops do appear in the list of loops but there are no overlay commands for these loops. |

## PE Shelves window

The PE Shelves window displays the status of the Peripheral Controller Cards for each PE Shelf on the Meridian 1.

### Launching PE Shelves

From the System window, under Core Equipment, double-click the PE Shelves icon. The PE Shelves window appears as shown in Figure 327.

**Figure 329**  PE Shelves window
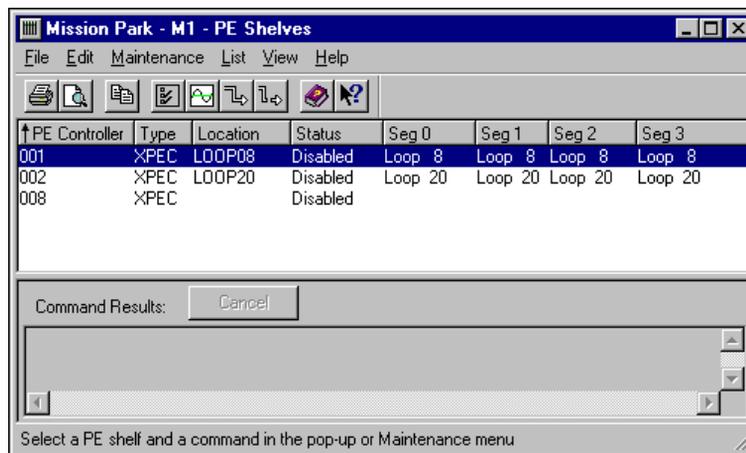


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

### PE Shelves column definitions

The PE Shelves window provides columns of information about each shelf in the system. The PE Shelves list is initially sorted by Controller card number. Table 32 describes each column.

**Table 32**  Column Descriptions

| Column Name | Description |
|---|---|
| PE Controller | Identification number associated with the PE Controller Card. |
| Type | Type of controller card. |
| Location | Location of the PE shelf containing the PE Controller Card. |
| Status | Current status of the PE Controller Card. |
| Seg 0 to Seg 3 | Identifies the loop supported by each of the four PE shelf segments. |

### Supported PE Shelves commands

Table 33 lists the supported hardware and PE Shelves commands. Use System Terminal for hardware or commands not supported by the PE Shelves window.

**Table 33**   Supported PE Shelves commands

| Hardware | Supported | Commands supported |
|----------|-----------|--------------------|
| Peripheral Controller (XPEC) cards | yes | all |
| Fiber Remote (CARR) | yes | all |
| Fiber Remote (FPEC) | yes | all |

## PE Cards window

The PE Cards window displays the status of the all Peripheral Equipment Cards for each PE Shelf on a Meridian 1 system or each Media Gateway on a Succession CSE 1000 system.

> → **Note:** You cannot configure the MGate card through OTM. You must manually configure the MGate card in Overlay 11.

### Launching PE Cards

From the System window, under Core Equipment, double-click the PE Cards icon. The PE Cards window appears as shown in Figure 327.

**Figure 330**   PE Cards window
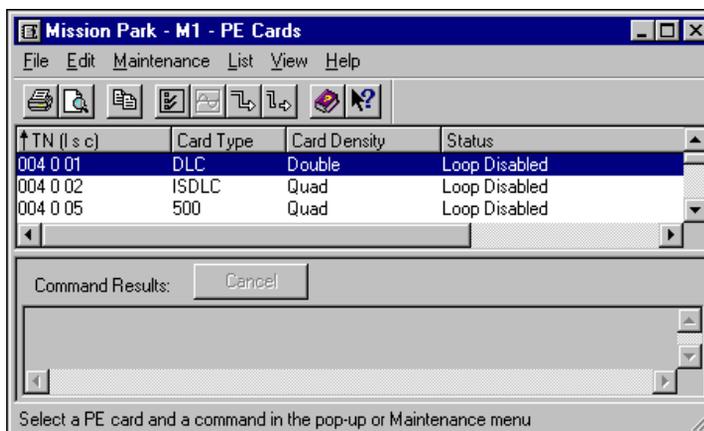


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## PE Cards column definitions

The PE Cards window provides columns of information about each card in the system. The PE Cards list is initially sorted by TN. Table 34 describes each column.

**Table 34**   Column descriptions

| Column Name | Description |
| --- | --- |
| Terminal Number (loop shelf card) | Address of the card. |
| **Note:** TN is replaced with Slot for Option 11C. Tone Service in slot 0 is for DTR/XTD units 0-7, and DTR/XTD/MFC or MFR units 8-15. The individual units appear in the PE Units window. | |
| Card Type | The internal value and type of the various loops, as well as the name presented to the user. There are two types of line and trunks, one for EPE loops and one for Superloops. Superloops have a density of octal. |

**Table 34** Column descriptions

| Column Name | Description |
|---|---|
| Card Density | Density of the card (this can differ from loop density).<br>• Single<br>• Double<br>• Quad<br>• Octal |
| Status | Current status of the PE Card. The status is a text string up to 10 characters. This is the same text as output by the overlays. |

## Supported PE Cards commands

Table 35 lists the supported hardware and PE Cards commands. Use System Terminal for hardware or commands not supported by the PE Cards window.

**Table 35** Supported PE Cards commands

| Hardware | Supported | Commands supported |
|---|---|---|
| IPE/EPE Line cards | yes | all |
| ISDLC cards | yes | all |
| IPE/EPE Trunk cards | yes | all |
| BRI Line cards | yes | all |
| BRI Signaling Processor (BRSC) cards | yes | all |
| Digitone Receivers (DTR) | yes | all |
| Multifrequency Receivers (DTR) | yes | all |
| Tone Detector cards | yes | all |
| Extended Tone Detector (XTD) cards | yes | all |
| Multifrequency Signaling (MFC/MFE/MFVE/MFK5/MFK6) cards | yes | all |

**Table 35** Supported PE Cards commands

| Hardware | Supported | Commands supported |
|---|---|---|
| Mobility:<br>• EIMC<br>• MXC<br>**Note:** These cards appear in the list of cards. However, you must use the Mobility application to access all maintenance commands for these cards. | yes<br>yes | none<br>none |
| ITG cards | yes | all |

## PE Units window

The PE Units window displays information for selected PE units and Directory Numbers on the Meridian 1 or Succession CSE 1000 system.

### Launching PE Units

**1** From the System window, under Core Equipment, double-click the PE Units icon. The Find PE Units dialog box (Figure 331) appears to allow you to select a range of DNs or TNs. This helps you avoid uploading thousands of items.

**Figure 331**   Find PE Units dialog
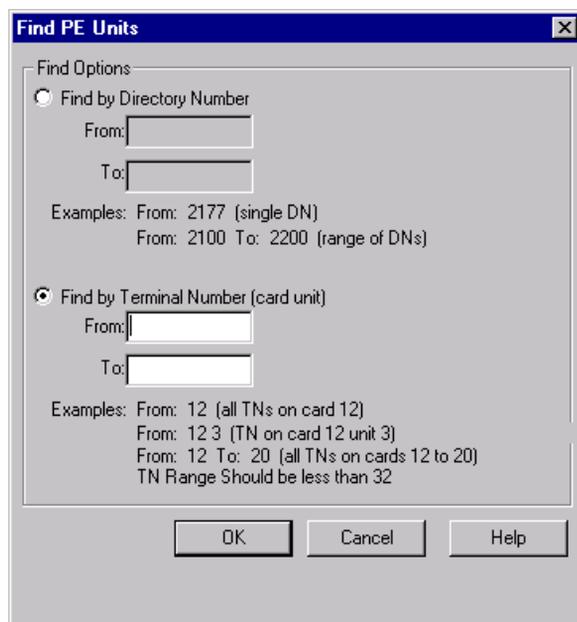


You can view both TNs and DNs in the PE Units window.

- Viewing by TN is more useful than print TNB
- Viewing by DN is more useful than print DNB

**2**   Make a selection of DN or TN, select a range, and click **OK**. The PE Units window appears as shown in Figure 327 or Figure 333 (depending on whether you selected TN or DN) in the Find dialog box.

**Figure 332**  PE Units window (by TN)
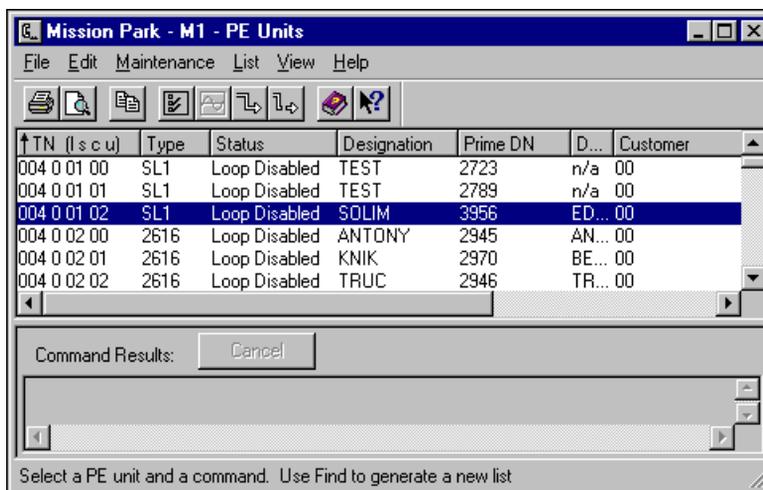


**Figure 333**  PE Units window (by DN)
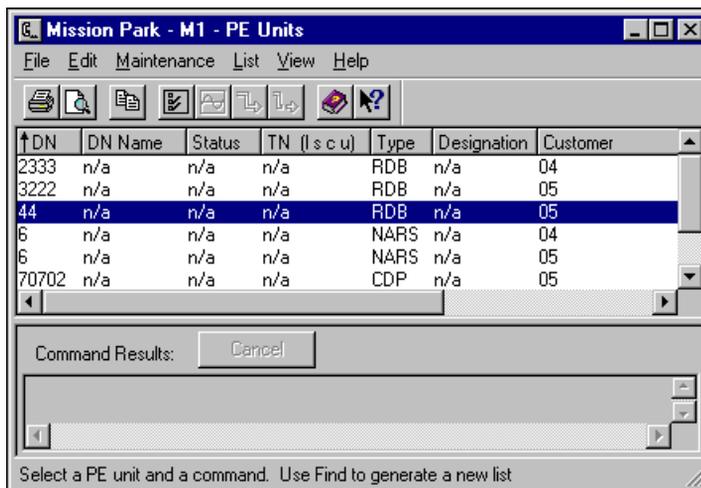


The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## PE Units column definitions

The PE Units window provides columns of information about each DN and TN in the system. The PE Units window is initially sorted by DN or TN number (depending on what you specified in the Find PE Units dialog box). Table 36 describes each column.

**Table 36** Column definitions

| Column Name | Description |
|---|---|
| TN | Terminal number address associated with the card. This address includes the loop, shelf, card, and unit number for all systems except Option 11. For Option 11 this address includes card and unit. |
| DN | Directory number. |
| Type | Type of PE unit. |
| Status | Current status of the PE unit. For a more detailed status report, use the Status command on the Maintenance menu. |
| Designation | Additional information about the unit, such as location or cabling details, specified by the person who installed the unit. |
| Prime DN | Directory number (DN) associated with key 0 on the telephone. |
| DN Name | Name associated with the directory number. |
| Customer | Customer number associated with the PE unit. |
| Date | Last date data was updated for this unit. |
| NCOS | Network Class of Service group associated with the unit. |
| Key | Telephone key number associated with the directory number (DN). |
| MARP | Indicates whether this telephone is the Multiple Appearance Redirection Prime (MARP). |

## Supported PE Units commands

Table 37 lists the supported hardware and PE Units commands. Use System Terminal for hardware or commands not supported by the PE Units window.

**Table 37** Supported PE Units commands

| Hardware | Supported | Commands supported |
|---|---|---|
| 500 - 500/2500 telephone | yes | all |
| 1250 - M1250 Console | yes | all |
| 2003 - 2003 telephone | yes | all |
| 2006 - M2006 telephone | yes | all |
| I2004 - i2004 Internet telephone (ITG) | yes | all |
| 2008 - M2008 telephone | yes | all |
| 2009 - M2009 telephone | yes | all |
| 2016 - M2016 telephone | yes | all |
| 2018 - M2018 telephone | yes | all |
| 2112 - M2112 telephone | yes | all |
| 2216 - M2216 telephone (ACD) | yes | all |
| 2250 - M2250 Console | yes | all |
| 2317 - M2317 telephone | yes | all |
| 2616 - M2616 telephone | yes | all |
| 3000 - M3000 Touchphone | yes | all |
| 3901 - M3901 telephone | yes | all |
| 3902 - M3902 telephone | yes | all |
| 3903 - M3903 telephone | yes | all |
| 3904 - M3904 telephone | yes | all |
| 3905 - M3905 Call Center telephone | yes | all |
| 3903H - M3903 Virtual Office Host Telephone | yes | all |
| 3904H - M3904 Virtual Office Host Telephone | yes | all |
| ADM - Add-on Data Module | yes | all |
| **Note:** The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported. | | |

**Table 37** Supported PE Units commands (continued)

| Hardware | Supported | Commands supported |
|---|---|---|
| AID - AIOD trunk | yes | all |
| ATT - QCW3/4 Console | yes | all |
| ATVN - Autovon trunk | yes | all |
| AWR - Automatic Wake-Up RAN/Music trunk | yes | all |
| CMOD - Class Modem | yes | all |
| BRI - Basic Rate Interface | yes | all |
| COT - Central Office Trunk | yes | all |
| CSA - CCSA trunk | yes | all |
| DIC - Dictation trunk | yes | all |
| DCE - Digital Cordless Set | yes | all |
| DID - DID trunk | yes | all |
| DTD - Dial Tone Detector | yes | all |
| DTR - Digitone Receiver | yes | all |
| FEX - Foreign Exchange trunk | yes | all |
| FGDT - Feature Group D Trunk | yes | all |
| IDA - Integrated Digital Access | yes | all |
| ISA - Integrated Services Access trunk (ISDN) | yes | all |
| ITG - Integrated IP Telephony Gateway | yes | all |
| MCU - Communications Unit | yes | all |
| MDECT - Meridian Digitally Enhanced Cordless Telecommunications (DECT) | yes | all |
| MDM - Modem/Data Module | yes | all |
| MFC - Multifrequency Signaling | yes | all |
| MFE - Multifrequency Signaling for Socotel sender/receiver | yes | all |
| MFK5/MFK6 - Spanish KD3 MF Signaling | yes | all |
| MFR - Multifrequency Receiver (FGD) | yes | all |
| MFVE - Multifrequency versatile units | yes | all |
| MUS - Music trunk | yes | all |
| **Note:** The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported. | | |

**Table 37**   Supported PE Units commands (continued)

| Hardware | Supported | Commands supported |
|---|---|---|
| OOSS - Out of Service Terminal | yes | all |
| PAG - Paging trunk | yes | all |
| PWR - Power | yes | all |
| R232 - Data Access unit | yes | all |
| R422 - Data Access unit | yes | all |
| RAC - Real Analog Channel | yes | all |
| RAN - Recorded Announcement trunk | yes | all |
| RCD - Recorder trunk | yes | all |
| RDC - Real Digital Channel | yes | all |
| RLM - Release Link Main trunk | yes | all |
| Mobility<br>• MPORTBL<br>**Note:** This card appears in the list of cards. However, you can only access the maintenance commands using the Mobility application. | yes | none |
| RLR - Release Link Remote trunk | yes | all |
| SL1 sets | yes | all |
| TCON - Tandem Connection for MPH | no | none |
| TDET - Tone Detector | yes | all |
| TIE - TIE trunk | yes | all |
| VAC - Virtual Analog Channel | yes | all |
| VDC - Virtual Digital Channel | yes | all |
| WAT - Wide Area Telephone Service trunk | yes | all |
| XTD - Extended Dial Tone Detector and Digitone Receiver | yes | all |
| DN types: ACDN, ADCP, CDN, CDP, CHDN, DISA, DSDN, FCC, LDN, MCDN, NARS, PARK, RDB, REFx, RLDN, RSA, SFP, SS25, T100, TSTx, VNS, IADN | yes | These are DNs that have no associated TN. Typically, the only command is print DN block. |
| **Note:** The manual test command is not supported for any trunk type. Option 11C Model TNs are not supported. | | |

# B- and D-channels window

The B and D-channels window displays the channels on the selected digital trunk. It allows you to execute overlay commands for a selected channel by choosing commands from the Maintenance menu. The results appear in the Command Results area of the window. The Cancel button allows you to terminate a command in progress.

The following types of channels appear in the B and D-channels window:

- B-channel on a PRI/PRI2/DTI/DTI2/DPNSS loop
- D-channel on DCHI Card
- D-channel on MSDL Card
- Real Analog Channel (RAC)
- Real Digital Channel (RDC)
- Virtual Analog Channel (VAC)
- Virtual Digital Channel (VDC)

## Launching B- and D-channels

**1** From the System window, under Core Equipment, double-click the Network Loops icon. Select a PRI/PRI2 loop.

**2** From the Maintenance menu or the right mouse popup menu, select Channels. The B and D-channels window appears (see Figure 334).

**Figure 334** Channels window
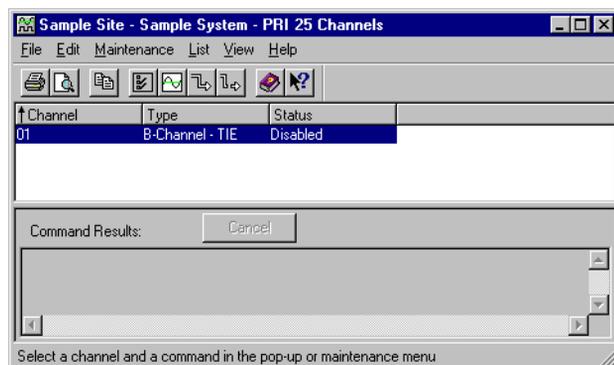
The command results area in the lower portion of the window displays the results of Maintenance menu commands.

## B- and D-channels column definitions

The B and D-channels window provides columns of information about each loop in the system. The B and D-channels list is initially sorted by Channel number. Table 38 describes each column.

**Table 38**   Column definitions

| Column Name | Description |
|-------------|-------------|
| Channel Number | Number associated with the channel. PRI loops may have 0-23 channels; PRI2 loops from 0-29 channels. |
| Type | Type of channel. |
| Status | Current status of the channel. |

## Supported B- and D-channel commands

Table 39 lists the supported hardware and commands. Use System Terminal for hardware or B- and D-channel commands not supported by the B and D-channels window.

**Table 39**   B and D-channels

| Hardware | Supported | Commands supported |
|----------|-----------|--------------------|
| The window contains the list of channels for the selected loop. You can also access D-channels from the I/O ports window. DPNSS loops have both real and channels. | yes | all, except enable all channels on DTI cards and loopback test commands |

# Inventory Reporting

The OTM Inventory Reporting application allows you to generate system inventory files and download them to your PC. The inventory files list cards and sets installed in your system.

You must have Microsoft Excel 95 or later to use the Inventory Reporting application. You also need an Ethernet connection to your Meridian 1 or Succession CSE 1000 system.

Inventory Reporting is based on LD 117. For additional overlay information, see the *Software Input/Output guide* (553-3001-311 and 553-3001-511).

## Launch Inventory Reporting

**1** In your OTM Navigator window, open a System Window for the Meridian 1 or Succession CSE 1000 system you wish to inventory. (See Figure 335 on page 657)

**2** Connect to that system. (See "Working with the OTM System Window" on page 65 for procedures.)

> **→** **Note:** If you do not connect to a system before opening Inventory Reporting, some features are disabled.

**Figure 335**   Sample system window
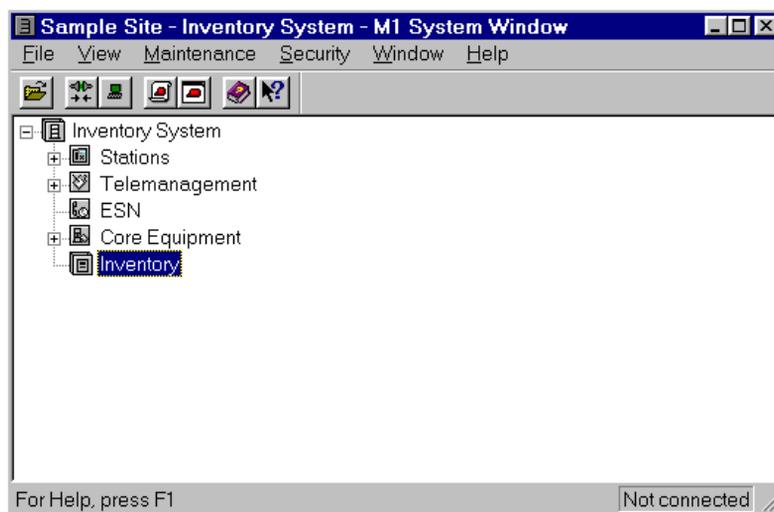
**3** Once connected, double-click the System Window Inventory icon.

> → **Note:** If you have not connected to a system, a dialog box appears asking if you want to connect. Click Yes to connect to a system, or click No to proceed without connecting.

The Inventory window (Figure 336) appears.

**Figure 336**   Inventory window
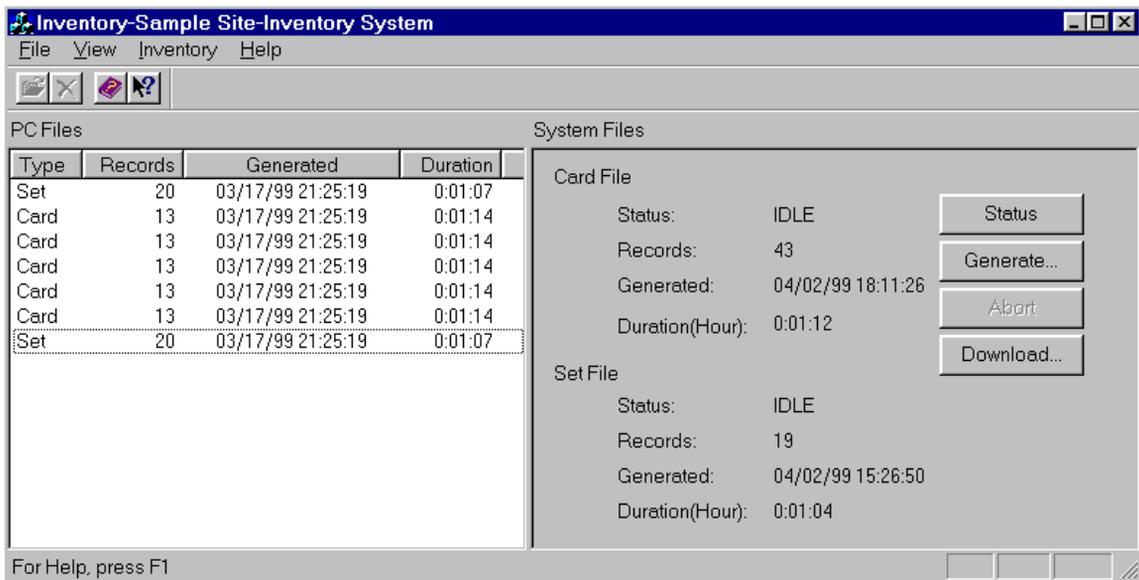


The main Inventory window contains the PC Files frame and the System Files frame. The PC Files frame lists inventory files downloaded from the Meridian 1 or Succession CSE 1000 system. The System Files frame provides status and statistics for the Meridian 1 or Succession CSE 1000 system.

## Main window menus

Inventory Reporting's main window menus include the following commands:

- File
  — **Open:** Open the file selected in the list view of the PC File frame.
  — **Delete:** Delete the file selected in the list view of the PC File frame.

— **Exit:** Exit the Inventory window.

- View
    - **Toolbar:** Toggle the Inventory toolbar.
    - **Status Bar:** Toggle the status bar.
    - **Automatic Status:** If selected, Inventory Reporting updates the inventory file status displayed on the System File frame every 10 seconds.
- Inventory
    - **Abort...:** Abort any file generation now running on the system.
    - **Download...:** Download one or more inventory files from the system.
    - **Generate...:** Generate one or more inventory files.
    - **Status:** Query the inventory status of the system.
- Help
    - **Help Topic:** Provide a list of help topics.
    - **What's This?:** Change the cursor and display help information about the next item you select.
    - **About Inventory...:** Provide Inventory Reporting application release information.

### Inventory files

The PC Files frame lists all inventory files downloaded from the Meridian 1 or Succession CSE 1000 system. There are two types of inventory files available:

- Card Inventory files
- Set Inventory files

To open a file:

**1** Select a file in the list.

**2** Click File - Open.

Inventory Reporting creates a temporary report file (*.CSV) which opens in Microsoft Excel.

To delete a file from the list:

**1** Select a file in the list.

**2** Click File - Delete.

## Card Inventory files

The Card Inventory file provides columns of information in Excel about each card configured in the system. Table 40 describes each column.

**Figure 337** Sample Card Inventory file

| MPK-M1-Option11 Inventory Report | | |
|---|---|---|
| Type: Card Records: 13 Generated: 03/17/99 21:25:19 | | |
| **TYPE** | **TN** | **ID PROM** |
| 500 | 012 0 09 | <Unavailable> |
| 500 | 012 0 14 | <Unavailable> |
| BRI | 012 0 04 | <Unavailable> |
| BRI | 012 0 05 | NT6D70BA 05001F0000000000000000 |
| DLC | 012 0 08 | NT8D02AB 033KV50000000000000000 |
| DLC | 012 0 10 | NT8D02AA0818084035400000000000000 |
| DLC | 012 0 12 | <Unavailable> |
| DTR | 012 0 15 | NT8D16AA0618073566800000000000000 |
| MSDL | 8 | NT6D80AA 1500EE |
| Superloop | 12 | NT8D04BA 0204E0 |
| Superloop | 12 | XPEC4 NNTM1830F6A3 NT8D01BC 03 |
| XEM | 012 0 03 | <Unavailable> |
| XUT | 012 0 02 | <Unavailable> |

**Table 40** Card Inventory file column descriptions

| Column name | Description |
|---|---|
| TYPE | Card type. |
| TN | Terminal number address associated with the card. |
| ID PROM | 32 byte ASCII string whose characters (in order) represent: <br>• Product Engineering Code (PEC) <br>• Color (numeric representation) <br>• Release <br>• One blank character <br>• Product Serialization ID <br>• One blank character <br>• Other (free field) |

The following card types are included in the Card Inventory file:

• all IPE and common equipment cards

- all Meridian 1 or Succession CSE 1000 cards that have a Hardware ID (a.k.a. ID PROM)

The following card types are not included in the Card Inventory file:

- cards manufactured without an ID PROM
- TTY or PC cards
- Power Supply
- any non-Nortel Networks (third-party) cards, including those designed to simulate included cards.

## *Set Inventory files*

The Set Inventory file provides columns of information in Excel about each set configured in the system. Table 41 describes each column.

**Figure 338**   Sample Set Inventory file

| TYPE | TN | ID PROM | DESIGNATOR | PRIMARY DN |
|------|----|---------|------------|------------|
| 2016 | 012 0 08 06 | \<Unavailable\> | 2016 | 2032 |
| 2016 | 012 0 08 22 | \<Unavailable\> | MCA | 2332 |
| 2216 | 012 0 08 03 | \<Unavailable\> | AGNT1 | 2951 |
| 2216 | 012 0 08 08 | \<Unavailable\> | NAGNT1 | 3951 |
| 2216 | 012 0 08 09 | \<Unavailable\> | NACD | 4950 |
| 2216 | 012 0 08 10 | \<Unavailable\> | NAGNT1 | 4951 |
| 2616 | 012 0 08 00 | \<Unavailable\> | 2616 | 2020 |
| 2616 | 012 0 08 02 | M2616     NT2K16WK 35 01 C31632 | 2616 | 20210 |
| 2616 | 012 0 08 04 | M2616     NT2K16WM 35 01 C310C8 | 2616 | 2022 |
| 2616 | 012 0 08 11 | M2616     NT2K16WN 35 01 33A45D | 2616 | 3021 |
| 2616 | 012 0 08 12 | \<Unavailable\> | 2616 | 4021 |
| 2616 | 012 0 08 16 | \<Unavailable\> | MCA | 2320 |
| 2616 | 012 0 10 00 | \<Unavailable\> | DJL | 0 |
| 3901 | 012 0 08 15 | \<Unavailable\> | TAUR | 0 |
| 3905 | 012 0 08 14 | \<Unavailable\> | TAUR2 | 0 |
| AWR | 012 0 02 06 | \<Unavailable\> | AGNT1 | 0 |
| R232 | 012 0 12 00 | \<Unavailable\> | R232 | 2301 |
| R232 | 012 0 12 01 | \<Unavailable\> | R232 | 2302 |
| R232 | 012 0 12 04 | \<Unavailable\> | R232 | 2303 |
| R232 | 012 0 12 05 | \<Unavailable\> | R232 | 2304 |

*MPK-M1-Option11 Inventory Report*

*Type: Set   Records: 20    Generated: 03/17/99 21:25:19*

**Table 41**  Set Inventory file column descriptions

| Column name | Description |
|---|---|
| TYPE | Set type. |
| TN | Terminal number address associated with the set. |
| ID Prom | 32 byte ASCII string whose characters (in order) represent:<br>• Product Engineering Code (PEC)<br>• Color (numeric representation)<br>• Release<br>• One blank character<br>• Product Serialization ID<br>• One blank character<br>• Other (free field) |
| DESignator | 6 character ASCII string used by Station Administration and Overlay 11. |
| Primary DN | Primary directory number. |

The following sets are included in the Set Inventory file:

| | |
|---|---|
| M2006 | M2008 |
| M2016 | M2616 |
| M2216 | M390X |
| M3110 | M3310 |
| M3820 | |

The following sets (and data units) are not included in the Set Inventory file:

- Data units on:

| | |
|---|---|
| M2006 | M2008 |
| M2016 | M2616 |
| M2216 | M390X |
| M3110 | M3310 |
| M3820 | |

- SL-1 sets and data units
- 500/2500 sets and data units
- Any other digital sets or data units
- Any non-Nortel Networks (third-party) sets, including those designed to simulate included sets.

## Generate an inventory file

You will need System Administrator privileges to generate an inventory file.

To generate an inventory file:

**1** In the Inventory window, select Inventory - Generate...

A dialog box appears.

**Figure 339**   Select file to generate
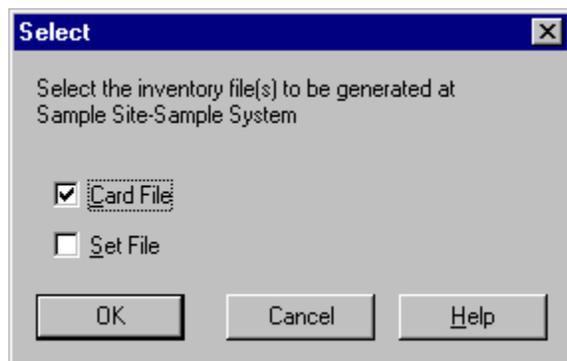


**2** Check Card File to generate the Card Inventory file.

**3** Check Set File to generate the Set Inventory file.

→ **Note:** If both boxes are checked, both files will be generated.

**4** Click OK to begin generating the file(s).

## Download an inventory file

You will need System Administrator privileges to download an inventory file.

To download an inventory file:

**1** In the Inventory window, select Inventory - Download...

A dialog box appears.

**Figure 340** Select file to download
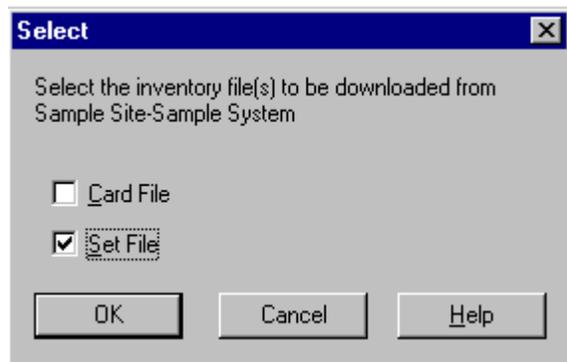


**2** Check Card File to download the Card Inventory file.

**3** Check Set File to download the Set Inventory file.

→ **Note:** If both boxes are checked, both files will be downloaded.

**4** Click **OK** to begin downloading the file(s).

## Check file generation status

To check file status:

**1**    In the Inventory window, select Inventory - Status.

The System Files frame information is updated. Set and Card Inventory status consists of a state value and a substate value. See Table 42 and Table 43 for their interpretations.

**Table 42**    Valid state values

| State value | Meaning |
|---|---|
| IDLE | There is no activity on the switch involving the inventory files. |
| BUSY | An inventory file is in use. |

**Table 43**    Valid substate values

| Substate value | Meaning |
|---|---|
| NONE | There is no activity on the switch involving the inventory files. |
| GENERATING | An inventory file is being generated by the switch software. |
| DOWNLOADING | An inventory file is being downloaded from the switch to the PC. |

## Abort file generation

You will need System Administrator privileges to abort generation of an inventory file.

To abort inventory file generation:

**1**    In the Inventory window, select Inventory - Abort

A dialog box appears.

**Figure 341**   Select file to abort
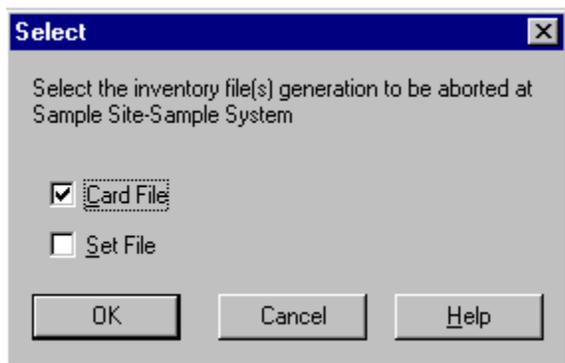


**2**   Check Card File to abort generation of the Card Inventory file.

**3**   Check Set File to abort generation of the Set Inventory file.

**Note:** If both boxes are checked, both files will be aborted.

**4**   Click OK to abort generation of the file(s).

# Chapter 7
# Traffic Analysis

This chapter provides basic information on setting up and running Traffic Analysis. In order to ensure optimum operation of this application, read the material in this chapter before attempting to run Traffic Analysis.

# Overview

Traffic Analysis performs the following functions:

— Collects traffic data from a specific Meridian 1 or Succession CSE 1000 system
— Maintains a database of collected traffic data
— Defines report and graph parameters
— Generates reports to extract significant information from raw traffic data, such as trunk usage, peak periods, process loads and junctor and loop traffic

## About this chapter

This chapter is intended as an introduction to the Traffic Analysis application as well as an overview of its major functions. It discusses how you can best use it to manage traffic data and generate meaningful reports.

This chapter does not discuss each Traffic Analysis function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each Traffic Analysis function and command, use on-line Help. You can use Help to obtain information for topics either directly or via its index and word-search functions. You can obtain context-sensitive help on any topic by simply pressing <F1> during the Traffic Analysis session or by clicking Help in the dialog or window in which it appears.

# Traffic Analysis system sizing guidelines

System sizing for Traffic Analysis must consider several factors to ensure adequate capacity and throughput to retrieve, store and report on traffic data. The major factors are as follows.

1  Does the system have enough free disk space to store and maintain the traffic data?

2  Is there sufficient communications bandwidth to perform traffic data collection from all systems in time?

3  Does the system have sufficient resources to provide reports on time?

### Traffic Database capacity

The size of the Traffic Database varies depending on the Meridian 1 or Succession CSE 1000 system. The Traffic Database will also grow rapidly depending on how much data is kept for reporting purposes. Since the active database should normally be archived monthly (thus retaining the previous month's traffic data for reporting as well as updating statistics on the current month), you should expect to store about two months of data in the Traffic Database. Older data should be routinely archived and moved to external storage. Since, however, it will normally be stored transiently on disk as well, you should reserve capacity for the archive operation.

The actual size of the database depends on your specific configuration parameters such as: the number of loops, trunks, consoles, etc.

Use the following example formula to estimate the size of the Traffic Database (including a one-month archive). This example formula assumes that traffic data collection will be scheduled for each hour in the day (i.e., you are not excluding any time for maintenance on the Meridian 1 or Succession CSE 1000 system) and that you have 31 days of archived data and 61 days of active data.

24 hours x (61 days + 31 days of archive) = 2208 Traffic Database samples

Thus, you should allow for 2500 samples (this will allow for temporary files used during reporting). Use the following calculation to determine the total bytes required for one (1) Traffic Database sample. Once you have calculated the total bytes for 1 sample, you must then multiply it by the total number of samples.

1 Traffic Database sample =

[(Network Loops x 29) + (Junctor Groups x 17) +

((C/S Links + A/M Links) x 240) + (D-Channels x 115) +

(Multi-Purpose ISDN Signaling Processors x 59) +

(Customers x 424) + (Route Lists x 299) +

(Individual Attendants x 39) + (Network Classes of Service x 35) +

(Incoming Trunk Groups x 35) + etc.]

## Communications throughput

The amount of time that it takes a system to collect traffic data depends on the number of systems to collect, the Meridian 1 or Succession CSE 1000 system configuration, the communication line speed and the number of communication ports available on the Optivity Telephony Manager (OTM) system.

Traffic data is produced hourly by the Meridian 1 and Succession CSE 1000 systems. This data is either collected hourly by Traffic Analysis from the Meridian 1 or Succession CSE 1000 system or daily from an optional data buffer device which is connected to the Meridian 1 or Succession CSE 1000 system and

stores the hourly data. Once retrieved, the data is compressed by a 4-1 ratio for reporting. Having calculated the size of the database sample, you can calculate the time required to transfer the data. These calculations allow for dialing, connection, logon, traffic data requests, logout and disconnect.

— No buffer device—hourly:

Seconds to Collect Sample = [Setup + (Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

— With a buffer device—daily:

Seconds to Collect Sample = [Setup + (Hours per Day x Compression Ratio x Size of Traffic Sample) ÷ Modem Speed]

> → **Note:** For both cases, allow 40 seconds for setup and allow 85% throughput on modem speed for buffer protocol.

The goal is to ensure that the time required to collect data from all systems, using all available communications paths, is less than the interval between collection cycles. Note that modem speeds are typically rated by baud rate—which roughly translates to bits per second. As a rule of thumb, use 10 bits per byte in calculating modem speed. A 2400 baud modem delivers about 240 bytes per second.

*Sample calculation*

The following is an example for Traffic Database sizing and a communication throughput estimate:

Switch Option 61 + 2400 baud modem (no buffer device)

| | | |
|---|---|---|
| 7 Network Loops | x 29 | = 203 |
| 1 Junctor | x 17 | = 17 |
| 1 Link | x 240 | = 240 |
| 0 D-Channels | x 115 | = 0 |
| 0 MISP's | x 59 | = 0 |
| 1 Customer | x 424 | = 424 |
| 9 Route Lists | x 299 | = 2691 |

| 1 Ind. Attendant | x 39 | = 39 |
| 0 NCOS's | x 35 | = 0 |
| 2 In. Trunk Groups | x 35 | = 70 |
| | | 3,684 bytes total |
| Disk Requirements | = 2,500 x 3,684 | |
| | = 9,210,000 bytes (assumes two months on-line) | |

Hourly:

| Data Collection Duration | = 40 + (4 x 3,684) ÷ (240 x 0.85) |
| | = 112 seconds = 1:52 minutes each hour |

Daily:

| Data Collection Duration | = 40 + (24 x 4 x 3,684) ÷ (240 x 0.85) |
| | = 1,774 seconds = 29:34 minutes each day |

## System resources

The resources required to produce reports are provided by the Windows environment and are affected by activities on the system. System loads use CPU, memory, disk storage and bandwidth. A typical application such as a word processor or electronic mail might generate little CPU load, but might put large demands on memory.

In any Windows environment, memory (RAM) can be extended through the use of virtual memory. Virtual memory allows the PC to use disk space as if it were RAM. Both RAM and virtual memory must be available in sufficient quantity for all concurrent system activities. A shortage of memory will either prevent an application from running or will slow the overall system.

CPU loading depends on the frequency and number of reports. While the system is designed to concurrently generate multiple reports (only for multiple systems), the system runs at maximum throughput when generating one report at a time.

The Windows Print Manager ensures that data from separate reports are not mixed-up on the printer. In order to perform this function, the Print Manager temporarily stores reports on disk (the Print Manager has a backlog limit of 99 print jobs). Therefore the CPU speed, available virtual memory and printer speed dictate the time required to produce the reports and the practical system limits to traffic data throughput.

# Getting started

This section contains information used for running and setting up Traffic Analysis for initial use.

Before using Traffic Analysis, you must install and configure it as part of Optivity Telephony Manager (OTM) system. Refer to "Configuring Sites, Systems, and User accounts" on page 67 for complete details on configuring Traffic Analysis and assigning it to a site and system.

## System access

To access Traffic Analysis from the OTM Navigator, click the desired site and system and click Traffic Analysis from the Telemanagement menu. The main Traffic Analysis window will appear.

After you have assigned Traffic Analysis to a site and system, you can use it to collect traffic data, generate reports and graphs and maintain its databases.

Before you can begin collecting traffic data and report on it, you must enter the parameters for the data collection and report generation processes. The following section provides a complete example of how to accomplish these tasks, as well as instructions for scheduling and starting data collection from the Meridian 1 or Succession CSE 1000 system.

> ⚠️ **Warning:** When a Limited Access Password (LAPW) is defined to collect traffic data from Overlay 2, configure the password to have access to all customers by setting the CUST prompt to ALL. For more information about Limited Access to Overlays, see the X11 Software Features Guide.

## Traffic Analysis example

The following example is provided to assist you in setting up Traffic Analysis.

> ➡️ **Note:** The instructions in this example assume that you have successfully installed the OTM software and completed the OTM configuration tasks described in Chapter 2, "Common Services".

This example illustrates how to accomplish the following tasks:

— Run OTM and open a site and system
— Run Traffic Analysis
— Set up the Meridian 1 or Succession CSE 1000 system for traffic collection
— Collect traffic data from the Meridian 1 or Succession CSE 1000 system
— Print a D-Channel Report that contains data for incoming and outgoing calls

## Run OTM and open site/system

Before you run Traffic Analysis, you must first run the OTM Navigator and open this site and system. You can then select Traffic Analysis from the Telemanagement menu in this system's window.

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→ **Note:** This system must already have been created using the System Configuration function. Refer to Chapter 2, "Common Services" for more details on the System Configuration function.

---

Perform the following steps to open the site and system.

**1** Run the OTM Navigator by clicking the OTM Navigator icon. At the Login dialog which appears, enter your user ID and password and click OK to continue.

**2** To open the site and system for this example (e.g., site name is Acme Company and system name is Head Office), click Acme Company in the OTM Navigator window and double-click Head Office from this site.

This will access the system window for Head Office.

**Figure 342** OTM Navigator Site/System
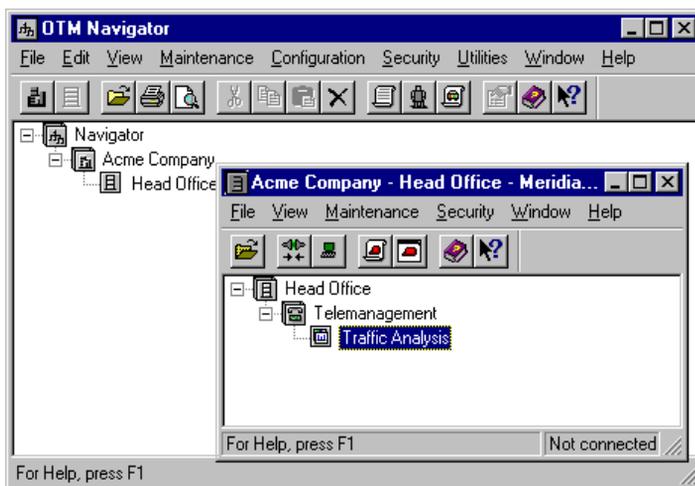
### **Run Traffic Analysis**

Perform the following steps to run Traffic Analysis.

**1** From the system window, click the Telemanagement menu item. This will display the OTM applications which have been assigned to the system Head Office under Telemanagement (e.g., Telecom Billing System, Call Tracking and Traffic Analysis).

**2** To run Traffic Analysis, double-click Traffic Analysis from this menu. The Traffic Analysis main window will appear.

**Figure 343**   Traffic Analysis main window
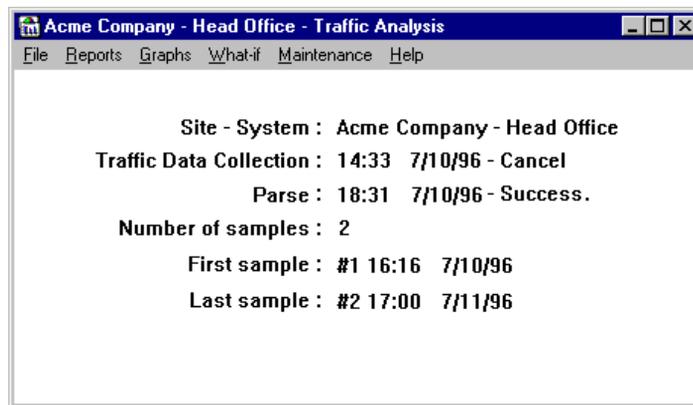


### *Assign Traffic Analysis to system (if not already assigned)*

If Traffic Analysis has not been assigned to this system, it will not appear in the Telemanagement menu. To assign Traffic Analysis to this system, perform the following steps.

**1** Click Properties from the File drop-down menu to access the System Properties dialog.

**2** From the System Properties dialog, first enter a communications profile for Traffic Analysis by clicking the Communications tab. In the Communications Profile field, enter a profile for Traffic Analysis.

**3** Click the Applications tab to assign Traffic Analysis to this system. From the Communications Profile drop-down list box, select the communications

profile which you just entered in the Communications tab. Click Traffic Analysis in the Applications list box to highlight it and turn on the Enable check box. Notice that the flag Yes will appear in the Enabled field next to Traffic Analysis in this list box.

**4** Click OK to assign Traffic Analysis to this system. The Traffic Analysis icon will appear under Telemanagement for the system Head Office.

## Set up the Meridian 1 or Succession CSE 1000 system for traffic data collection

Follow these steps to set up the Meridian 1 or Succession CSE 1000 system for traffic data collection. You only need to perform this step once when you initially set up Traffic Analysis.

**1** Click Traffic Data Collection from the Maintenance drop-down menu of the Traffic Analysis main window.

**2** Turn on the Set up PBX for Traffic check box. This enables the Meridian 1 or Succession CSE 1000 system to collect and transmit data.

## Collect traffic data from the Meridian 1 or Succession CSE 1000 system

Follow these steps to collect traffic data from the Meridian 1 or Succession CSE 1000 system.

**1** Click Traffic Data Collection from the Maintenance drop-down menu.

**2** Turn on the Schedule Traffic Collection check box.

**3** From this dialog, click OK to start the traffic data collection. This will schedule the load of traffic data from the Meridian 1 or Succession CSE 1000 system to a temporary data file TRAFFIC.DMP for parsing and report processing.

Once the system collects the initial traffic data, it will then parse it into files with the names TFnnnn.DAT (where nnnn identifies the type of report which will be generated).

## Print traffic report for incoming & outgoing calls

Follow these steps to print a report for incoming and outgoing calls.

**1**   Before requesting a printed report, you must select your printer as the output device. From the Traffic Analysis window, click File and click Specify Output Device from its drop-down menu. In the resulting dialog, click Printer and click OK.

**2**   Click Print Setup from the File drop-down menu to select the printer for this report. Click OK to save this information and return to the Traffic Analysis main window.

**3**   To print the report, click System Reports from the Reports drop-down menu. The System Reports dialog appears.

**4**   Click on the Report down arrow to open the list of available system reports. To select the D-Channel Report, click D-Channel.

**5**   Click on the Profile down arrow to view a list of available profiles for the D-Channel report. Select DCHANL.PRO - D-Channel Report. This is the default report profile used to select data for the D-Channel Report.

**6**   Click Edit next to the Profile list box to access the Profile Editor for the DCHANL.PRO report profile. A dialog will appear listing the profile's description, options and parameters. You can enter information here to tailor the report.

**7**   In the Options list, click to select only the following items:

Incoming
Outgoing

De-select any other highlighted items in the list.

**8**   To save this default profile to a new profile name, click Save As from the File drop-down menu. In the Save As dialog, type: DCHANL1.PRO for the file name.

**9**   Click Close from the File drop-down menu to exit the Profile Editor and return to the System Reports dialog.

**10**   Click on the Filters down arrow to view a list of available filters for the report. Click None. This clears the Filters box so that the report includes all collected traffic data.

**11**   Click OK to print this report. A report status box indicates printing progress.

## Help

As with the other OTM applications, Traffic Analysis contains an extensive Help facility which provides you with details on all of its functions and commands. At any time during your Traffic Analysis session, you can press <F1> or click Help to access information on a specific topic. You can also click Help Topics from the Help drop-down menu of the Traffic Analysis main window and search for Help using the Windows Help search functions.

To obtain help for a topic, press <F1> or click Help from the currently selected dialog or window. This will access the Windows Help function and display context sensitive help information on the current topic.

Once you have accessed Help, use it to scroll through the other help topics, search for a specific topic and print help information.

# User Reference

This section contains a general overview of the main Traffic Analysis functions as they are accessed from its main window. It briefly describes their main function and purpose. For complete details on each of these functions and their operation, refer to the Traffic Analysis on-line Help function.

## File menu

This menu contains functions used to select an output device, set up a printer and exit from Traffic Analysis.

To access these functions, click File from the main window and select from the following menu items:

— Select Output Device
— Print Setup
— Close

# Reports & graphs

The Traffic Analysis reports and graphs provide the details for the traffic data collected from the Meridian 1 or Succession CSE 1000 system. These can be printed to an output device, to the screen for review, or to a disk file. Traffic Analysis provides a set of profiles and filters to allow you to tailor the output of these reports and graphs to suit your needs. Once you have collected the traffic data from the Meridian 1 or Succession CSE 1000 system, use the commands in the Reports and Graphs menus (following sections) to generate the required reports and graphs.

## Reports menu

The Reports menu contains functions and commands to print reports based on the collected traffic data.

The following are the reports available from Traffic Analysis.

— System Reports
- Network Loops
- Service Loops
- Dial Tone Delay
- Processor Load
- Selected Terminals
- Junctor Group
- Command and Status Links and Application Module Links
- D-Channel
- Multi-Purpose ISDN Signaling Processor Traffic
- Multi-Purpose ISDN Signaling Processor DCH Management
- Multi-Purpose ISDN Signaling Processor Messages
- ISDN Generic Functional Protocol
- General Microcellular Operational Measurements
- UWIN Operational Measurements

— Customer Reports
- Networks
- Trunks

- Customer Console Measurements
- Individual Console Measurements
- Feature Key Usage
- Radio Paging
- Parallel Radio Paging
- Serial Radio Paging
- Call Park
- Messaging and Auxiliary Processor Links
- Output Message Traffic
- Input Message Traffic
- Message Attendant Queue
- Telephone Set Status
- Telephone Messaging
- Network Attendant Service
- Semi-Permanent Connection Links Establishment
- Music Broadcast
- RAN Broadcast

— Customer Network Reports

- Route Lists
- Off Hook Queuing
- Call Back Queuing
- Remote Virtual Queuing
- Network Class-of-Service
- Incoming Trunk Group

— System Threshold Reports

- Dial Tone Speed
- Loop Traffic
- Junctor Traffic
- Super Loop Traffic

— Customer Threshold Reports

- Incoming Matching Loss
- Outgoing Matching Loss
- Average Speed of Answer

- Percent Last Trunk Busy
- Off-Hook Queue Overflow Threshold
— Customer Summary Reports
- Traffic System Summary
- Trunks Summary
- Customer Console Summary
- Individual Console Summary

## Graphs menu

Similar to the Reports menu, the Graphs menu contains functions and commands to print graphs based on the collected traffic data.

The following are the graphs available from Traffic Analysis.

— System Graphs
- Network Loops
- Processor Load
— Customer Graphs
- Trunks
- Customer Console Measurement
- Messaging and Auxiliary Processor Links
— Customer Network Graphs
- Route Lists
- Off Hook Queuing
— System Threshold Graphs
- Loop Traffic
- Super Loop Traffic
— Customer Threshold Graphs
- Percent Last Trunk Busy

## Generating reports & graphs

To generate a report or graph, select the report or graph type from the Reports menu or the Graphs menu. When the Report or Graph dialog appears, enter its optional profile and filter information and click OK to print it.

The following is an example dialog in which you can enter reporting criteria and generate the report. The corresponding Graphs dialog operates similarly.

**Figure 344**  System Reports dialog
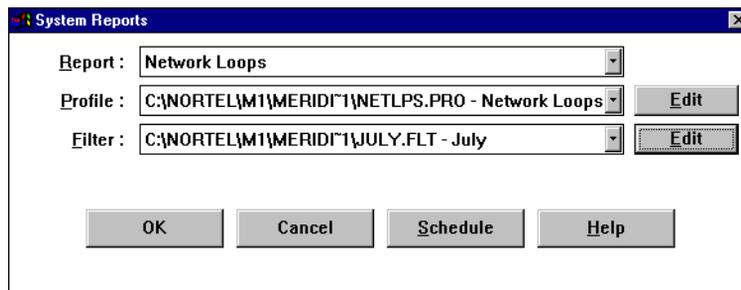


Click on the drop-down button to display a list of the reports or graphs in that category. Each entry in the list has one or more associated profiles and filters. After you click to select a report (or graph), use the same process to select the appropriate profile and filter. Edit buttons next to the Profile and Filter boxes let you review and modify the selected profile and filter.

### *Profiles*

Profiles define the kind of information to include in a report or graph. Each report or graph requires at least one profile. Traffic Analysis includes several default profiles for commonly-used reports and graphs. You can define a new profile by editing one of the default profiles and saving your work under a new profile name. Profile file names use the .PRO extension.

### *Filters*

Filters define the range of traffic data to be included on a report or graph, such as data for a specific month. Filter file names use the **.FLT** extension.

*Exporting Reports*

The Export function allows you to export traffic data from its reports to disk files in specific formats. This function is invoked when a report is generated to screen.

After you have completed your work with profiles and filters, click on one of the following buttons to proceed:

OK to produce the report or graph

Schedule to specify the time at which the report or graph is to be produced

Help to obtain help for this function

Cancel to cancel the request and return to the main window

When you have printed or scheduled the output, the system will return to the Traffic Analysis window.

## "What-if" menu

In addition to generating reports and graphs, you can use Traffic Analysis to ask "What if?" questions on data output from the Meridian 1 or Succession CSE 1000 system. This is accomplished by defining scenarios and viewing hypothetical results. These "What if" scenarios provide different results based on new situations that you input into the system.

To define a scenario, select it from the list of available scenarios. Next, select a profile to define its contents and a filter to set a range for its data. This process is similar to producing a report or graph.

You can define the following "what if" scenarios:

— Processor Load
— Trunk
— Attendant Console

To access this function, open the What-if menu in the Traffic Analysis window.

### Processor Load scenario

The Processor Load scenario provides information on rated capacity for your Meridian 1 or Succession CSE 1000 system. It lists overall and itemized information on the busy hour and the number of attempts at the busy hour rate over the rated capacity. It allows you to adjust the call attempts or the CPU type and view the resulting change in busy hour CPU loading time.

| → | **Note:** In the filter for this scenario, enter a range with a minimum of 24 hours to make the scenario data valid. |
|---|---|

### Trunk scenario

The Trunk scenario allows you to determine the offered traffic, monthly cost and probability of blocking a trunk or a set of trunk groups. Use this scenario to change the offered traffic or the probability of trunk blocking and view the results for the trunks.

### Attendant Console scenario

The Attendant Console scenario provides information on console response and service levels. Use this scenario to change response times and service levels and view the results.

## Maintenance menu

Traffic Analysis provides maintenance functions which are used to: manually collect traffic data; manage the Traffic Database; edit report profiles and filters; and edit text files.

### Traffic Database

The Traffic Database function is used to archive a range of traffic data as well as merge, delete and reindex traffic data files.

## Traffic Data Collection

The Traffic Data Collection function is used to initiate data collection from the current Meridian 1 or Succession CSE 1000 system. Use this function to set up the Meridian 1 or Succession CSE 1000 system for traffic collection and schedule traffic data collection. For a complete list of script files used for traffic data collection, refer to Appendix B, "Script File Summary," on page 1.

## Profile Editor

Every report or graph requires a profile that defines the data to be included in a report or graph. OTM provides default profiles for common reports and graphs. Use the Profile Editor to view and edit the options and parameters in a profile. You can also use profiles to store and manage sets of configuration and customization information.

## Filter Editor

Filters define the range of traffic data to be included in a report or graph. The Filter Editor allows you to create or edit report filters.

## Text File Editor

In certain cases, you may periodically need to view or edit a text file used by Traffic Analysis. For example, you may edit the traffic data file collected from the Meridian 1 or Succession CSE 1000 system to correct any errors before the system processes the file. Use the Text File Editor command to edit any text files for Traffic Analysis.

# Chapter 8
# ESN Analysis and Reporting Tool

## Overview

Electronic Switched Network (ESN) is the Meridian 1 and Succession CSE 1000 system's powerful private network application. The ESN Analysis and Reporting Tool (ESN ART) is an OTM application designed to assist you in configuring, analyzing, and managing large and complex ESN databases.

ESN ART allows you to retrieve the ESN configuration from a Meridian 1 or Succession CSE 1000 system, and convert the overlay-based data into a PC database. Using the Windows user interface, you can easily view, modify, and print the data. The PC based data can then be transmitted back to the Meridian 1 or Succession CSE 1000 system.

### About this chapter

This chapter is intended to provide you with an introduction to the OTM ESN ART application as well as an overview of its major functions.

### Help

This chapter does not discuss each ESN ART function and command in detail. It only discusses the major functions and how they are accessed. For detailed information on each ESN ART function, use the on-line Help function. You can use the Help function to obtain help for topics either directly or via its index and word-search functions. While running ESN ART, you can obtain context-sensitive help on any topic you require by simply clicking Help from a specific dialog or window.

To obtain help for a topic, click Help from the currently selected dialog or window. This will access the Windows Help function and display context sensitive help information on the current topic.

Once you have accessed Help, use it to scroll through the other ESN ART help topics, search for a specific topic or print the help information.

To view a list of Help topics for ESN ART, click Contents from the Help drop-down menu. Choose from one of the items in this list to load the Help file and display its information.

ESN ART allows you to manage the ESN data quickly and easily in the following ways:

- ESN data retrieval—You can retrieve ESN data blocks from the Meridian 1 or Succession CSE 1000 overlays, and ESN ART converts and stores the data in a PC database. You can then view and print the data.
- ESN data installation—You can clone the PC-based ESN data from an existing switch to install a new ESN configuration on a similar switch.
- ESN data modification—You can add, change, or delete the retrieved or cloned ESN data using the ESN Object Managers (windows that simplify ESN data definition). You can then transfer the modified ESN data from OTM on the PC to the Meridian 1 or Succession CSE 1000 system.
- ESN data reporting—You can create reports ranging from basic data to data analysis reports. You can send these reports to the screen, to a printer, or to a file.
- Export ESN data—You can export Report data to a file. Various file formats are supported, for example, Excel or comma separated values (CSV) format.
- ESN global change data—You can make global changes to these six ESN reference objects: DMI, FCI, FSNI, ITEI, RLI, and ROUT.

> **Note:** ESN data refers to ESN data blocks in LD86 (except Network Attendant Service), LD87 and LD90.

From the System window, double-click the ESN icon to launch the ESN ART application. The ESN ART window uses the standard OTM tree control and displays a folder for each Meridian 1 or Succession CSE 1000 customer (as defined in the OTM System Window properties or retrieved from the Meridian 1 or Succession CSE 1000 system). See Figure 345.

**Figure 345**   ESN ART window
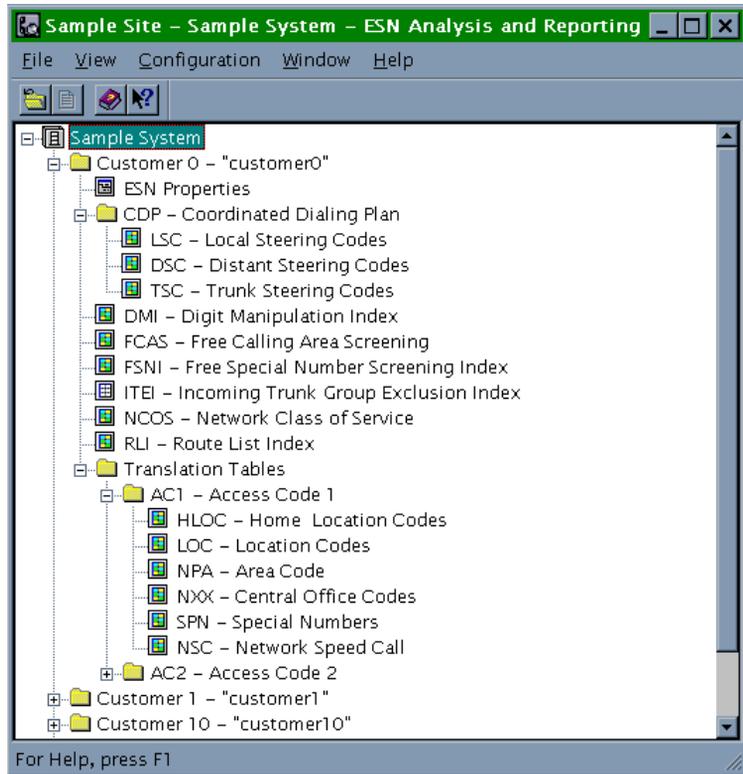


Each customer folder expands to show a list of ESN object manager icons. Each icon represents a specific type of ESN data or object, such as Digit Manipulation Indexes (DMI). To display or hide the ESN application list, double-click the customer folder icon or single-click the plus sign [ + ] or minus sign [ - ].

# Using ESN ART

In order to edit the ESN data for a customer, double-click on that customer's folder. If ESN data has been defined for that customer, a list of ESN object manager icons appears in the tree under the customer. An object manager is a window that contains a list of instances of the particular ESN object (for example, a list of DMI numbers and their attributes). Double-click on a particular ESN object manager icon to view and manage the associated ESN data.

If a customer does not have any ESN data defined on the OTM PC, then the customer folder expands to show the ESN Setup Wizard. This wizard helps you to create the ESN data for the customer. See "ESN Setup Wizard" on page 707.

## Working with ESN Object Managers

The ESN data is made up of many types of objects, such as Route List Indexes (RLI), Digit Manipulation Indexes (DMI), and Location Codes. In a typical ESN installation, most types of objects have many instances (for example, there are several instances of DMI number for the DMI object).

ESN ART uses object managers to assist you in viewing and managing all ESN objects. For example, double-click the DMI icon to open the DMI object manager. The DMI object manager provides a list of each DMI number defined for the customer and the values of the various DMI attributes. See Figure 346.

**Figure 346** ESN object manager window (DMI in this example

Each object manager is a separate window (using the standard OTM list control) containing the list of instances of the ESN object. The number and content of the columns varies for each object manager. Typically, there is one column for each property of the object. Most properties correspond to an overlay prompt.

In our example, the DMI list manager shows you the list of all DMI numbers and their attributes. To edit the attributes of a particular DMI number, double click on that line in the list. The *Property Sheet* (Figure 347) for that DMI number appears. This is the dialog box that you use to change the values of the DMI feature prompts.

## Using Object Manager features

You can perform the following actions in an object manager:

- Double click on an object to view and modify the object's properties.
- Add, change, delete, and undelete the selected objects using the EDIT pull down or pop up menus.
- Change the status of selected objects to NEW, TRN, OUT, or CHG using the EDIT pull down or pop up menus. Use this function only if the status between the Meridian 1 or Succession CSE 1000 system and the PC is "out-of-sync."
- Click on a column title to sort the column. Click again to reverse the order of the sort; an arrow icon in the column title indicates ascending (up arrow) or descending (down arrow) sort.
- Resize the window and columns.
- Use a horizontal scroll bar to see all the columns (if required).
- Select all or some rows and perform the following operations:
  — Copy the text of each selected row to the clipboard.
  — Delete the selected objects.
- Print all objects using the basic report for the object manager.

Each object manager in ESN ART works as described here. Some object manager windows have more than one list displayed in the window, and some property sheets have more that one tab, but the principal is always the same.

# Working with Property Sheets

Each instance of an ESN object in the object manager's list has an associated property sheet. The property sheet is a dialog box that allows you to modify the ESN data for the object. See Figure 347.

**Figure 347**   ESN Property sheet (DMI in this example)



The property sheet contains all attributes of an object. Each attribute typically corresponds to a prompt in an ESN overlay. (If the associated X11 Package is not equipped, its controls are disabled in the property sheet.)

> **Note:** The Name and Comments fields are exceptions to this convention. Any information that you enter into these fields is optional, for your reference only, and is saved only in the PC database. This data cannot be transmitted to the Meridian 1 or Succession CSE 1000 system.

Some ESN property sheets have more than one tab. Click on a tab to edit the ESN data in that tab.

# Property Sheet Controls

The attributes of an object are represented as Windows controls, such as edit boxes and drop-down list boxes. For example, Yes/No type prompts are represented as check boxes. The names of prompts appear next to the controls. Property sheets share the following controls:

- The appearance of the property sheet for adding a new object is different from the appearance when changing an object. The title bar is different and the object ID (for example, DMI number) is disabled when you are changing an object.

> → **Note:** You must delete an object and re-add it to change the object ID.

- Edit boxes are used for Object IDs and names; multi-line edit boxes are used for the Comments field and some repeating data such as lists of allowed dialed digits. Mandatory edit boxes have bold label text. Optional edit boxes typically have a default value. Edit boxes have a tool tip pop-up which describes the allowed values (example: "Enter a value between 1 and 32")
- Check boxes represent Yes/No type prompts, where checked means Yes.
- Drop down list boxes present a list of choices. These correspond to prompts with multiple responses. You can type the first letter to make a selection. The text in drop down list boxes include the actual prompt response followed by a short description. For example:
  — NPA - Area Code
  — NXX - Central Office Code
- Each control has an associated help description. Click on a control and press **<F1>** for help on the selected control. This displays the description on the associated prompt in the I/O guide help.
- Most ESN objects also have a Last Modified date field and a Synchronization Status field. These fields are displayed as read-only text in the property sheet. The Status field can have the following values in OTM:
  — NEW — added on the PC but not on the Meridian 1 or Succession CSE 1000 system. Deleting a new object removes it from the list because this change does not need to be synchronized to the Meridian 1 or Succession CSE 1000 system. Changing a NEW object only changes the

Modified timestamp (that is, it is still NEW until synchronized with the Meridian 1 or Succession CSE 1000 system).

— TRN — The object has been synchronized with the Meridian 1 or Succession CSE 1000 system. The object has been successfully transmitted to or retrieved from the Meridian 1 or Succession CSE 1000 system.

— CHG — The object has been changed on the PC but not on the Meridian 1 or Succession CSE 1000 system.

— OUT — The object has been deleted on the PC but not on the Meridian 1 or Succession CSE 1000 system. The object remains on the PC until successfully removed from the Meridian 1 or Succession CSE 1000 system.

> **Note:** The initial state of all objects after being cloned from another customer is New.

## Example

In our DMI example, you might wish to change the Call type (CTYP prompt). The following example explains editing the CTYP prompt for a particular DMI:

**1** In the DMI list, double-click the DMI instance that you wish to change (this opens the property sheet for that DMI).

**2** Move to the CTYP list box, and select a new value from the list of appropriate values.

**3** Click OK—the data is stored in the OTM database ready for transmission to the Meridian 1 or Succession CSE 1000 system. (You can click Cancel to close the property sheet without changing the ESN data.)

**4** Later, when you synchronize the data between OTM and the Meridian 1 or Succession CSE 1000 system, this change is made in the Meridian 1 or

Succession CSE 1000 system's ESN data. See "Synchronizing the OTM ESN database and the Meridian 1 or Succession CSE 1000 system" on page 697.

> → **Note:** This document does not cover the details of each object type because each object manager and property sheet is designed to be fully documented in the on-line help. You can also request What's This? help for any field or button while using ESN ART.

## Shortcuts

To open a property sheet for an object, you can double-click on the object in the list in the object manager window. Alternately, right-click the object to open the pop-up menu, and select Properties to open the property sheet for that object.

The right mouse button opens a popup menu that allows you to add, delete, and undelete an object, open the object's property sheet, and get help on the object.

## Defining ESN Properties

Some ESN data is defined once per customer. The ESN Properties property sheet allows you to configure this data in a property sheet (no object manager is needed, since there is only one instance of these values for the customer.) To open the ESN Properties property sheet, select ESN Properties from the tree.

The following tabs make up the ESN Properties property sheet:

- General Tab—The General tab contains data from ESN Features sections in Overlay 86.
- Limits Tab—The Limits tab contains data from ESN options in Overlay 86.
- TOD Schedules Tab—The TOD Schedules tab contains Time of Day Schedules and Extended TOD schedules from Overlay 86.
- Network Control Tab—The Network Control tab contains data from ESN Network Control section in Overlay 87.
- NCOS Map Tab—The NCOS Map tab contains data from Network Class of Service mapping from Overlay 87.

# ESN Global Change

Global change allows you to change all references to an ESN object. For example, use global change to find all places DMI 3 is used and optionally change it to DMI 11.

Example: Changing references to a DMI

**1**  Select Global Change in the Configuration menu.

**2**  Select DMI in the first list box.

**3**  Enter the DMI number to be changed and its new number.

**4**  Click Find. This generates a list of ESN objects using the DMI number. DMIs occur in RLEs, HLOCs, LSCs, NPAs, NXXs, and SPNs.

**5**  Click Replace. This performs the change in memory and adds the change to the Changes Pending list box. The DMI itself is not changed.

**6**  Repeat the Find and Replace as desired.

**7**  Click Save to save the changes. The Save cannot be undone. Click Cancel to close the window without saving the changes.

**Figure 348**  ESN Global Change window
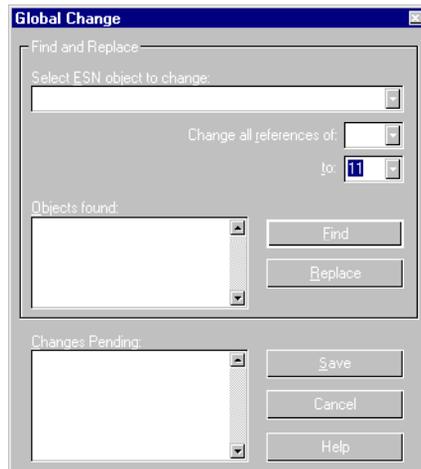
# Synchronizing the OTM ESN database and the Meridian 1 or Succession CSE 1000 system

When you have finished defining the ESN data for a customer, you are ready to transmit the data to the Meridian 1 or Succession CSE 1000 system. Alternately, you may be ready to retrieve data from a Meridian 1 or Succession CSE 1000 system to bring your OTM PC up-to-date. This is called *synchronizing* the data— guaranteeing that the ESN data in OTM and on the Meridian 1 or Succession CSE 1000 system are "in sync."

Use the Synchronize menu to select Transmit To Meridian 1 or Retrieve From Meridian 1. You have the option of scheduled or immediate transmission or retrieval. You also have the option to view the last transmit or retrieve.

> **Note:** In order to synchronize data, the TTY port on the Meridian 1 must be configured with a user type of SCH.

## Preparing the ESN ART Environment for Synchronization

Follow these guidelines to assure seamless synchronization:

- The customer data, system software release, and software package information stored in the OTM System Property Sheet must be correct. You can define this data manually in the System Property sheet under the System Data tab or by using the Update System Data item in the System window.

> **Note:** Update System Data retrieves the list of customers from the Meridian 1 or Succession CSE 1000 system. This does not include the UserID and password for the customer. Before retrieving or transmitting data, ensure that the correct UserID and password are defined in the OTM System Properties.

- When copying an ESN database, if the X11 release and packages are different between OTM and the Meridian 1 or Succession CSE 1000 system, the ESN data may be impacted as follows:
  — Data is lost if the package is not enabled on the destination
  — Default data is used if the package is not enabled on the source

- ESN ART does not retrieve LD 16 route data. Transmission errors will occur if you enter invalid route numbers.
- Nortel Networks recommends that you validate ESN data before you transmit it to the Meridian 1 or Succession CSE 1000 system.

# Validating ESN Data

Whenever you transmit ESN data to the Meridian 1 or Succession CSE 1000 system, the ESN ART software will automatically examine the data to ensure it is valid. However, it is a good practice to validate the data before transmitting. From the Configuration menu, select Validate ESN Data. The results of the validation process appear in a log file and are displayed in Windows Word Pad.

## Retrieval and Transmission

After you have completed the ESN ART environment for synchronization, you can retrieve ESN data from the Meridian 1 or Succession CSE 1000 system, or transmit ESN data to the Meridian 1 or Succession CSE 1000 system.

### *Synchronization — Retrieval*

Follow these steps to retrieve data from the Meridian 1 or Succession CSE 1000 system:

**1** Launch the ESN application from the site and system you want.

**2** From the ESN main window, select the customer from which you want to retrieve the data.

**3** Select File > Synchronize > Retrieve > Now (or Schedule) from the File menu.

> **Note:** If you select Now, your request is sent to the scheduler queue which executes the task within the next minute. If there are tasks in the queue that have a higher priority and are scheduled to be executed at the same time, they will be executed first.

The Synchronization application is launched and begins the retrieval process.
When the retrieval is done, the Synchronization application disconnects from the
Meridian 1 or Succession CSE 1000 system and parses the downloaded ESN data.
Select Update DB to store the parsed ESN data into the PC database.

> **Note:** Selecting Update DB will delete all existing ESN data for the
> selected customer before saving the new parsed data.

All of the new data objects have the status TRN after the database has been
updated indicating the data on the PC database and the Meridian 1 or Succession
CSE 1000 system is synchronized. The data can now be modified using the list
managers and property sheets, then transmitted back to the Meridian 1 or
Succession CSE 1000 system.

### *Synchronization - Transmit*

Follow these steps to transmit data on the PC database to the Meridian 1 or
Succession CSE 1000 system:

**1**   Launch the ESN application from the site and system you want.

**2**   From the ESN main window, select the customer from which you want to
retrieve the data.

**3**   Select Synchronize > Transmit > Now (or Schedule) from the File menu.

> **Note:** If you select Now, your request is sent to the scheduler queue
> which executes the task within the next minute. If there are tasks in the
> queue that have a higher priority and are scheduled to be executed at the
> same time, they will be executed first.

The Synchronization application is launched and begins the transmit process. It
begins by loading ESN data for the selected customer and validates all the ESN
data objects (on PC side). The Synchronization application only transmit ESN
data objects which have the status OUT, NEW, or CHG. However, not all data
objects are transmitted and updated in the same manner. Depending on the status
and the data objects, they are transmitted to the Meridian 1 or Succession
CSE 1000 system differently. Other data objects which have the TRN status are
not transmitted to the Meridian 1 or Succession CSE 1000 system. They remain
unchanged on the PC database.

*ESN Data Block*

ESN data block is transmitted in different order when it has the status OUT or NEW. If the ESN data block has the OUT status, it is deleted from the Meridian 1 or Succession CSE 1000 system last because the system does not allow deletion of the ESN data block when there are data remaining in the ESN overlays (LD 86, LD 87, LD 90). This also means that the Synchronization application must successfully delete (from the Meridian 1 or Succession CSE 1000 system) all ESN data for the selected customer to be able to successfully delete the ESN data block. However, if an error occurs while attempting to delete all the ESN data, the Synchronization application will not attempt to delete the ESN data block from the Meridian 1 or Succession CSE 1000 system.

If the ESN data block has the NEW status, it will be transmitted twice. The first time, the NEW response (to an REQ prompt) is used to add the new ESN data block. However, the Meridian 1 or Succession CSE 1000 system does not ask for the NMAP and the ETOD prompts when a NEW response is used, but does so for a CHG response. So the ESN data block is transmitted a second time using the CHG response in order to transmit all of the NMAP and ETOD.

*CHG Status*

Depending on the prompt groups, the transmit behaves differently for the status CHG. For the simple prompt groups, when their data objects have the status CHG, they are transmitted to the Meridian 1 or Succession CSE 1000 system using the CHG response which is straight forward. For the special (more complex) prompt groups, they are first deleted from the Meridian 1 or Succession CSE 1000 system using the OUT response and then added (includes the new changes) back to the system using the NEW response. These special prompt groups include: FCI, FSNI, LOC, NPA, NXX, and SPN.

When these data objects are transmitted to the Meridian 1 or Succession CSE 1000 system, they are first deleted from the system, and if the deletion was successful, their status is immediately changed from OUT to NEW. Then they are added back to the Meridian 1 or Succession CSE 1000 system. If that is also successful, their status is immediately changed from NEW to TRN. This way, if the PC looses connection to the Meridian 1 or Succession CSE 1000 system or there is a system failure between the delete and the add, the next transmit will add these prompt groups (with the NEW status) back to the Meridian 1 or Succession CSE 1000 system.

*Status Updates and Transmission Errors*

During transmission of the ESN data objects to the Meridian 1 or Succession CSE 1000 system, the Synchronization application will update the status of each prompt group accordingly. The table below lists synchronization status updates for before and after a successful transmission:

**Table 44**   Synchronization status updates

| Synchronization status before transmission | ESN Data | Synchronization status update on OTM PC after transmission |
|---|---|---|
| OUT | all | Remove from database |
| NEW | all | TRN |
| CHG | all (except special prompt groups) | TRN |
| *1. CHG (OUT) | special prompt groups only | NEW |
| *2. CHG (NEW) | special prompt groups only | TRN |
| * The items indicated by this symbol actually have one status CHG, but they are transmitted in two steps: deleted from Meridian 1 using the OUT response, and added back to the Meridian 1 using the NEW response.  For each step completed successfully, the synch status is changed and updated to the PC database | | |

If the Synchronization application detects errors during transmission of ESN data, it will not update the status for that data. The status will remain unchanged as prior to transmission, and the errors are logged in a file.

## Console Window

Once synchronization starts, the ESN synchronization console window displays the interactions between the OTM PC and the Meridian 1 or Succession CSE 1000 overlays (LD 86, LD 87, and LD 90).

**Figure 349** Synchronization console window
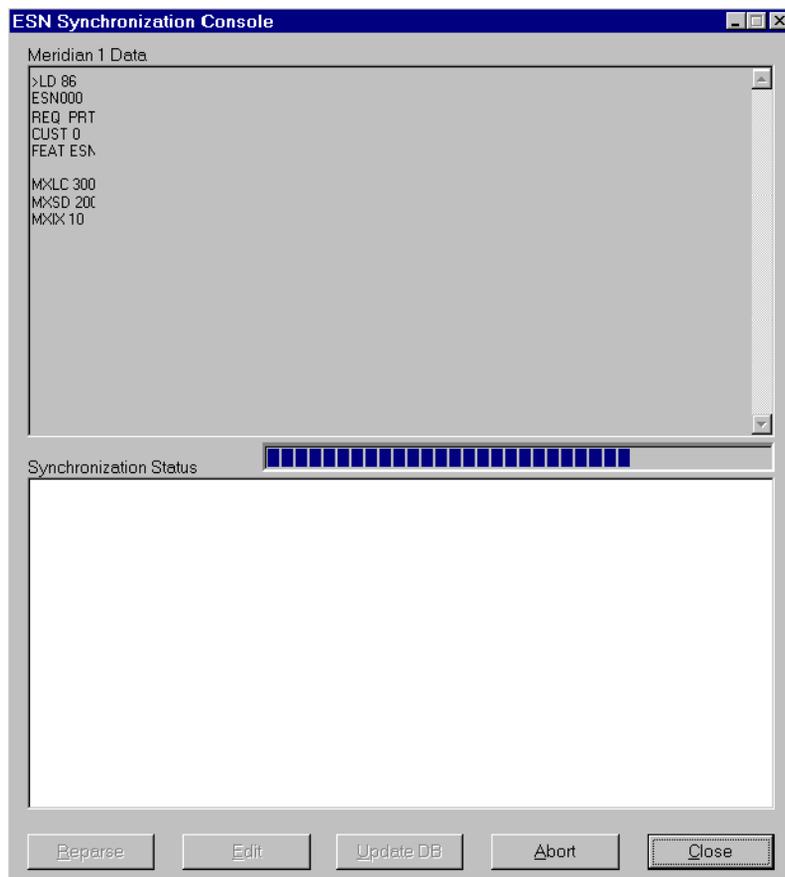


The top part of the console window—the Meridian 1 Data section—allows you to view the interactions between the PC and the Meridian 1 or Succession CSE 1000 system. For example, when retrieving ESN data from the Meridian 1 or Succession CSE 1000 system, the printout from the ESN overlays appears in this window.

## Synchronization Log Files

The bottom part of the console window, the Synchronization Status section, list the errors found during transmission, retrieval, or parse operations. When retrieving the data from the switch, the interactions include many print sequences. This process has the potential to pick up transmission errors or TIMxxx (time messages) generated by the Meridian 1 or Succession CSE 1000 system. All transmission or retrieval information is saved on the OTM PC in the following synchronization files (XX represents the customer number):

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNRetrieveXX.dld

Nortel\Common Data\[sitename]\[systemname]\
ESN\ESNTransmitXX.log

> **Note:** To edit synchronization log files containing a .dld extension, you must have Microsoft Word 97 installed on the OTM PC.

If you encounter retrieval or transmission problems, you can view the retrieve or transmit log file to find the basis for the errors.

## Login Log File

The login information in the Console window can help you determine the reasons for login failures. This information is saved in the following login file:

Nortel\Common Data\[sitename]\[systemname]\ESN\SyncLogin.log

## Exiting ESN ART or OTM While Synchronizing

If you exit the ESN ART application while synchronizing data, the synchronization console stays open to allow synchronization to finish.

If you exit OTM while synchronizing data, a confirmation window lets you know that synchronization is still in progress. You are given the option to abort the synchronization or to allow synchronization to finish. To protect data integrity Nortel Networks strongly recommends that you allow synchronization to finish normally.

# Updating the V&H Table

The V&H table contains all North American NPAs and the associated state or province. This information is used by the analysis report which checks for NPAs not covered in the NPA object manager.

Select Update V&H table from the File menu to open the following dialog box which allows you to:

- Import new NPAs from the Call Accounting rate table disk
- Manually update the NPAs via Microsoft Access

**Figure 350**   Update V&H table dialog box
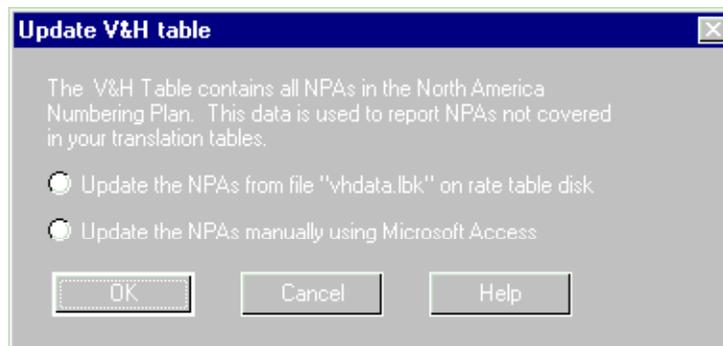


## Importing NPAs

When you select the "Update the NPAs from file 'vhdata.lbk' on rate table disk" option from the Update V&H table dialog box, the standard File Open dialog box displays. Select the vhdata.lbk file (usually on a floppy disk). ESN ART then reads the NPAs and updates the appropriate datafile. This operation takes a minute or so. You can click Cancel to close the dialog box without updating the datafile. A backup of the datafile is made in case of a PC crash during the operation. If this occurs you can try the update again, or rename the old database file (called vhDB.mdb) in the ESN Program folder.

## Manually Updating NPAs

When you select the "Update the NPAs manually using Microsoft Access" option from the Update V&H table dialog box, ESN ART simply opens the database file using Microsoft Access. You can then add, change, or delete NPAs as desired and save the file. This operation fails if the PC does not have Access.

# Printing ESN Reports

ESN ART includes many pre-defined reports to help you in your work. In the File menu, select Reports. The Reports window allows you to select one or more reports, configure print settings, and schedule the report(s) for a particular time. You can print more than one Basic report at a time.

**Figure 351**   Reports window
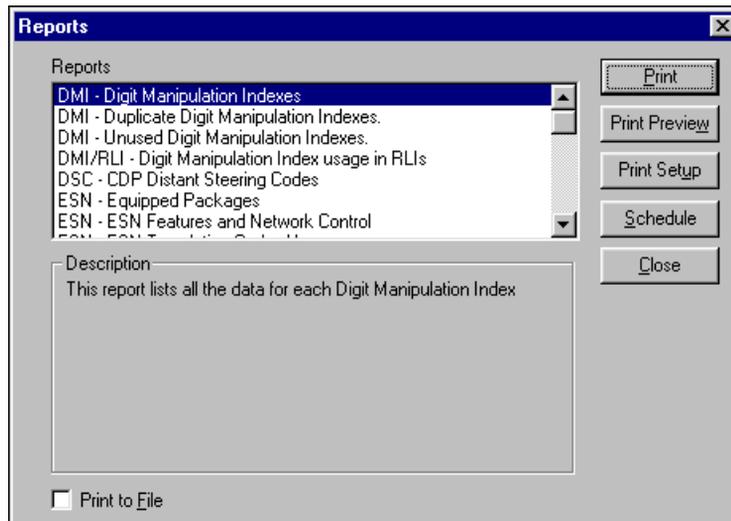


The following pre-defined reports are available:

- Basic Reports
    - DMI - Digit Manipulation Indexes
    - DSC - CDP Distant Steering Codes
    - ESN - ESN Properties

- — ESN - Equipped Packages
- — FCAS - Free Calling Area Screening Indexes
- — FSNI - Free Special Number Screening Indexes
- — HNPA/HLOC- Translation Tables Summary
- — ITEI - Incoming Trunk Exclusion Indexes
- — LOC - Location Codes
- — LSC - CDP Local Steering Codes
- — NCOS - Network Class of Service
- — NPA - Numbering plan Area Codes
- — NSCL - Network Speed Call
- — NXX - Central Office Translations
- — RLI - Route List Indexes
- — SPN - Special Number Translations
- — TSC - Trunk Steering Codes
- Analysis Reports
  - — DMI - Duplicate Digit Manipulation Indexes
  - — DMI - Unused Digit Manipulation Indexes
  - — DMI/RLI - Digit Manipulation Index usage in RLIs
  - — ESN - Translation Codes Usage
  - — NPA - Area Codes not covered in translation tables
  - — NPA - Area Codes with no associated SDRR codes
  - — NPA - Invalid Area Codes in FCAS and Translation Tables
  - — RLI - Route List Index usage in NPAs, NXXs, SPNs
  - — RLI - Route List Index TOD Schedules
- Grouping Reports
  - — OVL86 - ESN Basic reports on Overlay 86
  - — OVL87 - ESN Basic reports on Overlay 87
  - — OVL90 - ESN Basic reports on Overlay 90
  - — Special - All ESN specialized analysis reports

# ESN Setup Wizard

The ESN Setup Wizard helps you to set up the ESN database for a Meridian 1 or Succession CSE 1000 customer. In the Wizard's first page, you select one of the following methods for creating a database:

- Copy from an existing ESN ART PC database
- Retrieve data from the Meridian 1 or Succession CSE 1000 system
- Create an empty database

**Figure 352**   ESN Setup Wizard

Click Next to move to the second page. The second page depends on your choice in the first page, as follows:

- Copy from an existing ESN ART PC database: This option displays a tree with all sites, system, and customers with a PC-based ESN database. Select the customer with the data you want to copy and click Finish. This creates the ESN database for the customer. All ESN objects are given a status of New. You can then modify the data, such as changing the Home Area Code, and then transmit the data to the Meridian 1 or Succession CSE 1000 system using the Transmit Now or Scheduled option in the File Menu.

> **Note:** When copying an ESN database, if the X11 release and packages are different between OTM and the Meridian 1 or Succession CSE 1000 system, the ESN data may be impacted as follows:
> — Data is lost if the package is not enabled on the destination
> — Default data is used if the package is not enabled on the source

- Retrieve data from the Meridian 1: This option retrieves the ESN data from the Meridian 1 or Succession CSE 1000 system. This is the same as using the Retrieve Now or Schedule option in the File menu.
- Create empty database: This option creates an empty database. Before the database is created, you must fill in the mandatory fields (such as the Home Area Code) in the ESN Properties.

The ESN Setup Wizard is designed to be documented fully in the on-line help. If you have any questions while using the Wizard, click the Help button. You can also request What's This? help for any field or button.

## ESN ART software dependencies

Table 45 shows all object managers in the ESN window tree. Some items appear only if the associated software package is equipped on the Meridian 1 or Succession CSE 1000 system. The system must have the multi-customer package for the customer folders to appear.

**Table 45**    X11 Packages Required for the ESN ART Object Managers

| ESN Object Manager | Software Package |
|---|---|
| Customer x - Customer Name | cust |
| ESN Features and Network Control | bars/nars |
| CDP - Coordinated Dialing Plan | cdp |
| • LSC - Local Steering Codes | cdp |
| • DSC - Distant Steering Codes | cdp |
| • TSC - Trunk Steering Codes | cdp |
| DMI - Digit Manipulation Index | bars/nars |
| FCAS - Free Calling Area Screening Index | bars/nars |
| FNSI - Free Special Number Screening Index | fnp |
| ITEI - Incoming Trunk Group Exclusion Index | bars/nars |
| NCOS - Network Class of Service | ncos |
| RLI - Route List Index | bars/nars |
| Translation Tables | bars/nars |
| • HNPA/HLOC - Home NPA and Location Codes | bars/nars |
| • LOC - Location Codes | bars/nars |
| • NPA - Area Codes | bars/nars |
| • NXX - Central Office Codes | bars/nars |
| • SPN - Special Numbers | bars/nars |
| • NSCL - Network Speed Call | nars |

# Appendix A
# Using Optivity Telephony Manager Web Desktop Services

OTM Web Desktop Services allows you to view and modify the configuration of your telephone via a Web browser.

The Web display includes a graphical view of the telephone, and shows the configured features. Help text is available for the features configured on your telephone.

## User Login page

Login security ensures protection against unauthorized entry and enforces access privileges for logged on users.

To log in to Desktop Services:

1 Start your Web browser.

2 Enter the URL provided by your network administrator.

The OTM User Login page opens (Figure A-1).

**Figure A-1**   User Login page



**3**   Enter the User Login name and Password provided to you by your network administrator

Your personal Web Desktop Services main page, titled "My Profile" opens. Figure A-2 shows an example of the main page for Joe Smith.

**Figure A-2**   My Profile page

# Web Desktop Services main page layout

Your Web Desktop Services main page includes the following common elements:

- **Information Banner** (top): Contains the Nortel Networks logo, plus Help, Logout, and Home buttons. The Help button takes you to general help on how to use the web pages. The Home button takes you to your "My Profile" page. The logout button takes you to the login page.

- **Navigation Bar** (left side): Lists hypertext links to various Desktop Service pages. When you single click on an item in the Navigation bar, the related page appears in the Content Frame of your Web browser.

> → **Note:** In the rare situations where you have telephones on different Meridian 1 and Succession CSE 1000 systems managed by the OTM Server, the Navigation Tree expands to include the systems as the main nodes. You then select the My Profile or Telephone(s) in the desired system.

- **Content Frame**: Contains the page based on your selection in the Navigation bar. There are three types of pages:

  My Profile page- contains general information about you (name, department, address, and so forth). The information displayed is determined by your network administrator.

  Telephone pages - contains telephone configuration data. You may have more that one telephone. The information displayed is determined by your network administrator.

  Other Links - contains additional links that may be provided by your network administrator.

A line is placed at the bottom of each content page to visually indicate the end of the page. If vertical or horizontal scrolling is required, the entire page is scrolled.

# My Profile page

Once you log in, the main page, My Profile, opens. This page contains general information about you. The system retrieves this information from the OTM Directory. Click the Home button in the Banner or My Profile in the Navigation Bar to return to this page.

The information that appears is fixed and cannot be changed. If there is no information for a field, it is left blank.

The following information is presented on the My Profile page:

- Employee first, middle, and last name
- Identification (employee ID)
- Job Title
- Org Path (this is extracted from the Organization Path in the OTM directory).
- Manager
- E-mail address
- Login Name
- User Group
- Web Reporting Role
- Address fields
- Description

# Telephone pages

Once you have logged in, you are presented with a list of telephones in the Navigation Bar. The telephones are identified by prime DN. In order to get this list, the Web Server scans all the employee databases, one per Meridian 1 or Succession CSE 1000 system, on the Server.

If you have telephones on different systems, served by different OTM servers, then you will need to log in to the different servers to access these telephones. Your network administrator provides you with a URL, User Login name, and Password for each of these OTM servers.

To open the Telephone pages:

➜ Click on a Telephone DN in the Navigation Bar

The Telephone pages open in the Content Frame with the General page displayed .

**Figure A-3**   Telephone—General page
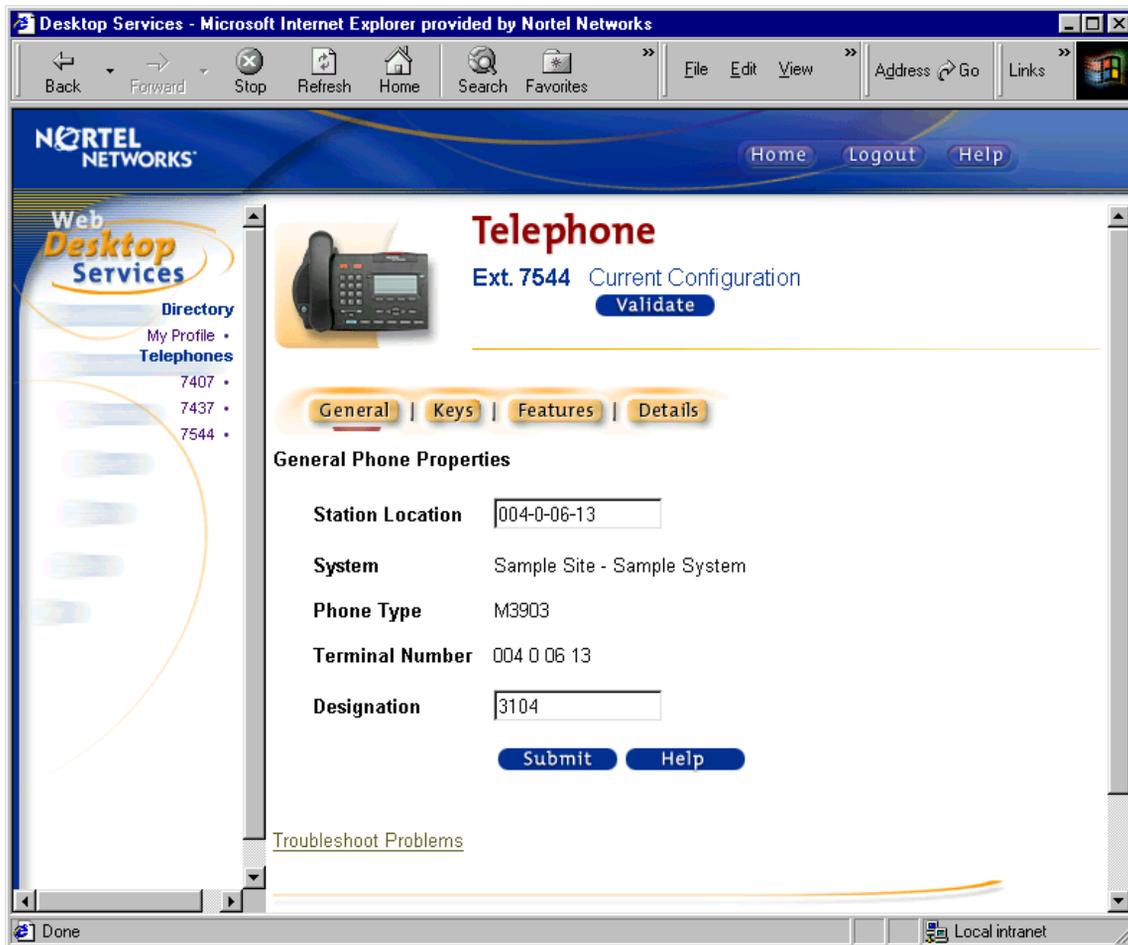


The Telephone pages have a small graphic in the top left corner. This graphic is detailed enough for you to recognize the type of telephone. The prime DN, or extension number, of the telephone also appears at the top of the page.

You have up to four Telephone pages, accessed by links below the small telephone graphic. The capabilities provided by these web pages depends on your telephone type.

## Telephone—General page

The General Page provides general information about the telephone. The following information is displayed on the General page:

- **Station Location** - a text field similar in purpose to the System field. You may want to use this to provide more user friendly names.
- **System** - identifies the site, system, and customer number, if applicable, where the phone is connected. This information is retrieved from OTM common services and displayed in the format "Site - System - Customer x".
- **Phone type** (M2317, M2616, etc.)
- **Terminal Number** (TN): Address of the telephone
- **Key Based Modules** (for applicable telephone types)
- **Designation** - a unique 1-8 character telephone identifier. This data is stored in station data and the overlays. This field is often used to identify the location of the phone within the building, for example, cable pair, and is the response to the prompt DES in LD 10/11.

If allowed by the network administrator you may change the following fields:

- Station Location
- Key Based Modules
- Designation

If you change one or more of these fields and click the Submit button, the Confirm Changes dialog box opens as shown in Figure A-4.

**Figure A-4**   Confirm changes to General Tab
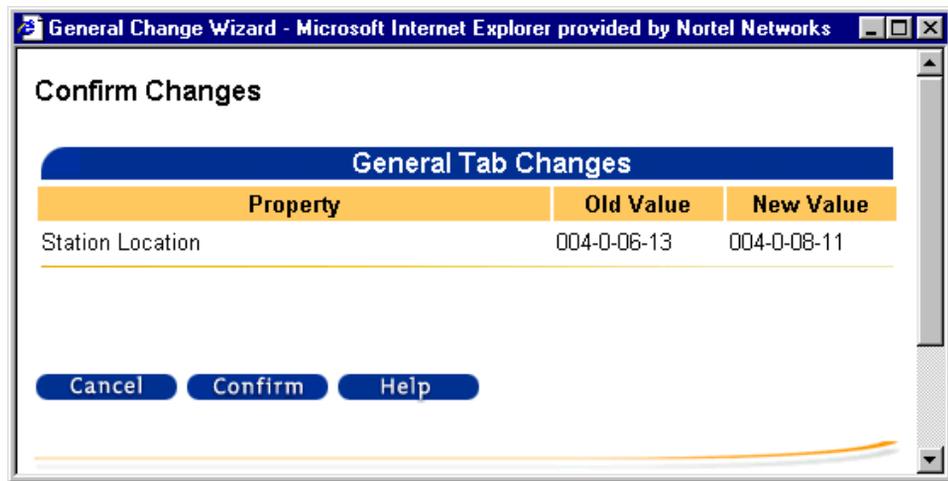


Verify the information and click the Confirm button. If there are no errors a change confirmation page opens. See "Change confirmation pages" on page A-37 for more information.

The Troubleshoot Problems link provides access to the trouble shooting page. See page A-14 for more information.

### Current Configuration/Pending Changes

When the information for your telephone has been changed, but the changes have not be synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown.

When there are pending changes, and you have been assigned the "Allow M1 Synchronization" option in your access profile, the drop down box is presented along with Schedule and Restore buttons. If your access profile allows you to make changes to the General, Keys, or Features pages, the Validate button is also presented as shown in Figure A-5.

**Figure A-5**   Configuration indication with synchronization allowed



### Validate button

The Validate button is not available when you are viewing the current configuration of your telephone. When your telephone has been marked for deletion in the OTM database, the Telephone pages will show the deleted configuration. The Validate button is not available when you are viewing the deleted configuration. Click the Validate button to validate the changes that have been made to the configuration. The validation process determines whether or not there are any errors that could cause problems during synchronization with the Meridian 1 or Succession CSE 1000 system. When you click the Validate button, if there are no errors, the page shown in Figure A-6 opens. If there are errors, the Station Validation Results will indicate the errors that are present in your telephone configuration (Figure A-7).

**Figure A-6** Station Validation Results with no errors
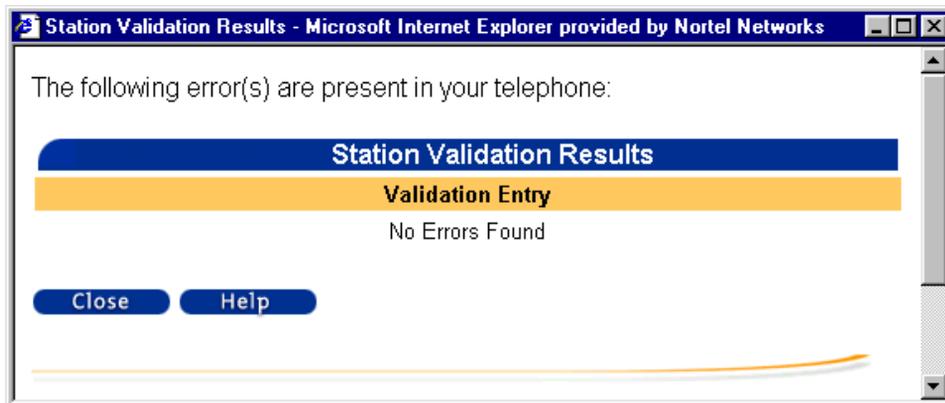


**Figure A-7** Station Validation Results with errors
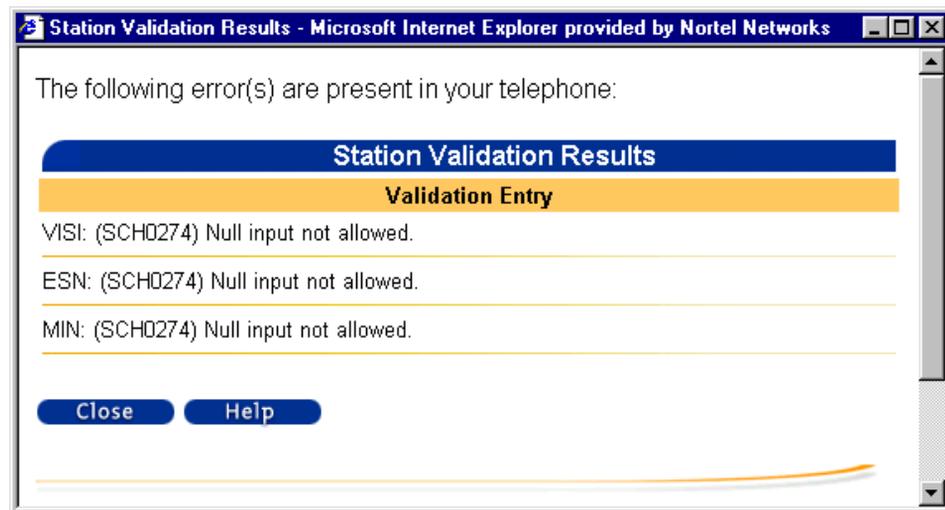


*Schedule button*

You click the Schedule button to schedule synchronization with the Meridian 1 or Succession CSE 1000 system. When you click the Schedule button, the dialog box shown in Figure A-8 opens.

**Figure A-8**   Schedule Changes dialog box
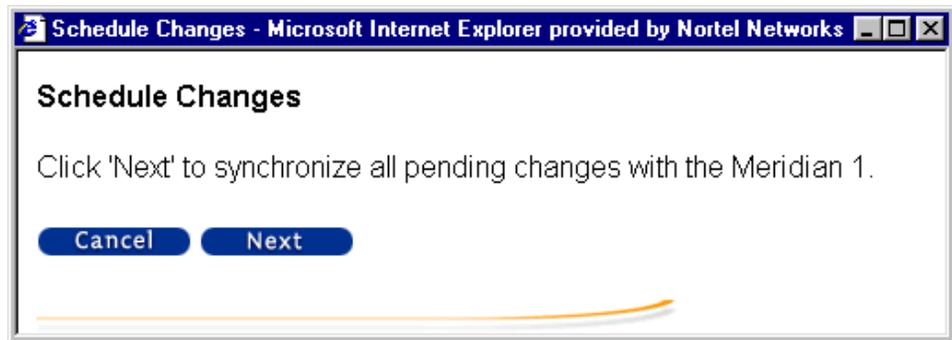


If you click the Cancel button the dialog box closes. If you click the Next button, the dialog box shown in Figure A-9 opens.

**Figure A-9**   Schedule Changes confirmation
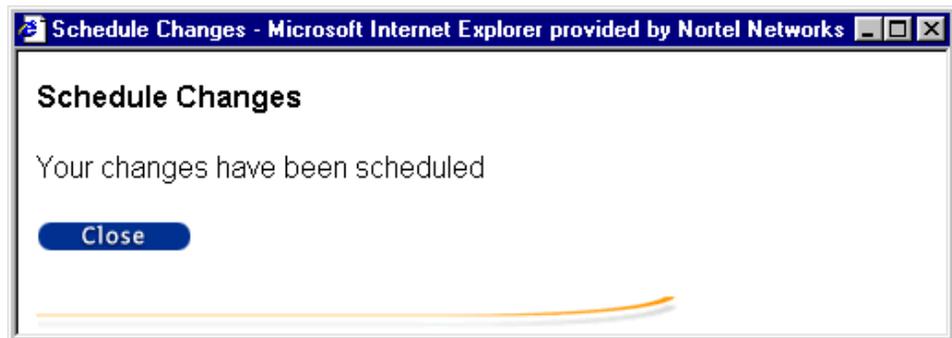


*Restore button*

When you click the Restore button, the dialog box shown in Figure A-10 opens.

**Figure A-10**   Restore Changes dialog box
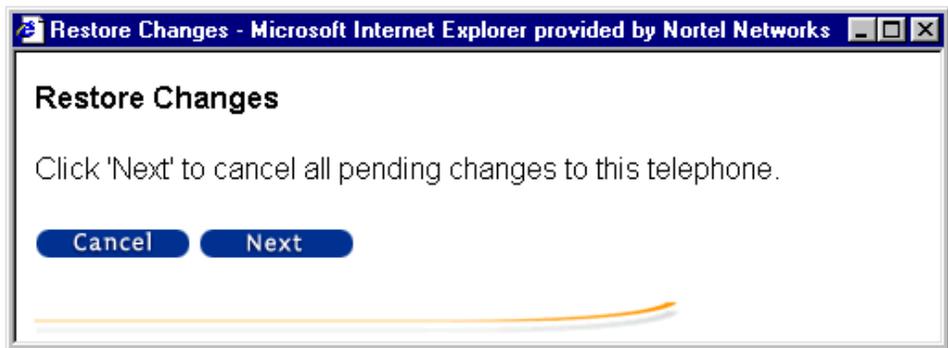


If you click the Cancel button the dialog box closes. If you click the Next button, the dialog box shown in Figure A-11 opens.

**Figure A-11**   Restore Changes confirmation



When there are pending changes, and you do not have the "Allow M1 Synchronization" option, the drop down box along with the Validate and Restore buttons are presented as shown in Figure A-12. You are not allowed to schedule synchronization. Your network administrator will review your changes and schedule synchronization for you.

**Figure A-12**   Configuration indication with M1 synchronization not allowed
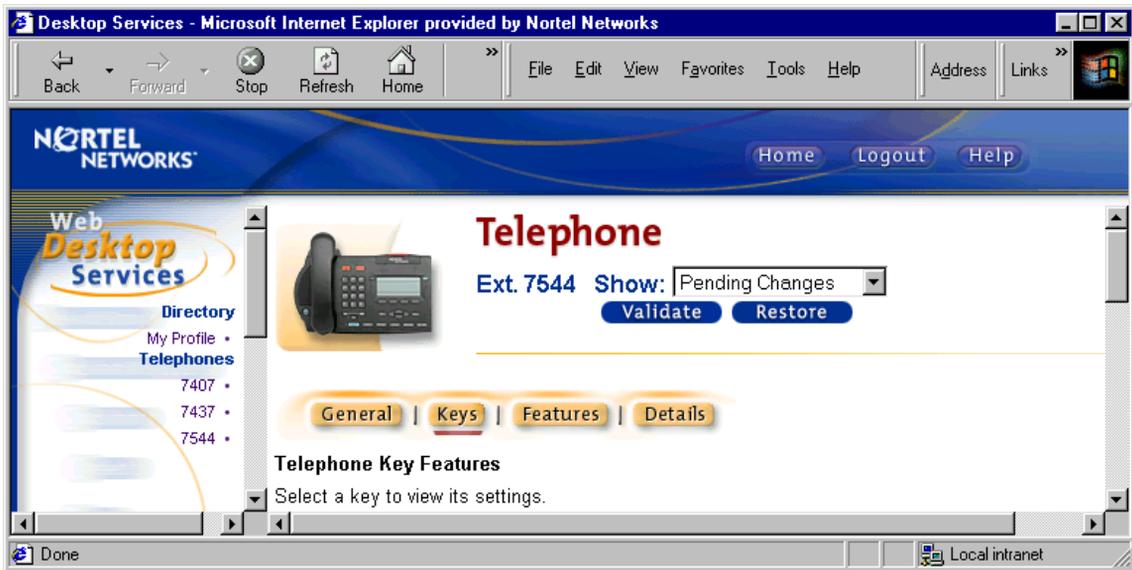


When the telephone and the Meridian 1 or Succession CSE 1000 system are synchronized, "Current Configuration" appears at the top of the page, and the drop down box is no longer displayed (Figure A-13).

**Figure A-13**   Configuration indication when there are no pending changes
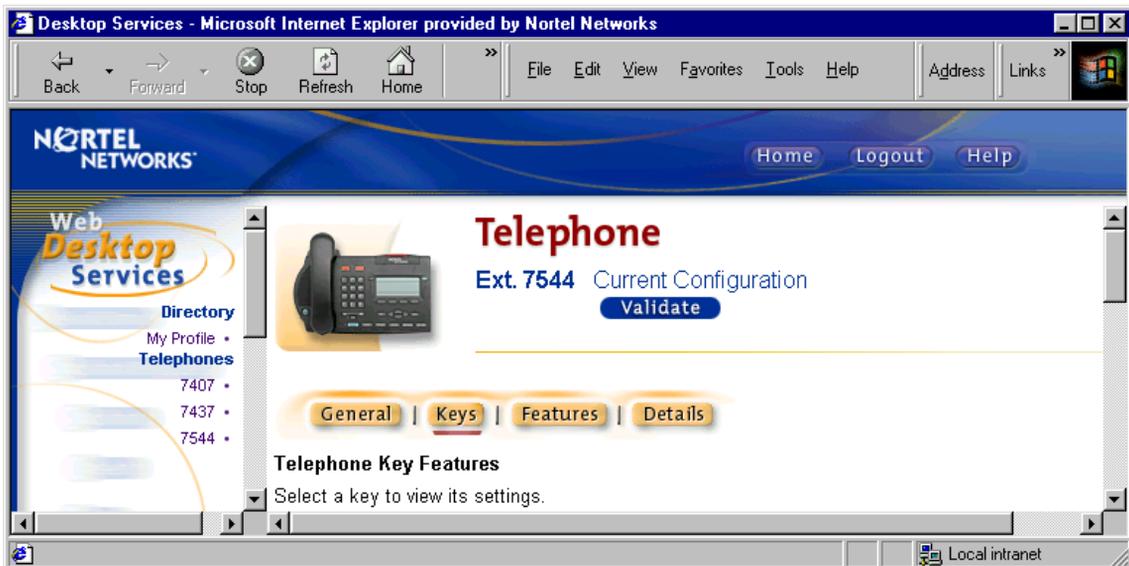
## Telephone Trouble Shooting page

You can access the Telephone Troubleshooting page from the General Page via a link. The Telephone Troubleshooting page is shown in Figure A-14. The Reset My Phone button performs an enable and status command on this telephone via a Maintenance Windows API.

**Figure A-14**   Telephone Troubleshooting page
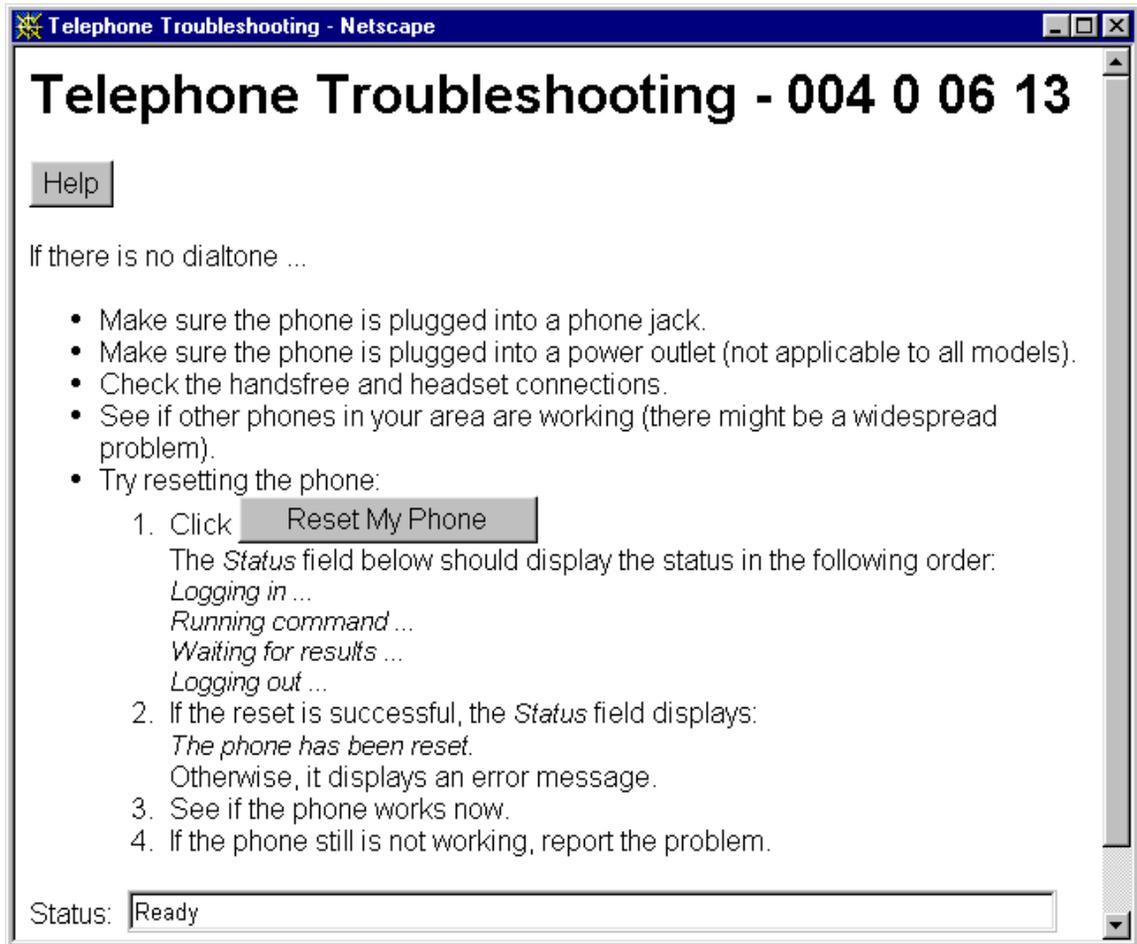
# Telephone—Keys page

The Telephone Keys page displays a graphical layout of the function keys assigned to the telephone. The layout varies for different telephone types.

All current feature key assignments will always be visible. The key labels on the graphic match the labels in Station Administration. For M3900 series telephones these labels match the soft labels on the set and the text is shortened to 7 characters. When the page first appears, key 0 is selected. You can select other keys by clicking on a key. Figure A-15 shows an example of the Telephone Keys page for an M3903 telephone.

When a key is selected the following occurs:

- The key is highlighted. The method used to highlight depends on the phone type.
- The name of the key and its configurable parameters, if any, are displayed beside the telephone graphic.

A Help button takes you to help on how to use the selected key.

**Figure A-15** Telephone Keys page



If the telephone has one or two Key Based Modules, a graphic indicates which set of keys is displayed. Next and Previous buttons allow you to "scroll" the graphic from one set of keys to another.

Figure A-16 shows the UI for the keys on an M2616 telephone equipped with a Key Based Module. Click the Next button to view the features assigned to the keys on the key-based expansion module (Figure A-17).

**Figure A-16** Telephone Keys page for an M2616 with a Key Based Module

**Figure A-17** Key Based Module keys
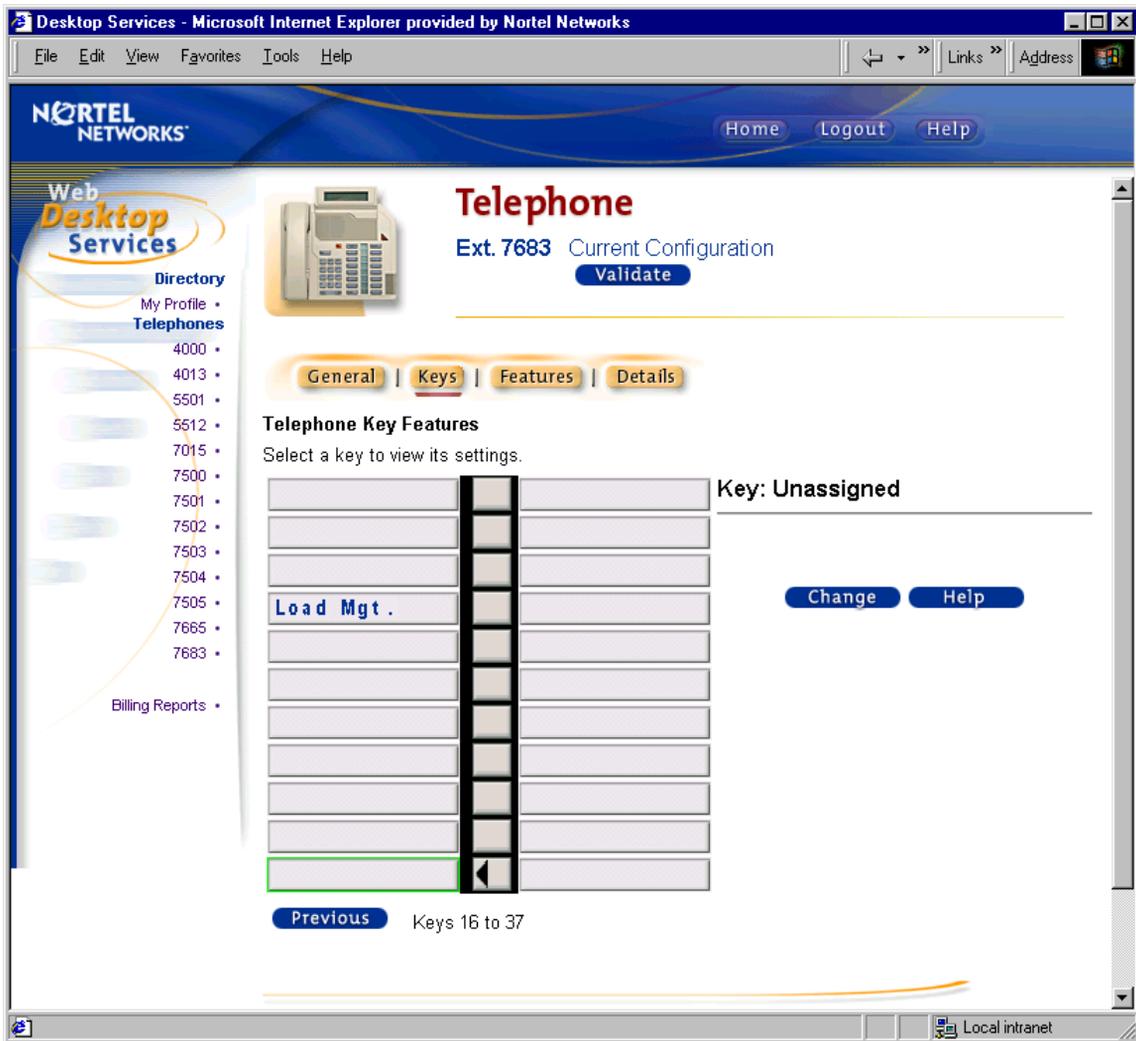


## Changing a key

If permitted by your access profile, when you click the Change button after selecting a key, a new browser window opens with the appropriate controls for changing the key you selected. In this browser window, a list of the possible key choices is displayed as shown in Figure A-18. This list is dynamic and is based on both the telephone type and the key selected. For example key 17 on an M2317 telephone must be a transfer key.

**Figure A-18**   Select Auto Dial key type
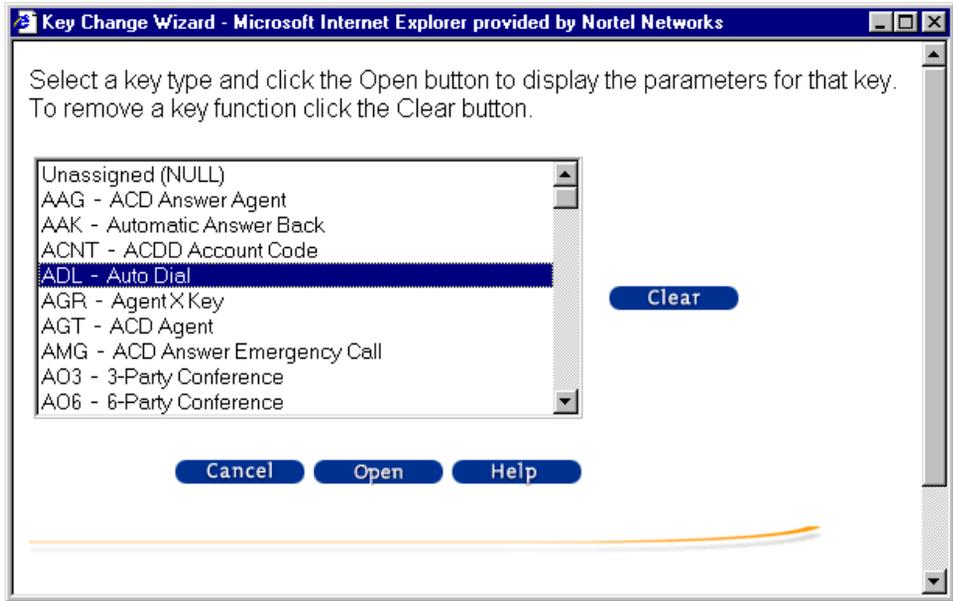


The Help button is context sensitive and accesses the information in the Input/ Output guide on configuring a key for the selected feature or service.

The key's parameters, if any, are displayed on subsequent pages of the wizard.

> →  **Note:** The Clear button removes the key function and takes you to the next page in the key change wizard. As shown in Figure A-18, if the telephone key that you have selected is currently unassigned (null), the Clear button does not appear.

*Changing the parameters of an Auto Dial key*

Use the following procedure to change the telephone number assigned to an Auto Dial key:

**1**   Click on a key in the graphic on the Telephone Keys page.

**2**   Click on the Change button. The Key Change Wizard launches.

**3**   Click "ADL — Auto Dial" in the list of key types. See Figure A-18.

**4**   Click the Open button.

**5**    Type the new maximum number of digits and the new Autodial DN in the edit
boxes. See Figure A-19.

---

> ➡️    **Note:** If you change the Number of Auto Dial digits to a value that is
> greater than the default number in the Meridian 1 or Succession
> CSE 1000 system, or if you enter an Auto Dial Number that has more
> digits than the default value, you will receive a validation error.

---

> ➡️    **Note:** The Find DN button is used to look up Directory Numbers. It
> appears whenever there is a DN edit box. For information on using the
> Find DN button, see "Finding Directory Numbers" on page A-29.

---

**Figure A-19**   Autodial key change wizard
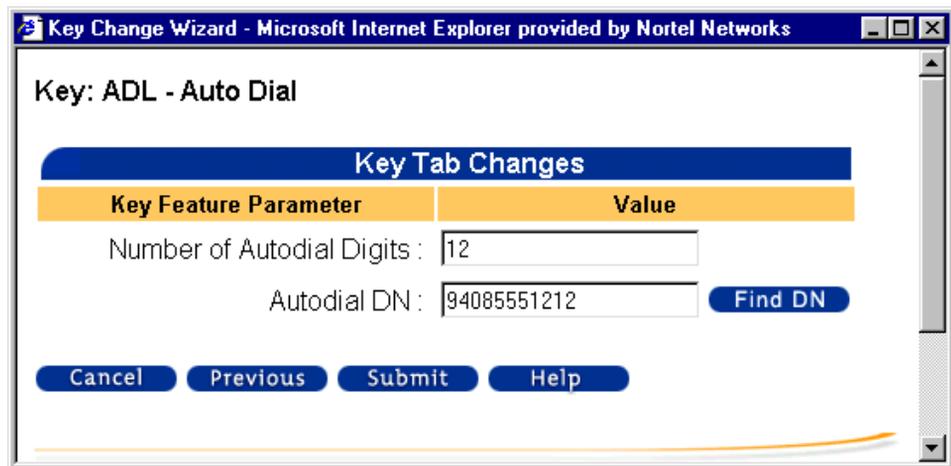


**6**    Click the Submit button.

The key change summary page opens as shown in Figure A-20.

**Figure A-20**   ADL key change summary
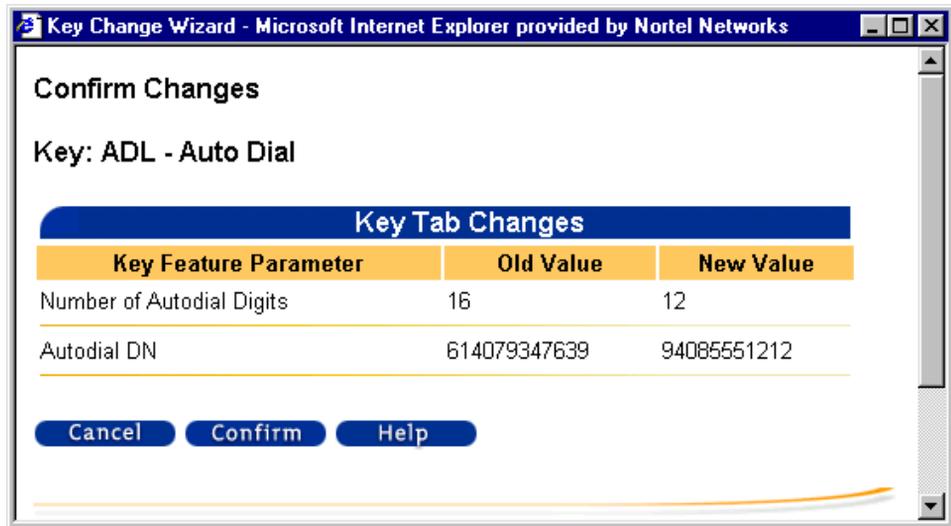


**7**   Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page A-37.

*Changing the parameters of an MCR DN key*

Use the following procedure to change the first name and last name parameters associated with an MCR DN key:

**1**   Click on an MCR DN key in the graphic on the Telephone Keys page. See Figure A-15.

**2**   Click the Change button.

The Key Change Wizard launches. The current key type, "MCR - Multiple Call Ringing", is highlighted. See Figure A-21.

**Figure A-21**   Select Multiple Call Ringing key type
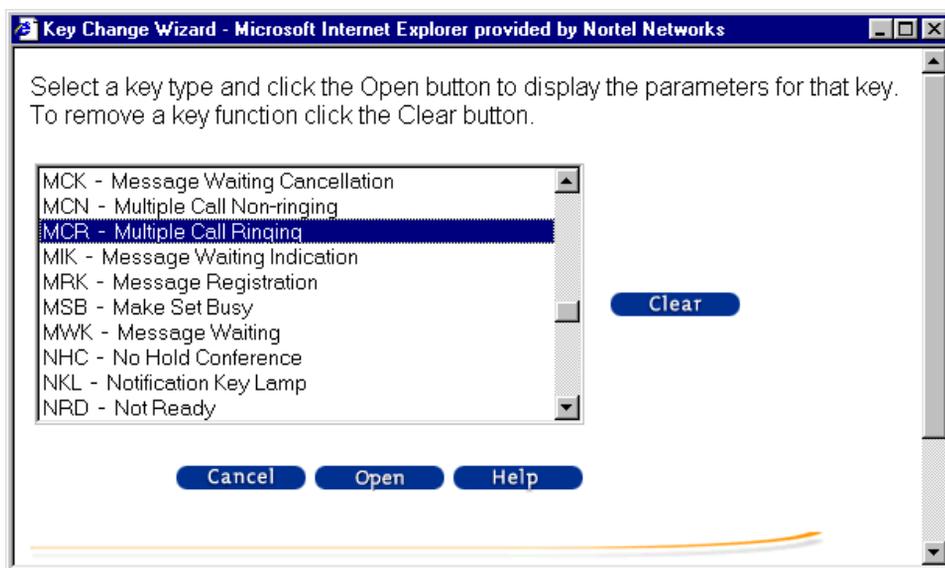


**3**   Since you are not changing the key type, simply click the Open button.

   The key change wizard displays the current parameters for the selected key.
   See Figure A-22

> →   **Note:** You can only modify the DN, CPND, and CLID. You may not
> view or change the DN's Voice Mailbox, ANI, or MARP.

> →   **Note:** When the Name Display Link to Directory check box is checked
> in Station Administration, the values for the First Name and Last Name
> fields are obtained from the directory and are not editable.

> →   **Note:** If the key change wizard does not display a Directory Number, or
> if you want to change the Directory Number, see "Finding Directory
> Numbers" on page A-29.

**Figure A-22**   Current parameters for Multiple Call Ringing DN key



**4**   Change the First Name and Last Name as shown in Figure A-23.

**Figure A-23**   Changed parameters for Multiple Call Ringing DN key

**5**   Click the Submit button.

A summary page opens that displays your changes as shown in Figure A-24.

**Figure A-24**   MCR key change summary page
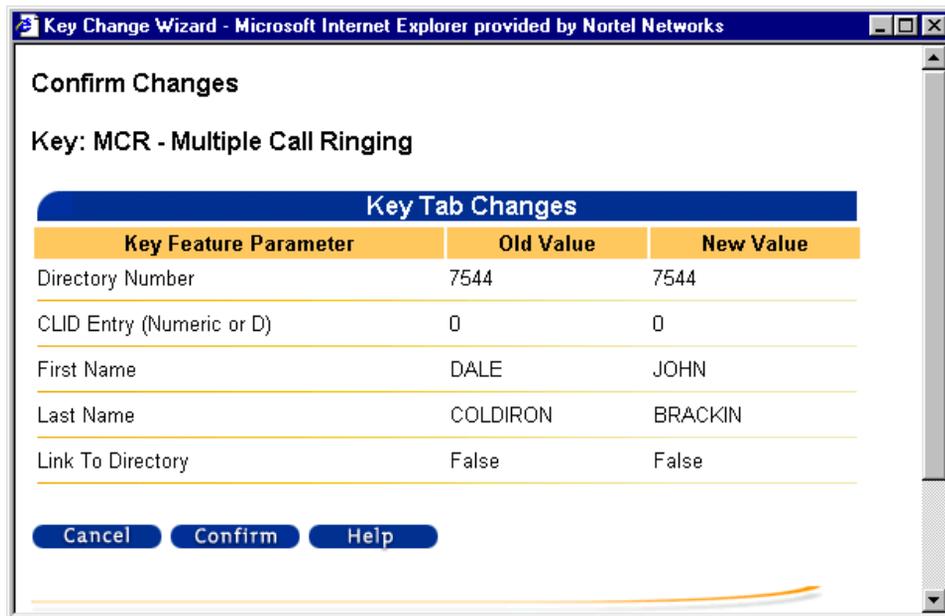


**6**   Click the Confirm button. A confirmation page is displayed. See "Change confirmation pages" on page A-37.

*Changing a key type*

In the following procedure we change a Conference key to a Call Forward key:

**1**   Click on the Conference key in the graphic on the Telephone Keys page. See Figure A-16.

**2**   Click on the Change button.

The Key Change Wizard launches. The current key type is highlighted. See Figure A-25.

**Figure A-25**  Key Change Wizard displaying the current key type
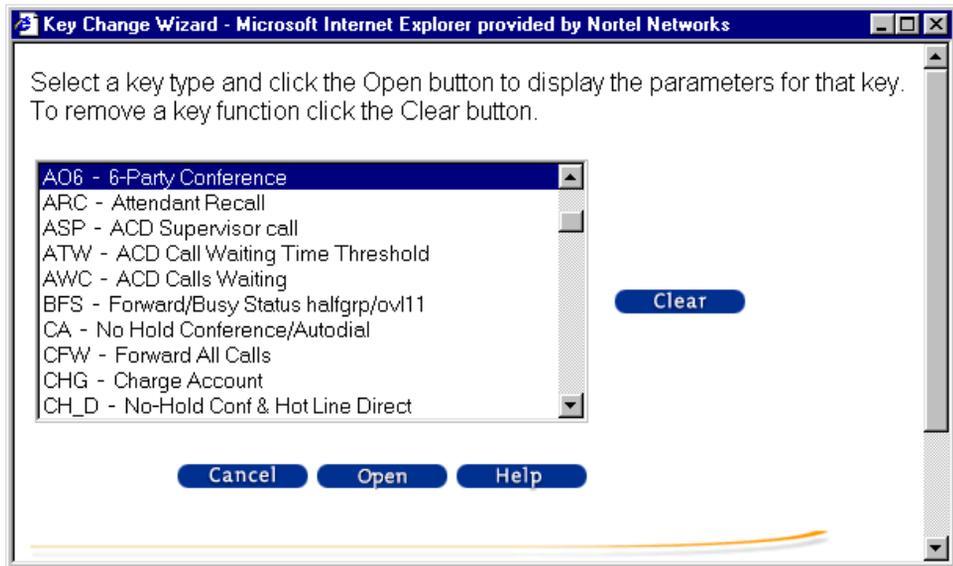


**3**  Click "CFW - Forward All Calls" in the list of key types. See Figure A-26.

**Figure A-26**  Select the Forward All Calls key type
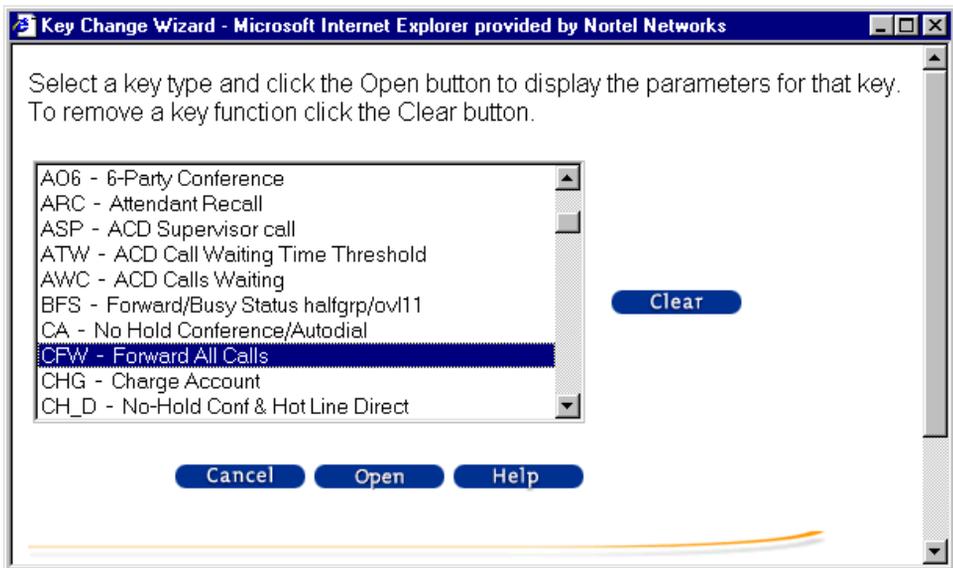


**4**  Click the Open button.

**5**   Enter the Redirection DN Length and Redirection DN in the edit boxes. See
Figure A-27.

> →   **Note:** When changing a key type, the default values are not displayed. If
> you enter a Redirection DN length that is greater than the default value in
> the Meridian 1 or Succession CSE 1000 system, or if you enter a
> Redirection DN that has more digits than the default value, you will
> receive a validation error.

**Figure A-27**   Forward All Calls key change wizard



**6**   Click the Submit button.

The key change summary page opens as shown in Figure A-28.

**Figure A-28**   CFW key change summary page
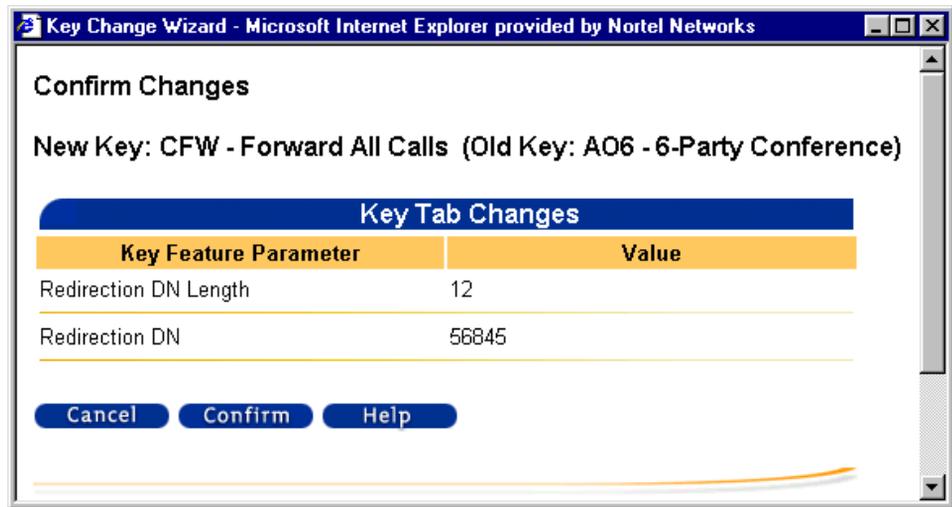


**7**   Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page A-37.

*Removing a key*

Use the following procedure to remove the function associated with a key, creating a blank, or unassigned, key:

**1**   Click on a key in the graphic on the Telephone Keys page. See Figure A-15.

**2**   Click the Change button.

The Key Change Wizard launches. The function associated with the selected key is highlighted in the list, Forward All Calls in this example. See Figure A-29.

**Figure A-29** Current key function displayed in the key change wizard
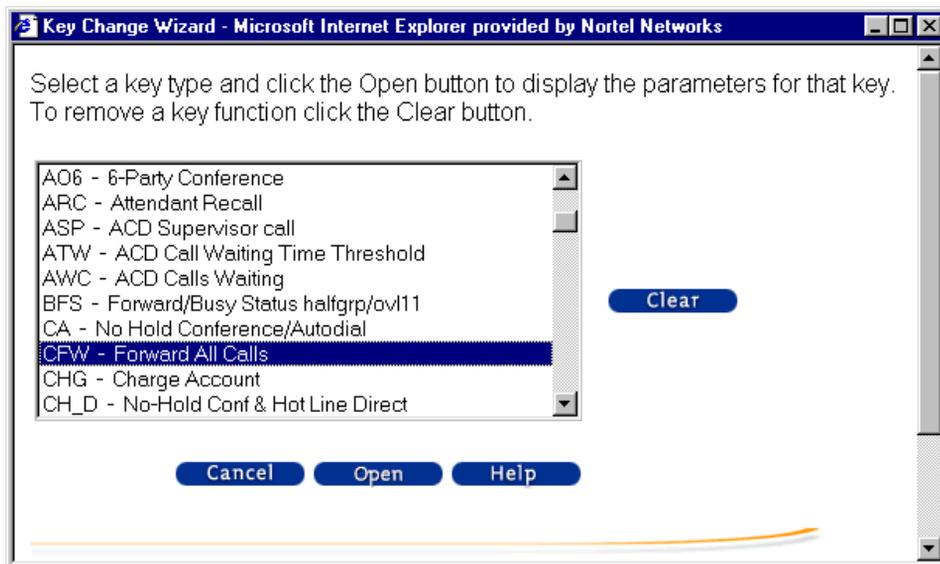


**3** Click the Clear button.

The key change summary page opens as shown in Figure A-30.

**Figure A-30** Unassigned key change summary page
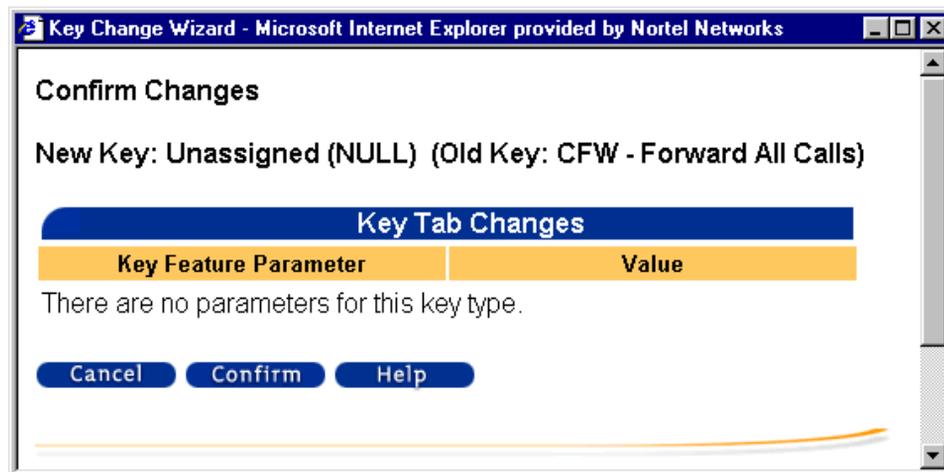


**4** Click the Confirm button.

A confirmation page is displayed. See "Change confirmation pages" on page A-37.

*Finding Directory Numbers*

The Find DN button is used to look up used or unused Directory Numbers. It appears next to the edit box for any DN key

**Find Used Directory Numbers**

**1**  Click on the Find DN button. See Figure A-22. The Find Directory Numbers page opens as shown in Figure A-31.

**Figure A-31**   Find Directory Numbers page
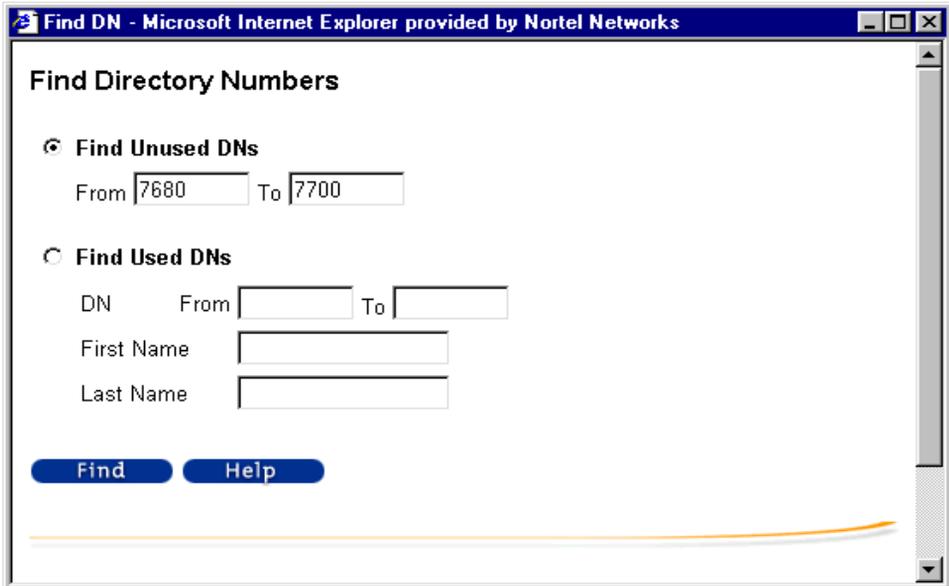


**2**  Click on the Find Unused DNs radio button.

**3**  Enter a range of DNs on which to search.

> →  **Note:** You must have a Numbering Plan defined in the System Properties in OTM Windows Navigator to use the Find Unused DNs feature. If the Numbering Plan is not defined, or if there are no unused DNs, an error message is displayed. See Figure A-33.

**4** Click the Find Button. If unused DNs are found, a page similar to the example shown in Figure A-32 appears. If there are no unused DNs found, the message shown in Figure A-33 appears.

**Figure A-32** Find results when Unused DNs exist
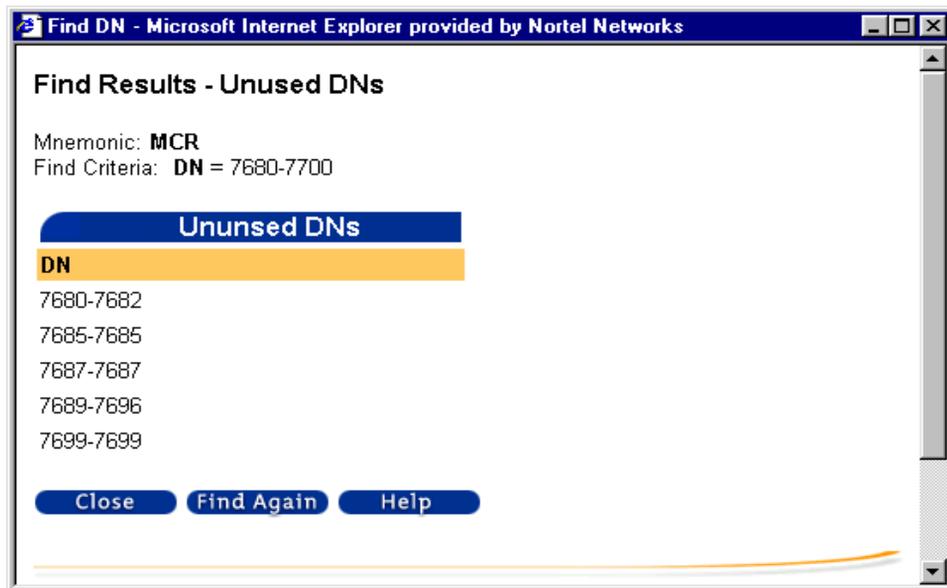


> **Note:** Only the unused DNs belonging to the same site, system, and customer as your telephone are shown.

> **Note:** If you press the Find Again button, you return to the previous screen and you can enter a different range of DNs.

**Figure A-33**   Find results when no Unused DNs exist
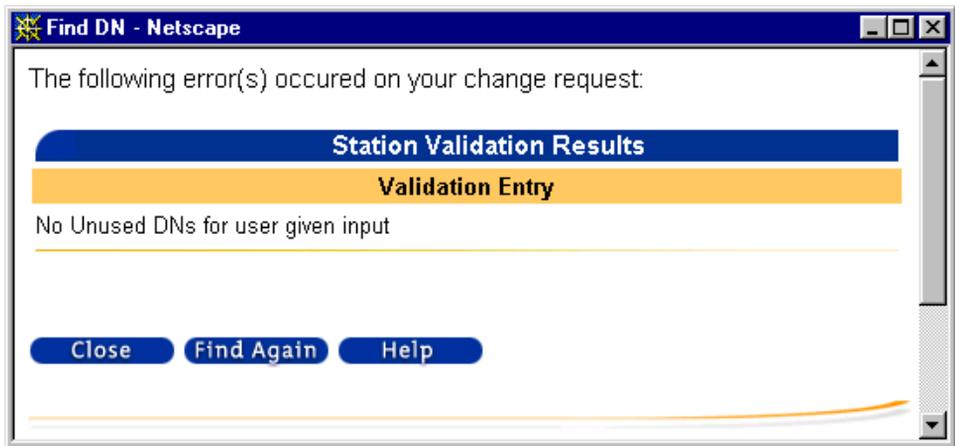


**Find Used Directory Numbers**

**1**   Click on the Find DN button. See Figure A-22. The Find Directory Numbers page opens as shown in Figure A-31.

**2**   Click on the Find Used DNs radio button.

**3**   Click on the radio button that corresponds to your search criteria

- To search by DN, enter a range of DNs on which to search.
- To search by last name, enter the last name of the person whose name is assigned to the DN you are seeking.
- To search by first name, enter the first name of the person whose name is assigned to the DN you are seeking.

**4**   Click on the Find button. If DNs that match your search criteria are found, a page similar to the example shown in Figure A-34 opens. If there are no DNs that match your search criteria, a message similar to the one shown in Figure A-35 opens.

**Figure A-34**   Find results when there are matching used DNs

**Find DN - Microsoft Internet Explorer provided by Nortel Networks**

## Find Results - Used DNs

Mnemonic: **MCR**
Find Criteria:  **DN** = 7650-7700

Found: **5**

| Used DNs | | | |
|---|---|---|---|
| **DN** | **Location** | **Key** | **MARP** |
| 7665 | SC9-Ph1 | 0 | Yes |
| 7675 | 004-0-05-09 | 1 | No |
| 7684 | 004-0-01-03 | 1 | No |
| 7697 | 004-0-07-00 | 1 | No |
| 7698 | 004-0-07-01 | 1 | No |

Close      Find Again      Help
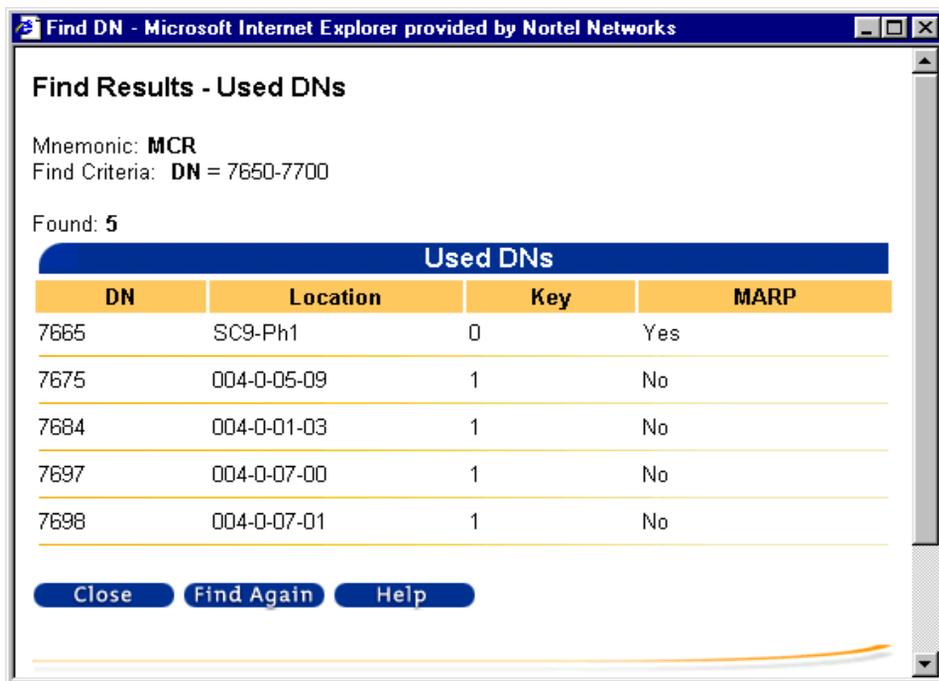
**Figure A-35**   Find results when there are no matching used DNs

**Find DN - Netscape**

The following error(s) occured on your change request:

| Station Validation Results |
|---|
| **Validation Entry** |
| No Used DNs for user given input |

Close      Find Again      Help
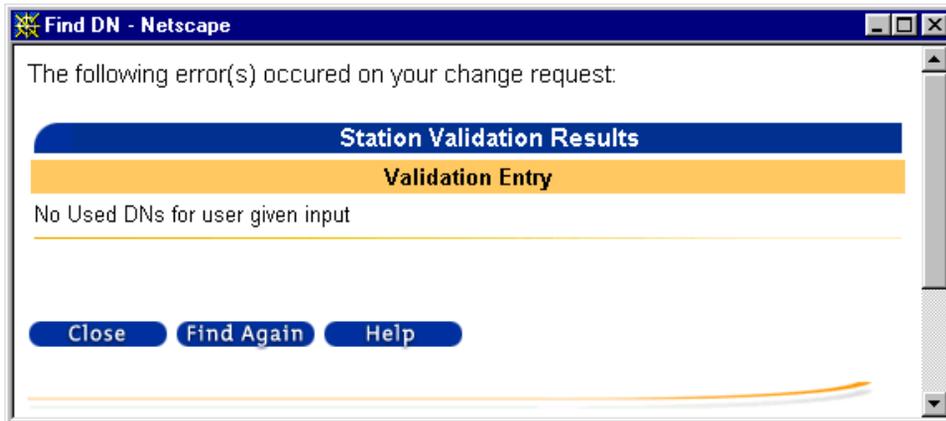
# Telephone—Features page

The Features page allows you to view and change features that are not assigned to keys. Features are related to individual prompts in LD 10 or 11, with one or more configurable parameters.

Your network administrator determines which features you can see in the list. If your access profile allows changes, the Submit and Reset buttons appear as shown in Figure A-36.

Whenever possible, a drop down list box containing all possible values for the feature is provided. In cases where this is not possible, for example when entering a call forward DN, an edit box is provided.

**Figure A-36** Telephone Features page

## Telephone—Details page

The Details page provides a summary of the complete telephone configuration. It consists of two sections, one for the keys (Figure A-37), and one for the features (Figure A-38).

**Figure A-37**   Telephone Details layout (keys)

**Figure A-38** Telephone Details layout (features)

# Change confirmation pages

A confirmation page appears when you click the Confirm button in the change summary page for the General, Keys, or Features tab. The confirmation page varies based on your access profile.

When your access profile allows the Meridian 1 or Succession CSE 1000 synchronization option, the page shown in Figure A-39 appears.

**Figure A-39**   User confirmation with automatic synchronization
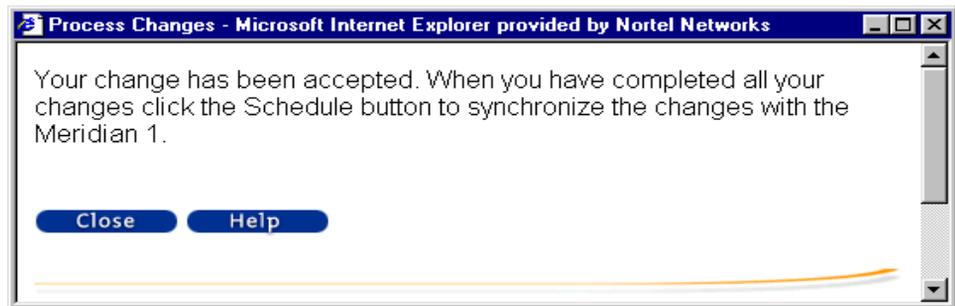


If your access profile does not permit automatic synchronization, the changes must be approved by the network administrator, and the page shown in Figure A-40 appears.

**Figure A-40**   User confirmation when network administrator approval is required
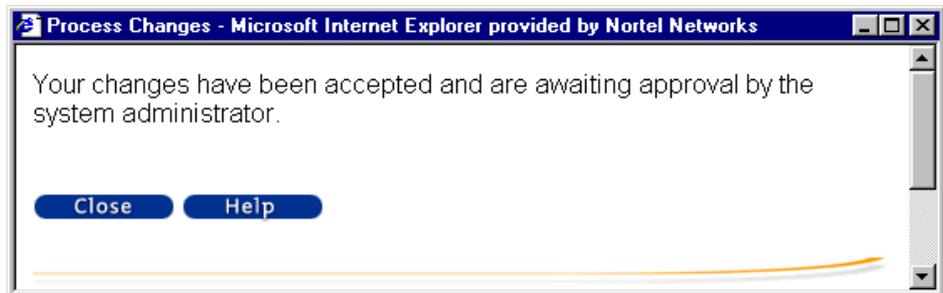


If there is a validation error, you are presented with an error message similar to the example shown in Figure A-41.

**Figure A-41**    Example of a validation error message
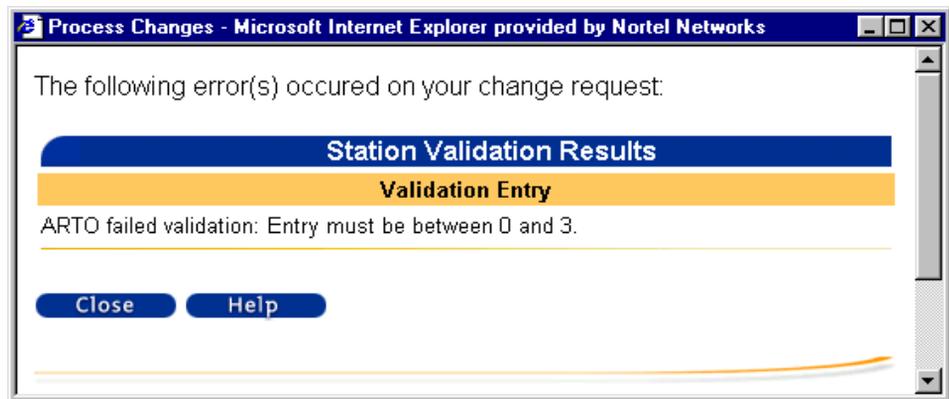


# Telephone change procedure

The following procedure outlines the steps that you take to make changes to your telephone.

1    Launch a supported Web browser and navigate to the OTM host name or IP address provided by your network administrator.

2    Log into Desktop Services using the Login Name and Password provided by your network administrator.

The My Profile Web page is displayed. This contains your OTM Directory information. See Figure A-2 on page A-3.

3    Click on a telephone extension link in the Navigation Bar.

The General page is displayed. If allowed by your network administrator, you can change the Station Location, Key Based Modules, and Designation fields. See Figure A-3 on page A-6.

To make a change:

a    Enter the new value and click the Submit button.

A page containing a summary of your changes opens. See Figure A-4 on page A-8.

b    Click the Confirm button.

A confirmation message is displayed. See Figure A-39 through Figure A-41 on page A-37.

> **Note:** The sync status of the telephone is displayed at the top of the Telephone pages. When the information for the telephone has been changed, but the changes have not be synchronized with the Meridian 1 or Succession CSE 1000 system, a Show Current configuration/Pending changes drop down box allows you to select which configuration is shown. Once the telephone and the system have been synchronized, "Current configuration" appears at the top of the page, and the drop down box is no longer displayed.

**4** Click the Keys button.

The Keys page is displayed. If allowed by your network administrator, you can change the key-based features, or functions, assigned to any of the keys. To make a change:

**a** In the graphical representation of your telephone, click the key you want to change. See Figure A-15 on page A-16.

**b** Click the Change button.

A list of the available choices for the selected key is displayed in the Key Change Wizard. See Figure A-18 on page A-19.

**c** Select a new key-based feature to assign to the key and click the Open button.

**d** If required, the Key Change Wizard opens a page that requests that you enter the parameters for the selected key. See Figure A-19 on page A-20. Enter the parameters.

**e** Click the Submit button.

A page containing a summary of your changes opens. See Figure A-20 on page A-21.

**f** Click the Confirm button.

A confirmation message is displayed. See Figure A-39 through Figure A-41 on page A-37.

**5** Click the Features button.

The Features page is displayed. If permitted by your network administrator, you can change the allowed/denied status of features assigned to your extension. See Figure A-36 on page A-34.

To make a change:

**a**   Do one of the following:

•   Select the appropriate value for the desired feature from the drop down box.

•   Enter the value of the parameter associated with the desired feature in the edit box.

**b**   Click the Submit button.

A page containing a summary of your changes opens.

**c**   Click the Confirm button.

A confirmation message is displayed. See Figure A-39 through Figure A-41 on page A-37.

**6**   Click the Details button.

Information on the Keys and Features currently assigned to your telephone is presented on the Details page. This page is always read only. See Figure A-37 on page A-35 and Figure A-38 on page A-36.

**7**   If a Schedule button appears at the top if the Telephones pages, your network administrator has permitted you to automatically synchronize all of the changes you have made with the information stored on the Meridian 1 or Succession CSE 1000 system. If there is no Schedule button, your network administrator will review your changes and manually synchronized the changes with the Meridian 1 or Succession CSE 1000 system. If the Schedule button is present:

**a**   Click the Schedule button.

**b**   Wait a few moments for the synchronization to occur.

**c**   Click the Refresh button in your browser.

When the Show Current configuration/Pending changes drop down list is no longer displayed, all of your changes have been made and the telephone has the new configuration.

**8**   If it has been configured by your network administrator, click the Billing Reports link in the Navigation Bar to view your telephone billing reports from

the Telecom Billing System (TBS). TBS Web Reporting is available with
OTM 1.2 and later.

# Appendix B
# Script File Summary

This appendix contains a list of all of the script files used for the OTM applications. A script is a pre-written program which contains a set of commands and functions required to perform specific activities. Some scripts are defined for specific PC and Meridian 1 configurations and are therefore selected based on each user's configuration. Most OTM scripts, however, are defined for the general operation of the OTM applications and are therefore automatically selected to perform specific functions within OTM.

# Common Services scripts

The following script files are used by the OTM Common Services applications. They are automatically selected whenever you run OTM and apply to all of the OTM applications as a whole. You do not need to select these script files to perform a required function.

| | |
|---|---|
| HAYESMDM.SCR | Functional script used by Common Services applications for connection with Hayes compatible modems |
| CUSTMDM.SCR | Functional script used by Common Services applications for connection with customized modems |
| M1MODEM.SCR | Functional support script used to access far-end equipment (e.g., dispatcher modems) |
| ERROR.SCR | Functional script required for error handling |

# Telecom Billing System scripts

The following script files are used by the Telecom Billing System to perform data collection. Select the script file that matches your data collection and processing requirements.

## Real time CDR data collection

The following script files are used for real time CDR data collection from the Meridian 1; no buffer unit required.

SL1OLD.COL          Real time data collection script for Old format CDR.

SL1NEW.COL          Real time data collection script for New format CDR.

## CDR data collection from MDR-2000

The following script file is used for data collection from an MDR-2000 buffer unit.

MDR2000.COL        Data collection script which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer). MDR-2000 requires a chip which is compatible with X11 Release 23.

## Sample data collection

The following script file is used to collect CDR data from a sample file. This is used for testing purposes.

SAMPLE.COL     Data collection script which collects sample CDR data from sample file in the Telecom Billing System directory.

# Traffic Analysis scripts

The script files used by OTM Traffic Analysis provide the main functions required for traffic data collection and report generation. The data collection script files are selected when you enter your Meridian 1 and communications parameters. The report generation script files are automatically selected when you generate reports.

## Real time traffic data collection

The following script files are used for real time traffic data collection (no buffer unit). They will be automatically selected when you set up this site for real time traffic data collection (from the OTM Site Configuration application).

| | |
|---|---|
| LD2.SCR | Main traffic data collection scripts |
| LD2INI.SCR | Functional script used by LD2.SCR (used to initialize Meridian 1 to have collection performed hourly) |
| LOGSL1.SCR | Functional script used by LD2.SCR |

## Traffic data collection from MDR-2000

The following script files are used for traffic data collection from an MDR-2000 buffer unit. They will be automatically selected when you set up this site for traffic data collection through the MDR-2000 buffer unit (from the OTM Site Configuration application).

| | |
|---|---|
| M2K.SCR | Main traffic data collection script |
| M2KINI.SCR | Functional script used by M2K.SCR (used to initialize Meridian 1 to have collection performed hourly in pass-through mode) |

## Traffic data collection from PollCat II/III

The following script file is used for traffic data collection from the PollCat II/III buffer units. It will be automatically selected when you set up this site for traffic data collection using the PollCat II/III buffer units (from the OTM Site Configuration application).

POLL.SCR        Main traffic data collection script

## Traffic data collection from AT1/AT2

The following script files are used for traffic data collection from the AT1 and AT2 buffer units. They will be automatically selected when you set up this site for traffic data collection using the AT1 or AT2 buffer units (from the OTM Site Configuration application).

TSB1.SCR        Main traffic data collection script for AT1 buffer unit

TSB2.SCR        Main traffic data collection script for AT2 buffer unit

## Traffic data collection from SEB II

The following script file is used for traffic data collection from the SEB II buffer unit. It will be automatically selected when you set up this site for traffic data collection using the SEB II buffer unit (From the OTM Site Configuration application).

SEBTRAF.SCR       Main traffic data collection script

## Traffic data collection from Sentinel 2000

The following script file is used for traffic data collection from the Sentinel 2000 buffer unit. It will be automatically selected when you set up this site for traffic data collection using the Sentinel 2000 buffer unit (from the OTM Site Configuration application).

SNLTRAF.SCR       Main traffic data collection script

## Traffic Analysis report generation

The following script files are used for report generation. They are automatically selected when you generate Traffic Analysis reports.

| | | | |
|---|---|---|---|
| AUXPLK.SCR | AVGSOA.SCR | CALPRK.SCR | CBKQUE.SCR |
| CONSOL.SCR | CSAML1.SCR | CSAML2.SCR | CSAML3.SCR |
| CSAML4.SCR | CSAML5.SCR | CSAML6.SCR | CSAMLI.SCR |
| CSAMLK.SCR | CUSCON.SCR | DCHANL.SCR | DTDLAY.SCR |
| DTNSPD.SCR | FEAKEY.SCR | GLOBAL.SCR | GLPTRF.SCR |
| GMSGAP.SCR | GNTLPS.SCR | GOHQUE.SCR | GPCLTB.SCR |
| GPROCL.SCR | GROUTL.SCR | GSUTRF.SCR | GTRNKS.SCR |
| ICONSL.SCR | IMTCHL.SCR | INPMSG.SCR | INTRKG.SCR |
| ISDNPD.SCR | ISDNPM.SCR | ISDNPT.SCR | JCTRAF.SCR |
| JCTRGP.SCR | LPTRAF.SCR | MICRO.SCR | MSGATQ.SCR |
| MUSBRD.SCR | NCOSVC.SCR | NETLPS.SCR | NETWKS.SCR |
| NTATSV.SCR | OHKOVT.SCR | OHKQUE.SCR | OMTCHL.SCR |
| OUTMSG.SCR | PCTLTB.SCR | PRADIO.SCR | PROCLD.SCR |
| RADPAG.SCR | RANBRD.SCR | RTLREQ.SCR | SELTRM.SCR |
| SLTRAF.SCR | SRADIO.SCR | SUMCCO.SCR | SUMICO.SCR |
| SUMSYS.SCR | SUMTRK.SCR | SVCLPS.SCR | TMESSG.SCR |
| TRUNKS.SCR | TSETST.SCR | WATCON.SCR | WPRCLD.SCR |
| WTRNKS.SCR | | | |

The following script files are used for the Data Parser as part of the report generation process. They are automatically selected when processing data for Traffic Analysis reports.

| | | | |
|---|---|---|---|
| TFC000.SCR | TFC001.SCR | TFC002.SCR | TFC003.SCR |
| TFC004.SCR | TFC005.SCR | TFC006.SCR | TFC007.SCR |
| TFC008.SCR | TFC009.SCR | TFC10X.SCR | TFC101.SCR |
| TFC105.SCR | TFN001.SCR | TFN002.SCR | TFN101.SCR |

| | | | |
|---|---|---|---|
| TFS000.SCR | TFS001.SCR | TFS002.SCR | TFS003.SCR |
| TFS004.SCR | TFS005.SCR | TFS007.SCR | TFS008.SCR |
| TFS009.SCR | TFS010.SCR | TFS011.SCR | TFS012.SCR |
| TFS013.SCR | TFS50X.SCR | TFS101.SCR | TFS102.SCR |
| TFS105.SCR | TFS41X.SCR | TRAFFIC.SCR | TRFAXS.SCR |
| TRFCDR.SCR | TRFCUS.SCR | TRFNET.SCR | TRFSYS.SCR |

# Call Tracking scripts

The following script files are used by Call Tracking to perform data collection and real time monitoring. Certain script files are automatically selected when you enter your configuration parameters in the OTM Site Configuration application. These represent the common scripts for data collection.

For example, if you define SDI1 to have real time CDR data collection performed from it, then SDI1 will be configured to run the real time CDR data collection scripts SL1.SCR and SL1LOGIN.SCR.

If you collect CDR data from a data file (e.g., if you select the File option from the Call Tracking Communications data base), then you can select the filename from which you will collect the CDR data and then select a script filename for that particular format of CDR data. For example, if you select a file for data collection which contains normalized CDR data, then you would select the script file COLLECT.SCR.

## Real time CDR data collection

The following script files are used for real time CDR data collection from the Meridian 1; no buffer unit is required.

| | |
|---|---|
| SL1.SCR | Real time data collection script for Old format CDR |
| SL1NEW.SCR | Real time data collection script for New format CDR |
| SL1NEWX.SCR | Real time data collection script for New format CDR; supports X11 Release 23 |

SL1EURO.SCR    Real time data collection script for New format CDR with Periodic Pulse Metering

SL1EUROX.SCR   Real time data collection script for "New" format CDR with Periodic Pulse Metering; supports X11 Release 23

SL1LOGIN.SCR   Functional script used by above-mentioned data collection scripts

## CDR data collection from MDR-2000

The following script files are used for data collection from an MDR-2000 buffer unit.

COLLECT.SCR    Data collection script which collects Old format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer)

COLLECTX.SCR   Data collection script which collects New format CDR from MDR-2000 to produce normalized CDR (erases contents of buffer); MDR-2000 requires a chip which is compatible with X11 Release 23

2000FD.SCR     Data collection script which monitors in real time Old format CDR from an MDR-2000

2000FDX.SCR    Data collection script which monitors in real time New format CDR from an MDR-2000; MDR-2000 requires a chip which is compatible with X11 Release 23

## CDR data collection from PollCat II/III

The following script files are used for data collection from the PollCat II/III buffer units.

POLLCDR.SCR    CDR data collection script for PollCat II/III buffer units

PARSESL1.SCR   Functional script used by POLLCDR.SCR

POLLNEWX.SCR   CDR data collection script for PollCat II/III buffer units; supports X11 Release 23

NEWCDRX.SCR    Functional script used by POLLNEWX.SCR

## CDR data collection from AT1/AT2

The following script files are used for data collection from the AT1 and AT2 buffer units.

| | |
|---|---|
| AT1CDR.SCR | CDR data collection script for AT1 buffer unit |
| AT2CDR.SCR | CDR data collection script for AT2 buffer unit |
| PARSESL1.SCR | Functional script used by AT1CDR.SCR and AT2CDR.SCR script files |
| AT1NEWX.SCR | New format CDR data collection script for AT1 buffer unit; supports X11 Release 23 |
| AT2NEWX.SCR | New format CDR data collection script for AT2 buffer unit; supports X11 Release 23 |
| NEWCDRX.SCR | Functional script used by AT1NEWX.SCR and AT2NEWX.SCR script files |

## CDR data collection from SEB II

The following script files are used for data collection from the SEB II buffer unit.

| | |
|---|---|
| SEB.SCR | CDR data collection script for SEB II buffer unit |
| PARSESL1.SCR | Functional script used by SEB.SCR script file |
| SEBNEWX.SCR | New format CDR data collection script for SEB II buffer unit; supports X11 Release 23 |
| NEWCDRX.SCR | Functional script used by SEBNEWX.SCR script file |

## CDR data collection from Sentinel 2000

The following script files are used for data collection from a Sentinel 2000 buffer unit.

| | |
|---|---|
| SNLCDR.SCR | CDR data collection script for Sentinel 2000 buffer unit |
| SNLCDRX.SCR | CDR data collection script for Sentinel 2000 buffer unit; supports X11 Release 23 |

## Call Tracking alarm scripts

The following script files are used for Call Tracking alarms. They will be automatically selected when you define the Call Tracking alarms.

CMALARM.SCR    Call Tracking alarm script

CMPAGER.SCR    Call Tracking alarm pager script

## CDR data collection modem scripts

The following script files are supporting function scripts used by all CDR data collection scripts for Call Tracking. The appropriate script will be automatically used when you select Hayes or Custom as the format for the modem for CDR data collection from the OTM Site Configuration application.

If you enter custom modem information when setting up a site, then the custom modem script file will be updated with the appropriate parameters.

HAYES.SCR      Functional script used by all CDR data collection scripts in Call Tracking for connection with Hayes compatible modems

CUSTOM.SCR     Functional script used by all CDR data collection scripts in Call Tracking for connection with customized modems (updated with correct parameters)

# Script usage table

The following table lists the types of scripts which would be selected for different scenarios for Call Tracking. These represent the main scripts which can be selected to suit a particular scenario. All other scripts will automatically selected depending on these script selections.

**Table B-1**   Script usage table

| To | Use |
|---|---|
| Perform real time CDR data collection from Meridian 1 | SL1.SCR |
| Collect CDR from MDR-2000 buffer unit | COLLECT.SCR |
| Collect CDR from PollCat II/III buffer units | POLLCDR.SCR |
| Collect CDR from AT1 buffer unit | AT1CDR.SCR |
| Collect CDR from AT2 buffer unit | AT2CDR.SCR |
| Collect CDR from SEB II buffer unit | SEB.SCR |
| Collect Traffic data from SEB II buffer unit | SEBTRAF.SCR |
| Collect CDR from Sentinel 2000 buffer unit | SNLCDR.SCR |

# Appendix C
# Control files included with alarm notification

This appendix displays the control files that are loaded into the OTM PC when the Alarm Notification application is installed. These files are loaded into the default location C:\Nortel\Common Data\Alarm Notification\Control Files unless otherwise specified.

> **Caution:** Always use a copy of these files when customizing them for your specific environment. Do not use the original files supplied with your OTM product. These files are overwritten when OTM is reinstalled or upgraded; if you have customized the original files, any changes will be lost.

# Devices file

This section shows the content of the *Devices.txt* file included with the application.

```
# This file contains a list of specific devices to be monitored by
# Alarm Notification.  As this file may be replaced during a software ,
# upgrade it is suggested that any changes be made in a copy and the copy .
# used.
#The following are example definitions:
#
#Meridian1 192.9.200.1 my_m1
#Meridian1 192.9.200.2
#Meridian1 sample_m1

#OTM          47.82.40.57
#MMCS         47.32.164.69
#ITG          47.82.45.161
#ITG_ISDN_TRK 47.82.46.64
#ITG_IP_LINE  47.114.40.31
#ITG_IP_PHONE 47.114.40.31
#ISS7         47.49.4.78
#BRAVO        47.49.4.80
#CALL_PILOT   47.235.12.85
#BS450        47.32.164.80
#MMCS_AP      47.49.4.20
#
# User-provided devices should be added below this line.

Meridian1 47.114.45.3
Meridian1 47.114.45.5
Meridian1 47.114.45.7
MMCS      47.114.45.2
```

# Configuration file

This section shows the content of the *Config.txt* file included with the application.

```
# These are the SNMP trap definitions for Nortel supported devices.

# This file is replaced during a software upgrade, so we suggest
# that you backup this file before an upgrade and also before changing it.

device BRAVO 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.3.11.4.4.1.7.2.0 string  $SystemComponent      "System Component"
    1.3.6.1.4.1.562.3.11.4.4.1.7.3.0 string  $DeviceTime           "Device Time"
    1.3.6.1.4.1.562.3.11.4.4.1.7.4.0 integer $ActiveListStatus     "Active Status"
    1.3.6.1.4.1.562.3.11.4.4.1.7.5.0 integer $Severity             "Severity"
    1.3.6.1.4.1.562.3.11.4.4.1.7.6.0 integer $AlarmType            "Alarm Type"
    1.3.6.1.4.1.562.3.11.4.4.1.7.7.0 integer $ProbableCause        "Probable Cause"
    1.3.6.1.4.1.562.3.11.4.4.1.7.8.0 string  $ErrorCode            "Error Code"
    1.3.6.1.4.1.562.3.11.4.4.1.7.9.0 string  $OperatorData         "Operator Data"
}

device BS450 0.0 1.0 2.0 3.0 4.0 5.0 {
    1.3.6.1.2.1.2.2.1.1.1 integer            $Port1                "Port 1"
    1.3.6.1.2.1.2.2.1.1.2 integer            $Port2                "Port 2"
    1.3.6.1.2.1.2.2.1.1.3 integer            $Port3                "Port 3"
    1.3.6.1.2.1.2.2.1.1.4 integer            $Port4                "Port 4"
    1.3.6.1.2.1.2.2.1.1.5 integer            $Port5                "Port 5"
    1.3.6.1.2.1.2.2.1.1.6 integer            $Port6                "Port 6"
    1.3.6.1.2.1.2.2.1.1.7 integer            $Port7                "Port 7"
    1.3.6.1.2.1.2.2.1.1.8 integer            $Port8                "Port 8"
    1.3.6.1.2.1.2.2.1.1.9 integer            $Port9                "Port 9"
    1.3.6.1.2.1.2.2.1.1.10 integer           $Port10               "Port 10"
    1.3.6.1.2.1.2.2.1.1.11 integer           $Port11               "Port 11"
    1.3.6.1.2.1.2.2.1.1.12 integer           $Port12               "Port 12"
    1.3.6.1.2.1.2.2.1.1.13 integer           $Port13               "Port 13"
    1.3.6.1.2.1.2.2.1.1.14 integer           $Port14               "Port 14"
    1.3.6.1.2.1.2.2.1.1.15 integer           $Port15               "Port 15"
    1.3.6.1.2.1.2.2.1.1.16 integer           $Port16               "Port 16"
    1.3.6.1.2.1.2.2.1.1.17 integer           $Port17               "Port 17"
    1.3.6.1.2.1.2.2.1.1.18 integer           $Port18               "Port 18"
    1.3.6.1.2.1.2.2.1.1.19 integer           $Port19               "Port 19"
    1.3.6.1.2.1.2.2.1.1.20 integer           $Port20               "Port 20"
    1.3.6.1.2.1.2.2.1.1.21 integer           $Port21               "Port 21"
    1.3.6.1.2.1.2.2.1.1.22 integer           $Port22               "Port 22"
    1.3.6.1.2.1.2.2.1.1.23 integer           $Port23               "Port 23"
    1.3.6.1.2.1.2.2.1.1.24 integer           $Port24               "Port 24"
}

device CALL_PILOT 6.1 6.2 6.3 6.4 {
    1.3.6.1.4.1.562.3.8.2.5.2.1.1.0 integer  $AlarmSeqNum          "Alarm Seq Num"
    1.3.6.1.4.1.562.3.8.2.5.2.1.2.0 string   $DeviceTime           "Device Time"
    1.3.6.1.4.1.562.3.8.2.5.2.1.3.0 integer  $AlarmCode            "Error Code"
    1.3.6.1.4.1.562.3.8.2.5.2.1.4.0 integer  $AlarmType            "Alarm Type"
    1.3.6.1.4.1.562.3.8.2.5.2.1.5.0 integer  $Severity             "Severity"
    1.3.6.1.4.1.562.3.8.2.5.2.1.6.0 integer  $TenantID             "Tenant ID"
    1.3.6.1.4.1.562.3.8.2.5.2.1.7.0 integer  $CustomerID           "Customer ID"
    1.3.6.1.4.1.562.3.8.2.5.2.1.8.0 string   $SystemComponent      "System Component"
    1.3.6.1.4.1.562.3.8.2.5.2.1.9.0 string   $OperatorData         "Operator Data"
}

device ISS7 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.27.2.1.7.2.0 string      $SystemComponent      "System Component"
    1.3.6.1.4.1.562.27.2.1.7.3.0 string      $DeviceTime           "Device Time"
    1.3.6.1.4.1.562.27.2.1.7.4.0 integer     $ActiveListStatus     "Active Status"
```

```
        1.3.6.1.4.1.562.27.2.1.7.5.0 integer    $Severity              "Severity"
        1.3.6.1.4.1.562.27.2.1.7.6.0 integer    $AlarmType             "Alarm Type"
        1.3.6.1.4.1.562.27.2.1.7.7.0 integer    $ProbableCause         "Probable Cause"
        1.3.6.1.4.1.562.27.2.1.7.8.0 string     $ErrorCode             "Ntp Index"
        1.3.6.1.4.1.562.27.2.1.7.9.0 string     $OperatorData          "Operator Data"
}

device ITG 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.3.11.1.4.1.7.2.0 string $SystemComponent    "System Component"
    1.3.6.1.4.1.562.3.11.1.4.1.7.3.0 string $DeviceTime         "Device Time"
    1.3.6.1.4.1.562.3.11.1.4.1.7.4.0 integer $ActiveListStatus  "Active Status"
    1.3.6.1.4.1.562.3.11.1.4.1.7.5.0 integer $Severity          "Severity"
    1.3.6.1.4.1.562.3.11.1.4.1.7.6.0 integer $AlarmType         "Alarm Type"
    1.3.6.1.4.1.562.3.11.1.4.1.7.7.0 integer $ProbableCause     "Probable Cause"
    1.3.6.1.4.1.562.3.11.1.4.1.7.8.0 string $ErrorCode          "Ntp Index"
    1.3.6.1.4.1.562.3.11.1.4.1.7.9.0 string $OperatorData       "Operator Data"
}

device ITG_ISDN_TRK 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.3.11.2.4.1.7.2.0 string $SystemComponent    "System Component"
    1.3.6.1.4.1.562.3.11.2.4.1.7.3.0 string $DeviceTime         "Device Time"
    1.3.6.1.4.1.562.3.11.2.4.1.7.4.0 integer $ActiveListStatus  "Active Status"
    1.3.6.1.4.1.562.3.11.2.4.1.7.5.0 integer $Severity          "Severity"
    1.3.6.1.4.1.562.3.11.2.4.1.7.6.0 integer $AlarmType         "Alarm Type"
    1.3.6.1.4.1.562.3.11.2.4.1.7.7.0 integer $ProbableCause     "Probable Cause"
    1.3.6.1.4.1.562.3.11.2.4.1.7.8.0 string $ErrorCode          "Ntp Index"
    1.3.6.1.4.1.562.3.11.2.4.1.7.9.0 string $OperatorData       "Operator Data"
}

device ITG_IP_LINE 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string $SystemComponent    "System Component"
    1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string $DeviceTime         "Device Time"
    1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus  "Active Status"
    1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity          "Severity"
    1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType         "Alarm Type"
    1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause     "Probable Cause"
    1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string $ErrorCode          "Ntp Index"
    1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string $OperatorData       "Operator Data"
}

device ITG_IP_PHONE 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.3.11.5.4.1.7.2.0 string $SystemComponent    "System Component"
    1.3.6.1.4.1.562.3.11.5.4.1.7.3.0 string $DeviceTime         "Device Time"
    1.3.6.1.4.1.562.3.11.5.4.1.7.4.0 integer $ActiveListStatus  "Active Status"
    1.3.6.1.4.1.562.3.11.5.4.1.7.5.0 integer $Severity          "Severity"
    1.3.6.1.4.1.562.3.11.5.4.1.7.6.0 integer $AlarmType         "Alarm Type"
    1.3.6.1.4.1.562.3.11.5.4.1.7.7.0 integer $ProbableCause     "Probable Cause"
    1.3.6.1.4.1.562.3.11.5.4.1.7.8.0 string $ErrorCode          "Ntp Index"
    1.3.6.1.4.1.562.3.11.5.4.1.7.9.0 string $OperatorData       "Operator Data"
}

device MDECT 6.1 6.2 6.3 6.4 6.6 6.9 6.10 {
    1.3.6.1.4.1.1417.1.1.1.5.0       string    $DeviceTime         "Device Time"
    1.3.6.1.4.1.1417.1.1.3.2.1.2.0   string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.3.1.4.0   string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.3.1.8.0   string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.9.0       string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.5.1.0     string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.7.0       string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.2.1.6.0     string    $OperatorData       "Operator Data"
    1.3.6.1.4.1.1417.1.1.3.1.0       string    $ErrorCode          "Error Code"
}

device Meridian1 6.10 {
    1.3.6.1.4.1.562.3.3.7.1.0   integer     $AlarmSeqNum           "Alarm Seq Num"
    1.3.6.1.4.1.562.3.3.7.2.0   string      $DeviceTime            "Device Time"
```

```
    1.3.6.1.4.1.562.3.3.7.3.0  integer      $Severity            "Severity"
    1.3.6.1.4.1.562.3.3.7.4.0  string       $ErrorCode           "Error Code"
    1.3.6.1.4.1.562.3.3.7.5.0  string       $SystemComponent     "System Component"
    1.3.6.1.4.1.562.3.3.7.6.0  string       $ComponentAddress    "Component Address"
    1.3.6.1.4.1.562.3.3.7.7.0  string       $Text                "Text"
    1.3.6.1.4.1.562.3.3.7.8.0  string       $OperatorData        "Operator Data"
    1.3.6.1.4.1.562.3.3.7.9.0  string       $ExpertData          "Expert Data"
    1.3.6.1.4.1.562.3.3.7.10.0 string       $CurrentAlarmCounts
}

device MMAIL 6.1 6.2 6.3 6.4 {
    1.3.6.1.4.1.562.3.10.2.1.1.0  string     $DeviceTime         "Device Time"
    1.3.6.1.4.1.562.3.10.2.1.2.0  integer    $Severity           "Severity"
    1.3.6.1.4.1.562.3.10.2.1.3.0  integer    $SeerType           "Seer Type"
    1.3.6.1.4.1.562.3.10.2.1.4.0  string     $ErrorCode          "Error Code"
    1.3.6.1.4.1.562.3.10.2.1.5.0  string     $SystemComponent    "System Component"
    1.3.6.1.4.1.562.3.10.2.1.6.0  integer    $SeerNode           "Seer Node"
    1.3.6.1.4.1.562.3.10.2.1.7.0  string     $System             "System"
    1.3.6.1.4.1.562.3.10.2.1.8.0  string     $OperatorData       "Operator Data"
    1.3.6.1.4.1.562.3.10.2.1.9.0  string     $Text               "Text"
    1.3.6.1.4.1.562.3.10.2.1.10.0 string     $ExpertData         "Expert Data"
}

device MMCS 6.10 {
    1.3.6.1.4.1.562.3.3.7.1.0 integer       $AlarmSeqNum         "Alarm Seq Num"
    1.3.6.1.4.1.562.3.3.7.2.0 string        $DeviceTime          "Device Time"
    1.3.6.1.4.1.562.3.3.7.3.0 integer       $Severity            "Severity"
    1.3.6.1.4.1.562.3.3.7.4.0 string        $ErrorCode           "Error Code"
    1.3.6.1.4.1.562.3.3.7.5.0 string        $SystemComponent     "System Component"
    1.3.6.1.4.1.562.3.3.7.6.0 string        $ComponentAddress    "Component Address"
    1.3.6.1.4.1.562.3.3.7.7.0 string        $Text                "Text"
    1.3.6.1.4.1.562.3.3.7.8.0 string        $OperatorData        "Operator Data"
    1.3.6.1.4.1.562.3.3.7.9.0 string        $ExpertData          "Expert Data"
    1.3.6.1.4.1.562.3.3.7.10.0 string       $CurrentAlarmCounts
}

device MMCS_AP 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.27.2.1.7.2.0 string     $SystemComponent     "System Component"
    1.3.6.1.4.1.562.27.2.1.7.3.0 string     $DeviceTime          "Device Time"
    1.3.6.1.4.1.562.27.2.1.7.4.0 integer    $ActiveListStatus    "Active Status"
    1.3.6.1.4.1.562.27.2.1.7.5.0 integer    $Severity            "Severity"
    1.3.6.1.4.1.562.27.2.1.7.6.0 integer    $AlarmType           "Alarm Type"
    1.3.6.1.4.1.562.27.2.1.7.7.0 integer    $ProbableCause       "Probable Cause"
    1.3.6.1.4.1.562.27.2.1.7.8.0 string     $ErrorCode           "Error Code"
    1.3.6.1.4.1.562.27.2.1.7.9.0 string     $OperatorData        "Operator Data"
}

device OTM 6.1 6.2 6.3 6.4 6.5 6.6 {
    1.3.6.1.4.1.562.50.1.2.1.0  integer     $AlarmSeqNum         "Alarm Seq Num"
    1.3.6.1.4.1.562.50.1.2.2.0  string      $DeviceTime          "Device Time"
    1.3.6.1.4.1.562.50.1.2.3.0  integer     $Severity            "Severity"
    1.3.6.1.4.1.562.50.1.2.4.0  integer     $NameSpace           "Name Space"
    1.3.6.1.4.1.562.50.1.2.5.0  string      $ErrorCode           "Error Code"
    1.3.6.1.4.1.562.50.1.2.6.0  string      $Site                "Site"
    1.3.6.1.4.1.562.50.1.2.7.0  string      $System              "System"
    1.3.6.1.4.1.562.50.1.2.8.0  string      $SystemComponent     "System Component"
    1.3.6.1.4.1.562.50.1.2.9.0  string      $OriginatingAgent    "Orig. Agent"
    1.3.6.1.4.1.562.50.1.2.12.0 string      $OperatorData        "Operator Data"
    1.3.6.1.4.1.562.50.1.2.13.0 string      $ExpertData          "Expert Data"
    1.3.6.1.4.1.562.50.1.2.14.0 string      $Text                "Text"
}

device SCCS 6.1 6.2 6.3 6.4 {
    1.3.6.1.4.1.562.3.8.1.5.2.1.1.0 integer $AlarmSeqNum         "Alarm Seq Num"
    1.3.6.1.4.1.562.3.8.1.5.2.1.2.0 string  $DeviceTime          "Device Time"
    1.3.6.1.4.1.562.3.8.1.5.2.1.3.0 integer $AlarmCode           "Error Code"
```

```
        1.3.6.1.4.1.562.3.8.1.5.2.1.4.0 integer  $AlarmType          "Alarm Type"
        1.3.6.1.4.1.562.3.8.1.5.2.1.5.0 integer  $Severity           "Severity"
        1.3.6.1.4.1.562.3.8.1.5.2.1.6.0 integer  $TenantID           "Tenant ID"
        1.3.6.1.4.1.562.3.8.1.5.2.1.7.0 integer  $CustomerID         "Customer ID"
        1.3.6.1.4.1.562.3.8.1.5.2.1.8.0 string   $SystemComponent    "System Component"
        1.3.6.1.4.1.562.3.8.1.5.2.1.9.0 string   $OperatorData       "Operator Data"
}

device SL100 6.1 6.2 6.3 6.4 6.5 6.6 {
        1.3.6.1.4.1.562.50.1.2.1.0  integer   $AlarmSeqNum       "Alarm Seq Num"
        1.3.6.1.4.1.562.50.1.2.2.0  string    $DeviceTime        "Device Time"
        1.3.6.1.4.1.562.50.1.2.3.0  integer   $Severity          "Severity"
        1.3.6.1.4.1.562.50.1.2.4.0  integer   $NameSpace         "Name Space"
        1.3.6.1.4.1.562.50.1.2.5.0  string    $ErrorCode         "Error Code"
        1.3.6.1.4.1.562.50.1.2.6.0  string    $Site              "Site"
        1.3.6.1.4.1.562.50.1.2.7.0  string    $System            "System"
        1.3.6.1.4.1.562.50.1.2.8.0  string    $SystemComponent   "System Component"
        1.3.6.1.4.1.562.50.1.2.9.0  string    $OriginatingAgent  "Orig. Agent"
        1.3.6.1.4.1.562.50.1.2.12.0 string    $OperatorData      "Operator Data"
        1.3.6.1.4.1.562.50.1.2.13.0 string    $ExpertData        "Expert Data"
        1.3.6.1.4.1.562.50.1.2.14.0 string    $Text              "Text"
}

# Add user supplied device definitions below this comment line.
```

# Script files

This section shows the content of the *sample_an_script.txt* and the
*sample_wizard_script.txt* files included with the OTM application.

## Sample Alarm Notification script file

The content of the file *sample_an_script.txt* appears below:

```
// *********************************************************************************************
//
//                                      Alarm Notification Scripts
//
// *********************************************************************************************


// *********************************************************************************************
// Map severities from the various traps that OTM receives into a standard severity list.
// *********************************************************************************************

counter $NormalizedSeverity := 0;

counter Undetermined     := 0;
counter Critical := 1;
counter Major := 2;
counter Minor := 3;
counter Warning := 4;
counter Info := 5;
counter Cleared := 6;
counter Unknown := 7;

// ========================================================================
//                          Map OTM severities
// ========================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> Info; 5 -> Info; 6 -> Cleared; 7 -> Unknown; x -> Undetermined

script AssignOTMSeverities when ( $CurrentTrapDevice = "OTM" ) {
    function assignit() {
        if ($Severity=Critical) {
            $NormalizedSeverity:=Critical;
        }else{ if ($Severity=Major) {
            $NormalizedSeverity:=Major;
        }else{ if ($Severity=Minor) {
            $NormalizedSeverity:=Minor;
        }else{ if ($Severity=Info) {
            $NormalizedSeverity:=Info;
        }else{ if ($Severity=Unknown) {
            $NormalizedSeverity:=Unknown;
        }else{ if ($Severity=Warning) {
            $NormalizedSeverity:=Warning;
        }else{ if ($Severity=Cleared){
            $NormalizedSeverity:=Cleared;
        }else{
            $NormalizedSeverity:=Undetermined;
        }}}}}}}
    }
    rule assign_severity {
        if ($CurrentTrapDevice="OTM") {
            assignit();
        }
    }
}
```

```
// ============================================================================
//                  Map severities from Meridian1 Open Alarms
// ============================================================================
// 1 -> Minor; 2 -> Major; 3 -> Critical; 4 -> Unknown; 5 -> Warning; 6 -> Cleared; 7 -> Undetermined; x -> Info

script convertM1Severities when ( $CurrentTrapDevice = "Meridian1" ) {
     function convertit() {
          if ($Severity=1){
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=2){
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=3){
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=4){
               $NormalizedSeverity:=Unknown;
          }else{ if ($Severity=5){
               $NormalizedSeverity:=Warning;
          }else{ if ($Severity=6){
               $NormalizedSeverity:=Cleared;
          }else{ if ($Severity=7){
               $NormalizedSeverity:=Undetermined;
          }else{
               $NormalizedSeverity:=Info;
          }}}}}}}
     }
     // -------------------------------------------------------------
     rule severity_conversion {
          if ($CurrentTrapDevice="Meridian1"){
               convertit();
          }
     }
}

// ============================================================================
//          Map severities from devices other than OTM and Meridian1
// ============================================================================
// 1 -> Critical; 2 -> Major; 3 -> Minor; 4 -> (CallPilot::Info, Warning); 5 -> (CallPilot::Unknown, Cleared); x
-> Undetermined

script convertSeverities when ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1") {

     function convertit() {
          if ($Severity=1) {
               $NormalizedSeverity:=Critical;
          }else{ if ($Severity=2){
               $NormalizedSeverity:=Major;
          }else{ if ($Severity=3){
               $NormalizedSeverity:=Minor;
          }else{ if ($Severity=4){
               if ($CurrentTrapDevice="CALL_PILOT"){
                    $NormalizedSeverity:=Info;
               }else{
                    $NormalizedSeverity:=Warning;
               }
          }else{ if ($Severity=5){
               if ($CurrentTrapDevice="CALL_PILOT"){
                    $NormalizedSeverity:=Unknown;
               }else{
                    $NormalizedSeverity:=Cleared;
               }
          }else{
               $NormalizedSeverity:=Undetermined;
          }}}}}
     }

     rule severity_conversion {
          if ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1") {
               convertit();
          }
     }
}
```

```
// *************************************************************************************
//                                 Assign $NameSpace
// *************************************************************************************

counter nsOtm              := 1; // Originated from an OTM
counter nsMeridian1        := 2;
counter nsCallPilot        := 3;
counter nsMeridianMail     := 4;
counter nsSl100            := 5;
counter nsPassport         := 6;
counter nsItg              := 7;
counter nsBravo            := 8;
counter nsIss7             := 9;
counter nsMdect            := 10;
counter nsSccs             := 11;
counter nsMeridianMailLink := 12;
counter nsGenericOrUnknown := 13;


script assignNameSpace {

    function ns() {
        if ($CurrentTrapDevice="OTM") {
            // Original $CurrentTrapDevice is retained
        }else{ if ( $CurrentTrapDevice = "Meridian1" ) {
            $NameSpace := nsMeridian1;
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" ) {
            $NameSpace := nsCallPilot;
        }else{ if ( $CurrentTrapDevice = "MMCS" ) {
            $NameSpace := nsMeridianMail;
        }else{ if ( $CurrentTrapDevice = "ITG"
            or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE"
            or $CurrentTrapDevice = "ITG_IP_PHONE" )
        {
            $NameSpace := nsItg;
        }else{ if ( $CurrentTrapDevice = "BRAVO" ) {
            $NameSpace := nsBravo;
        }else{ if ( $CurrentTrapDevice = "ISS7" ) {
            $NameSpace := nsIss7;
        }else{ if ( $CurrentTrapDevice = "MDECT" ) {
            $NameSpace := nsMdect;
        }else{ if ( $CurrentTrapDevice = "SCCS" ) {
            $NameSpace := nsSccs;
        }else{
            $NameSpace := nsGenericOrUnknown;
        }}}}}}}}}
    }

    rule ns1 {
        if (1) {
         ns();
        }
    }
}

// ****************************************************************************
//                            Console and Log Files
// ****************************************************************************

// ========================================================================
// This is a sample definition for using a log file.  All events sent
//   to this notification will be appended to the filename defined below.
//   Please note that Windows "long" file names are not supported.
// ========================================================================

notification file sample_file {
   filename:="c:\sample_log.txt";
}
```

```
script ConsoleAndLog {

    rule check_critical {
        if ( $CurrentTrapDevice = "Meridian1" and $NormalizedSeverity = Critical ) {
            // print event to console
            send( con,
                "--> Critical Meridian1 alarm received! ",
                $ErrorCode," - " ,                 // M1 error code
                $CurrentPCTime, " - ",             // Time that PC received the alarm
                $CurrentTrapSource," - " ,         // Name of this M1
                $DeviceTime," - " ,                // Timestamp from M1
                $Text," - ",                       // Text with error message
                $OperatorData                      // More text with error message
            );

            // append event to log file
            send(sample_file,"--> Critical M1 alarm received! ",
                $ErrorCode," - " ,                 // M1 error code
                $CurrentPCTime, " - ",             // Time that PC received the alarm
                $CurrentTrapSource," - " ,         // Name of this M1
                $DeviceTime," - " ,                // Timestamp from M1
                $Text," - ",                       // Text with error message
                $OperatorData                      // More text with error message
            );
        }
    }
}


// ****************************************************************************
//                          Numeric and Alpha Pagers
// ****************************************************************************

// ========================================================================
// This is a sample definition for using a numeric pager
//    To use, the phone number should be changed to your pager number
//    and the notification (as well as the references to it) should be
//    uncommented.
// ========================================================================

/*
notification npager sample_numeric_pager {
    phone:="9,555-1212";
}
*/

// ========================================================================
// This is a sample definition for using an alpha pager
//    To use, the phone number should be changed to your pager number,
//    your PIN number should be added, and the notification (as well
//    as the references to it) should be uncommented.
// ========================================================================

/*
notification apager sample_alpha_pager {
    phone:="9,555-1212";
    pin:="101565";
}
*/

script Pagers {
/*
    send( sample_alpha_pager, $CurrentTrapSource,":", $ErrorCode, "!" );
*/
}


//
// *******************************************************************************************************************
//                                  Forwarding Received Traps as OTM Traps to an Optivity server
```

```
//
*********************************************************************************************************

// ==========================================
//        Define SNMP Notifications
// ==========================================
notification snmp OtmOpenAlarm1 {
   address:="134.177.121.71";
   trap:="6.1";                 // Critical
}
notification snmp OtmOpenAlarm2 {
   address:="134.177.121.71";
   trap:="6.2";                 // Major
}
notification snmp OtmOpenAlarm3 {
   address:="134.177.121.71";
   trap:="6.3";                 // Minor
}
notification snmp OtmOpenAlarm4 {
   address:="134.177.121.71";
   trap:="6.4";                 // Warning
}
notification snmp OtmOpenAlarm5 {
   address:="134.177.121.71";
   trap:="6.5";                 // Info
}
notification snmp OtmOpenAlarm6 {
   address:="134.177.121.71";
   trap:="6.6";                 // Clear
}

// ====================================================================================================
//                                      Forward Alarms Script
// ====================================================================================================

script ForwardAlarms {

    // ---------------------------------------
    //      Forward Critical Alarms
    // ---------------------------------------
    function forwardCriticals() {
    if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    $AlarmSeqNum,        // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",    $NormalizedSeverity, // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,         // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,            // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,   // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,  // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,      // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,        // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text               // Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "Meridian1"
            or $CurrentTrapDevice = "MMCS")
         {
            send( OtmOpenAlarm1,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",    $AlarmSeqNum,        // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",    $NormalizedSeverity, // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,         // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,  // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,   // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource, // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,      // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,        // Problem Isolation Data2
```

```
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text              // Problem Isolation Data3
            );
      }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
            or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
            or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP")
      {
            send( OtmOpenAlarm1,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,       // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                  //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,         Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,         // Error Code
                  //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",               // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,   // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource, // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,      // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",               // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                // Problem Isolation Data3
            );
      }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm1,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,       // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                  //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,         Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",               // Error Code
                  //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",               // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,   // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource, // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,      // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",               // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                // Problem Isolation Data3
            );
      }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm1,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                  // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                  //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,         Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,         // Error Code
                  //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
                  "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",               // System
                  "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,   // System's Component
                  "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource, // Originating Agent
                  "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,      // Problem Isolation Data1
                  "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,              // Problem Isolation Data2
                  "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData         // Problem Isolation Data3
            );
      }}}}}
}

rule forward_criticals {
      if ( $NormalizedSeverity = Critical ) {
            forwardCriticals();
      }
}

// -------------------------------------
//        Forward Major Alarms
// -------------------------------------
function forwardMajors() {
      if ( $CurrentTrapDevice = "OTM" ) {
            send( OtmOpenAlarm2,
                  "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,       // Alarm's Seq Number
                  "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,        // Date and Time
                  "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                  //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,         Name Space
                  "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,         // Error Code
                  //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,              Site
```

```
                "1.3.6.1.4.1.562.50.1.2.7.0",   "OctetString", $System,             // System
                "1.3.6.1.4.1.562.50.1.2.8.0",   "OctetString", $SystemComponent,    // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",   "OctetString", $OriginatingAgent,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0",  "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0",  "OctetString", $ExpertData,          // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0",  "OctetString", $Text                 // Problem Isolation Data3
        );
}else{ if ( $CurrentTrapDevice = "Meridian1"
        or $CurrentTrapDevice = "MMCS" )
 {
        send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",   "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",   "OctetString", $DeviceTime,          // Date And Time
                "1.3.6.1.4.1.562.50.1.2.3.0",   "Integer",     $NormalizedSeverity,  // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",   "OctetString", $ErrorCode,           // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                Site
                "1.3.6.1.4.1.562.50.1.2.7.0",   "OctetString", $ComponentAddress,    // System
                "1.3.6.1.4.1.562.50.1.2.8.0",   "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",   "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0",  "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0",  "OctetString", $ExpertData,          // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0",  "OctetString", $Text                 // Problem Isolation Data3
        );
}else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
        or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
        or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP")
{
        send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",   "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",   "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",   "Integer",     $NormalizedSeverity,  // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",   "OctetString", $ErrorCode,           // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                Site
                "1.3.6.1.4.1.562.50.1.2.7.0",   "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",   "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",   "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0",  "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0",  "OctetString", "na"                  // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0",  "OctetString", "na"                  // Problem Isolation Data3
        );
}else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
        send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",   "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",   "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",   "Integer",     $NormalizedSeverity,  // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",   "OctetString", "na",                 // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                Site
                "1.3.6.1.4.1.562.50.1.2.7.0",   "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",   "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",   "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0",  "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0",  "OctetString", "na",                 // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0",  "OctetString", "na"                  // Problem Isolation Data3
        );
}else{ if ( $CurrentTrapDevice = "MMAIL" ) {
        send( OtmOpenAlarm2,
                "1.3.6.1.4.1.562.50.1.2.1.0",   "Integer",     0,                    // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",   "OctetString", $DeviceTime,          // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",   "Integer",     $NormalizedSeverity,  // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0", "Integer",     $NameSpace,           Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",   "OctetString", $ErrorCode,           // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0", "OctetString", $Site,                Site
                "1.3.6.1.4.1.562.50.1.2.7.0",   "OctetString", "na",                 // System
                "1.3.6.1.4.1.562.50.1.2.8.0",   "OctetString", $SystemComponent,     // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",   "OctetString", $CurrentTrapSource,   // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0",  "OctetString", $OperatorData,        // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0",  "OctetString", $Text,                // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0",  "OctetString", $ExpertData            // Problem Isolation Data3
```

```
        );
    }}}}}
}

rule forward_majors {
    if ( $NormalizedSeverity = Major ) {
        forwardMajors();
    }
}

// ---------------------------------------
//        Forward Minor Alarms
// ---------------------------------------
function forwardMinors() {
if ( $CurrentTrapDevice = "OTM" ) {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,   // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,         // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "Meridian1"
        or $CurrentTrapDevice = "MMCS")
     {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date And Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,   // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,         // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
        or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
        or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP")
    {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                 // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
        send( OtmOpenAlarm3,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error Code
```

```
           //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,                    Site
           "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                     // System
           "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,         // System's Component
           "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,       // Originating Agent
           "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,            // Problem Isolation Data1
           "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                     // Problem Isolation Data2
           "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                      // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
        send( OtmOpenAlarm3,
           "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                        // Alarm's Seq Number
           "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,              // Date and Time
           "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
           //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,               Name Space
           "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,               // Error Code
           //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,                    Site
           "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                     // System
           "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,         // System's Component
           "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,       // Originating Agent
           "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,            // Problem Isolation Data1
           "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,                    // Problem Isolation Data2
           "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData               // Problem Isolation Data3
        );
    }}}}}
}

rule forward_minors {
    if ( $NormalizedSeverity = Minor ) {
        forwardMinors();
    }
}

// --------------------------------------
//       Forward Warning Alarms
// --------------------------------------
function forwardWarnings() {
if ( $CurrentTrapDevice = "OTM" ) {
        send( OtmOpenAlarm4,
           "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
           "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date and Time
           "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
           //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,               Name Space
           "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,               // Error Code
           //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,                    Site
           "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,                  // System
           "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,         // System's Component
           "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,        // Originating Agent
           "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,            // Problem Isolation Data1
           "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,              // Problem Isolation Data2
           "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                     // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "Meridian1"
        or $CurrentTrapDevice = "MMCS")
     {
        send( OtmOpenAlarm4,
           "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,         // Alarm's Seq Number
           "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,          // Date And Time
           "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity,  // Severity
           //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,               Name Space
           "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,               // Error Code
           //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,                    Site
           "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,        // System
           "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,         // System's Component
           "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,       // Originating Agent
           "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,            // Problem Isolation Data1
           "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,              // Problem Isolation Data2
           "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                     // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
        or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
        or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP")
```

```
        {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                 // Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                 // Problem Isolation Data3
            );
        }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
            send( OtmOpenAlarm4,
                "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                   // Alarm's Seq Number
                "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
                "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
                //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
                "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
                //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
                "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
                "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
                "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
                "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
                "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,               // Problem Isolation Data2
                "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData          // Problem Isolation Data3
            );
        }}}}}
}

rule forward_warnings {
    if ( $NormalizedSeverity = Warning ) {
        forwardWarnings();
    }
}


// --------------------------------------
//        Forward Info Alarms
// --------------------------------------
function forwardInfos() {
    if ( $CurrentTrapDevice = "OTM" ) {
        send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $System,             // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $OriginatingAgent,   // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
```

```
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,        // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "Meridian1"
         or $CurrentTrapDevice = "MMCS")
     {
        send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date And Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", $ComponentAddress,   // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $ExpertData,         // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $Text                // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "ITG" or $CurrentTrapDevice = "ITG_ISDN_TRK"
         or $CurrentTrapDevice = "ITG_IP_LINE" or $CurrentTrapDevice = "ITG_IP_PHONE"
         or $CurrentTrapDevice = "ISS7" or $CurrentTrapDevice = "BRAVO" or $CurrentTrapDevice = "MMCS_AP")
     {
        send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                 // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "CALL_PILOT" or $CurrentTrapDevice = "SCCS" ) {
        send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     $AlarmSeqNum,        // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", "na",                // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", "na",                // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", "na"                 // Problem Isolation Data3
        );
    }else{ if ( $CurrentTrapDevice = "MMAIL" ) {
        send( OtmOpenAlarm5,
            "1.3.6.1.4.1.562.50.1.2.1.0",  "Integer",     0,                   // Alarm's Seq Number
            "1.3.6.1.4.1.562.50.1.2.2.0",  "OctetString", $DeviceTime,         // Date and Time
            "1.3.6.1.4.1.562.50.1.2.3.0",  "Integer",     $NormalizedSeverity, // Severity
            //"1.3.6.1.4.1.562.50.1.2.4.0","Integer",     $NameSpace,          // Name Space
            "1.3.6.1.4.1.562.50.1.2.5.0",  "OctetString", $ErrorCode,          // Error Code
            //"1.3.6.1.4.1.562.50.1.2.6.0","OctetString", $Site,               // Site
            "1.3.6.1.4.1.562.50.1.2.7.0",  "OctetString", "na",                // System
            "1.3.6.1.4.1.562.50.1.2.8.0",  "OctetString", $SystemComponent,    // System's Component
            "1.3.6.1.4.1.562.50.1.2.9.0",  "OctetString", $CurrentTrapSource,  // Originating Agent
            "1.3.6.1.4.1.562.50.1.2.12.0", "OctetString", $OperatorData,       // Problem Isolation Data1
            "1.3.6.1.4.1.562.50.1.2.13.0", "OctetString", $Text,               // Problem Isolation Data2
            "1.3.6.1.4.1.562.50.1.2.14.0", "OctetString", $ExpertData          // Problem Isolation Data3
        );
    }}}}}
}
```

```
    rule forward_infos {
        if ( $NormalizedSeverity = Info ) {
            forwardInfos();
        }
    }
} // end script ForwardAlarms
```

# Sample Alarm Wizard script file

The content of the file *sample_wizard_script.txt* appears below:

```
/*

   This script file was generated using the OTM-M script wizard

   WARNING : DO NOT EDIT THIS FILE MANUALY, THE WIZARD WOULD
   NOT BE ABLE TO HANDLE IT ANY MORE.

*/

///start
/* Global Severity levels definition based on Meridian1 alarms */

counter Undetermined:= 0;
counter Critical:= 1;
counter Major:= 2;
counter Minor:= 3;
counter Warning:= 4;
counter Info:= 5;
counter Cleared:= 6;
counter Unknown:= 7;

/* $NormalizedSeverity is a global severity value that is normalized to OTM severity values.
   It represents the unified value across different devices. */
counter $NormalizedSeverity   := 0;



/*   This script assign the global variable $NormalizedSeverity
     with the value of $AlarmServerity when current trap device
     is of OTM type. */

script AssignOTMSeverities when ($CurrentTrapDevice="OTM")
{
     function assignit()
     {
         //send(con, "$AlarmServerity=", $AlarmSeverity);
         if ($AlarmSeverity=Critical)
         {
             $NormalizedSeverity:=Critical;
         }
         else
         {
             if ($AlarmSeverity=Major)
             {
                 $NormalizedSeverity:=Major;
             }
             else
             {
                 if ($AlarmSeverity=Minor)
                 {
                     $NormalizedSeverity:=Minor;
                 }
                 else
                 {
                     if ($AlarmSeverity=Info)
                     {
                         $NormalizedSeverity:=Info;
                     }
                     else
                     {
                         if ($AlarmSeverity=Unknown)
                         {
                             $NormalizedSeverity:=Unknown;
                         }
```

```
                                else
                                {
                                    if ($AlarmSeverity=Warning)
                                    {
                                        $NormalizedSeverity:=Warning;
                                    }
                                    else
                                    {
                                        if ($AlarmSeverity=Cleared)
                                        {
                                            $NormalizedSeverity:=Cleared;
                                        }
                                        else
                                        {
                                            $NormalizedSeverity:=Undetermined;
                                        }
                                    }
                                }
                            }
                        }
                    }
                }
            }

    rule assign_severity {
        if ($CurrentTrapDevice="OTM")
        {
            assignit();
        }
    }

} // end script AssignOTMSeverities


script convertSeverities when ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1")
{
    function convertit()
    {
        //send(con, "$AlarmServerity=", $AlarmSeverity);
        if ($AlarmSeverity=1)
        {
            $NormalizedSeverity:=Critical;
        }
        else
        {
            if ($AlarmSeverity=2)
            {
                $NormalizedSeverity:=Major;
            }
            else
            {
                if ($AlarmSeverity=3)
                {
                    $NormalizedSeverity:=Minor;
                }
                else
                {
                    if ($AlarmSeverity=4)
                    {
                        if ($CurrentTrapDevice="CALL_PILOT")
                        {
                            $NormalizedSeverity:=Info;
                        }
                        else
                        {
                            $NormalizedSeverity:=Warning;
                        }
                    }
                    else
                    {
                        if ($AlarmSeverity=5)
```

```
                        {
                            if ($CurrentTrapDevice="CALL_PILOT")
                            {
                                $NormalizedSeverity:=Unknown;
                            }
                            else
                            {
                                $NormalizedSeverity:=Cleared;
                            }
                        }
                        else
                        {
                            $NormalizedSeverity:=Undetermined;
                        }
                    }
                }
            }
        }
    }

    rule severity_conversion {
        if ($CurrentTrapDevice!="OTM" and $CurrentTrapDevice!="Meridian1")
        {
            convertit();
        }
    }

} // end script convertSeverities


script convertM1Severities when ($CurrentTrapDevice="Meridian1")
{
    function convertit()
    {
        //send(con, "$AlarmServerity=", $AlarmSeverity);
        if ($AlarmSeverity=1)
        {
            $NormalizedSeverity:=Minor;
        }
        else
        {
            if ($AlarmSeverity=2)
            {
                $NormalizedSeverity:=Major;
            }
            else
            {
                if ($AlarmSeverity=3)
                {
                    $NormalizedSeverity:=Critical;
                }
                else
                {
                    if ($AlarmSeverity=4)
                    {
                        $NormalizedSeverity:=Unknown;
                    }
                    else
                    {
                        if ($AlarmSeverity=5)
                        {
                            $NormalizedSeverity:=Warning;
                        }
                        else
                        {
                            if ($AlarmSeverity=6)
                            {
                                $NormalizedSeverity:=Cleared;
                            }
                            else
                            {
```

```
                                    if ($AlarmSeverity=7)
                                    {
                                           $NormalizedSeverity:=Undetermined;
                                    }
                                    else
                                    {
                                           $NormalizedSeverity:=Info;
                                    }
                                }
                            }
                        }
                    }
                }
            }
        }

        rule severity_conversion {
            if ($CurrentTrapDevice="Meridian1")
            {
                convertit();
            }
        }

} // end script convertM1Severities

///end

/* Email notification definition */
  notification email ne_samplemail {
    from:="test@company.com";
    address:="name@company.com";
    server:="0.0.0.0";
 }

/* Email notification definition */
  notification email ne_serge {
    from:="xyz@company.com";
    address:="serge@company.com";
    server:="15.12.2.3";
 }

/* Email notification definition */
  notification email ne_adrien {
    from:="xyz@company.com";
    address:="x@company.com";
    server:="47.82.32.184";
 }


/* Numeric pager notification definition */
  notification npager nn_samplenpag {
    phone:="9,555-555-5555";
 }


/* Alphanumeric pager notification definition */
  notification apager na_sampleapag {
    phone:="9,555-555-5555";
    pin:="0000";
  }


/* Up-stream manager notification definition */
  notification snmp ns_samplesnmp {
    address:="114.21.25.149";
    trap:="6.10";
  }


/* Modem notification definition */
  notification modem nm_samplemodm {
```

```
    phone:="9,555-555-5555";
 }


/* File notification definition */
  notification file nf_samplefile {
    filename:="c:\otm_log.txt";
  }



/* Script definition */
script GeneratedScript {

  /* Notification Counters definition */
    counter count_ne_samplemail := 0;
    counter count_ne_serge := 0;
    counter count_ne_adrien := 0;
    counter count_nn_samplenpag := 0;
    counter count_na_sampleapag := 0;
    counter count_ns_samplesnmp := 0;
    counter count_ns_samplesnmp_Meridian1 := 0;
    counter count_ns_samplesnmp_MMCS := 0;
    counter count_ns_samplesnmp_OTM := 0;
    counter count_ns_samplesnmp_ITG := 0;
    counter count_ns_samplesnmp_ITG_ISDN_TRK := 0;
    counter count_ns_samplesnmp_ITG_IP_LINE := 0;
    counter count_ns_samplesnmp_ITG_IP_PHONE := 0;
    counter count_ns_samplesnmp_ISS7 := 0;
    counter count_ns_samplesnmp_BRAVO := 0;
    counter count_ns_samplesnmp_BS450 := 0;
    counter count_ns_samplesnmp_CALL_PILOT := 0;
    counter count_ns_samplesnmp_SCCS := 0;
    counter count_ns_samplesnmp_MMCS_AP := 0;
    counter count_ns_samplesnmp_MDECT := 0;
    counter count_nm_samplemodm := 0;
    counter count_nf_samplefile := 0;

  /* Severity levels definitions already defined as global counters */

  /* Function to get Severity level understandable */
    function string AlarmLevelToString (counter level) {
        string result;
        if (level=Minor) {
            result := "Minor";
        } else {
            if (level=Major) {
                result := "Major";
            } else {
                if (level=Critical) {
                    result := "Critical";
                } else {
                    if (level=Unknown) {
                        result := "Unknown";
                    } else {
                        if (level=Warning) {
                            result := "Warning";
                        } else {
                            if (level=Cleared) {
                                result := "Cleared";
                            } else {
                              if (level=Info) {
                                  result := "Info";
                              } else {
                                    result := "Undetermined";
                              }
                            }
                        }
                    }
                }
            }
        }
```

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```
        }
        return(result);
    }

/* Function(s) definition */
  function counter fn_ne_samplemail (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=3) {
      send(ne_samplemail,
                $CurrentAlarmTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $CurrentAlarmErrorCode, ".");
      n:=0;
     }
    return(n);
  }

  function counter fn_ne_serge (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=2) {
      send(ne_serge,
                $CurrentAlarmTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $CurrentAlarmErrorCode, ".");
      n:=0;
     }
    return(n);
  }

  function counter fn_ne_adrien (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=1) {
      send(ne_adrien,
                $CurrentAlarmTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $CurrentAlarmErrorCode, ".");
      n:=0;
     }
    return(n);
  }

  function counter fn_nn_samplenpag (counter n) {
    n:=n+1;
    if (n=1) {
      send(nn_samplenpag,"12345");
      n:=0;
     }
    return(n);
  }

  function counter fn_na_sampleapag (counter n) {
    string severity_level;
    severity_level := AlarmLevelToString($NormalizedSeverity);
    n:=n+1;
    if (n=1) {
      send(na_sampleapag,
                $CurrentTrapSource," : ",severity_level," ",
                $CurrentTrapMajor,".",$CurrentTrapMinor);
      n:=0;
     }
    return(n);
  }

  function counter fn_ns_samplesnmp_Meridian1 (counter n) {
    n:=n+1;
```

```
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.4.1.562.3.3.7.1.0","Integer",$CurrentAlarmSeqNum,
          "1.3.6.1.4.1.562.3.3.7.2.0","OctetString",$CurrentAlarmTime,
          "1.3.6.1.4.1.562.3.3.7.3.0","Integer",$AlarmSeverity,
          "1.3.6.1.4.1.562.3.3.7.4.0","OctetString",$CurrentAlarmErrorCode,
          "1.3.6.1.4.1.562.3.3.7.5.0","OctetString",$CurrentAlarmComponentId,
          "1.3.6.1.4.1.562.3.3.7.6.0","OctetString",$CurrentAlarmComponentAddress,
          "1.3.6.1.4.1.562.3.3.7.7.0","OctetString",$CurrentAlarmDescriptiveText,
          "1.3.6.1.4.1.562.3.3.7.8.0","OctetString",$CurrentAlarmOperatorData,
          "1.3.6.1.4.1.562.3.3.7.9.0","OctetString",$CurrentAlarmExpertData,
          "1.3.6.1.4.1.562.3.3.7.10.0","OctetString",$CurrentAlarmCounts);
      n:=0;
   }
   return(n);
}

 function counter fn_ns_samplesnmp_MMCS (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.4.1.562.3.3.7.1.0","Integer",$CurrentAlarmSeqNum,
          "1.3.6.1.4.1.562.3.3.7.2.0","OctetString",$CurrentAlarmTime,
          "1.3.6.1.4.1.562.3.3.7.3.0","Integer",$AlarmSeverity,
          "1.3.6.1.4.1.562.3.3.7.4.0","OctetString",$CurrentAlarmErrorCode,
          "1.3.6.1.4.1.562.3.3.7.5.0","OctetString",$CurrentAlarmComponentId,
          "1.3.6.1.4.1.562.3.3.7.6.0","OctetString",$CurrentAlarmComponentAddress,
          "1.3.6.1.4.1.562.3.3.7.7.0","OctetString",$CurrentAlarmDescriptiveText,
          "1.3.6.1.4.1.562.3.3.7.8.0","OctetString",$CurrentAlarmOperatorData,
          "1.3.6.1.4.1.562.3.3.7.9.0","OctetString",$CurrentAlarmExpertData,
          "1.3.6.1.4.1.562.3.3.7.10.0","OctetString",$CurrentAlarmCounts);
      n:=0;
   }
   return(n);
}

 function counter fn_ns_samplesnmp_OTM (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.4.1.562.50.1.2.1.0","Integer",$CurrentAlarmSeqNum,
          "1.3.6.1.4.1.562.50.1.2.2.0","OctetString",$CurrentAlarmTime,
          "1.3.6.1.4.1.562.50.1.2.3.0","Integer",$AlarmSeverity,
          "1.3.6.1.4.1.562.50.1.2.4.0","Integer",$AlarmNameSpace,
          "1.3.6.1.4.1.562.50.1.2.5.0","OctetString",$CurrentAlarmErrorCode,
          "1.3.6.1.4.1.562.50.1.2.6.0","OctetString",$AlarmSite,
          "1.3.6.1.4.1.562.50.1.2.7.0","OctetString",$AlarmSystem,
          "1.3.6.1.4.1.562.50.1.2.8.0","OctetString",$AlarmSystemComponent,
          "1.3.6.1.4.1.562.50.1.2.9.0","Integer",$AlarmOriginatingAgent,
          "1.3.6.1.4.1.562.50.1.2.12.0","OctetString",$CurrentAlarmOperatorData,
          "1.3.6.1.4.1.562.50.1.2.13.0","OctetString",$CurrentAlarmExpertData,
          "1.3.6.1.4.1.562.50.1.2.14.0","OctetString",$CurrentAlarmDescriptiveText);
      n:=0;
   }
   return(n);
}

 function counter fn_ns_samplesnmp_ITG (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.2.0","OctetString",$ComponentName,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.3.0","OctetString",$EventTime,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.4.0","Integer",$ActiveListStatus,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.5.0","Integer",$AlarmSeverity,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.6.0","Integer",$AlarmType,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.7.0","Integer",$ProbableCause,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
          "1.3.6.1.4.1.562.3.11.1.4.1.7.9.0","OctetString",$CommentData);
      n:=0;
   }
```

```
      return(n);
}

  function counter fn_ns_samplesnmp_ITG_ISDN_TRK (counter n) {
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.2.0","OctetString",$ComponentName,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.3.0","OctetString",$EventTime,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.4.0","Integer",$ActiveListStatus,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.5.0","Integer",$AlarmSeverity,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.6.0","Integer",$AlarmType,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.7.0","Integer",$ProbableCause,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
            "1.3.6.1.4.1.562.3.11.2.4.1.7.9.0","OctetString",$CommentData);
       n:=0;
    }
    return(n);
}

  function counter fn_ns_samplesnmp_ITG_IP_LINE (counter n) {
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.2.0","OctetString",$ComponentName,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.3.0","OctetString",$EventTime,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.4.0","Integer",$ActiveListStatus,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.5.0","Integer",$AlarmSeverity,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.6.0","Integer",$AlarmType,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.7.0","Integer",$ProbableCause,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
            "1.3.6.1.4.1.562.3.11.3.4.1.7.9.0","OctetString",$CommentData);
       n:=0;
    }
    return(n);
}

  function counter fn_ns_samplesnmp_ITG_IP_PHONE (counter n) {
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.2.0","OctetString",$ComponentName,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.3.0","OctetString",$EventTime,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.4.0","Integer",$ActiveListStatus,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.5.0","Integer",$AlarmSeverity,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.6.0","Integer",$AlarmType,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.7.0","Integer",$ProbableCause,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
            "1.3.6.1.4.1.562.3.11.5.4.1.7.9.0","OctetString",$CommentData);
       n:=0;
    }
    return(n);
}

  function counter fn_ns_samplesnmp_ISS7 (counter n) {
    n:=n+1;
    if (n=3) {
       send(ns_samplesnmp,
            "1.3.6.1.4.1.562.27.2.1.7.2.0","OctetString",$ComponentName,
            "1.3.6.1.4.1.562.27.2.1.7.3.0","OctetString",$EventTime,
            "1.3.6.1.4.1.562.27.2.1.7.4.0","Integer",$ActiveListStatus,
            "1.3.6.1.4.1.562.27.2.1.7.5.0","Integer",$AlarmSeverity,
            "1.3.6.1.4.1.562.27.2.1.7.6.0","Integer",$AlarmType,
            "1.3.6.1.4.1.562.27.2.1.7.7.0","Integer",$ProbableCause,
            "1.3.6.1.4.1.562.27.2.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
            "1.3.6.1.4.1.562.27.2.1.7.9.0","OctetString",$CommentData);
       n:=0;
    }
    return(n);
}
```

```
 function counter fn_ns_samplesnmp_BRAVO (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.2.0","OctetString",$ComponentName,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.3.0","OctetString",$EventTime,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.4.0","Integer",$ActiveListStatus,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.5.0","Integer",$AlarmSeverity,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.6.0","Integer",$AlarmType,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.7.0","Integer",$ProbableCause,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.8.0","OctetString",$CurrentAlarmErrorCode,
           "1.3.6.1.4.1.562.3.11.4.4.1.7.9.0","OctetString",$CommentData);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_BS450 (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
           "1.3.6.1.2.1.2.2.1.1.1","Integer",$Port1,
           "1.3.6.1.2.1.2.2.1.1.2","Integer",$Port2,
           "1.3.6.1.2.1.2.2.1.1.3","Integer",$Port3,
           "1.3.6.1.2.1.2.2.1.1.4","Integer",$Port4,
           "1.3.6.1.2.1.2.2.1.1.5","Integer",$Port5,
           "1.3.6.1.2.1.2.2.1.1.6","Integer",$Port6,
           "1.3.6.1.2.1.2.2.1.1.7","Integer",$Port7,
           "1.3.6.1.2.1.2.2.1.1.8","Integer",$Port8,
           "1.3.6.1.2.1.2.2.1.1.9","Integer",$Port9,
           "1.3.6.1.2.1.2.2.1.1.10","Integer",$Port10,
           "1.3.6.1.2.1.2.2.1.1.11","Integer",$Port11,
           "1.3.6.1.2.1.2.2.1.1.12","Integer",$Port12,
           "1.3.6.1.2.1.2.2.1.1.13","Integer",$Port13,
           "1.3.6.1.2.1.2.2.1.1.14","Integer",$Port14,
           "1.3.6.1.2.1.2.2.1.1.15","Integer",$Port15,
           "1.3.6.1.2.1.2.2.1.1.16","Integer",$Port16,
           "1.3.6.1.2.1.2.2.1.1.17","Integer",$Port17,
           "1.3.6.1.2.1.2.2.1.1.18","Integer",$Port18,
           "1.3.6.1.2.1.2.2.1.1.19","Integer",$Port19,
           "1.3.6.1.2.1.2.2.1.1.20","Integer",$Port20,
           "1.3.6.1.2.1.2.2.1.1.21","Integer",$Port21,
           "1.3.6.1.2.1.2.2.1.1.22","Integer",$Port22,
           "1.3.6.1.2.1.2.2.1.1.23","Integer",$Port23,
           "1.3.6.1.2.1.2.2.1.1.24","Integer",$Port24);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_CALL_PILOT (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.2.0","OctetString",$nbFltAlarmTimeStamp,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.3.0","Integer",$nbFltAlarmEventCode,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.4.0","Integer",$nbFltAlarmEventType,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.5.0","Integer",$AlarmSeverity,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.8.0","OctetString",$nbFltAlarmOriginator,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.9.0","OctetString",$nbFltAlarmDescription);
      n:=0;
    }
   return(n);
}

 function counter fn_ns_samplesnmp_SCCS (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.2.0","OctetString",$nbFltAlarmTimeStamp,
           "1.3.6.1.4.1.562.3.8.1.5.2.1.3.0","Integer",$nbFltAlarmEventCode,
```

```
             "1.3.6.1.4.1.562.3.8.1.5.2.1.4.0","Integer",$nbFltAlarmEventType,
             "1.3.6.1.4.1.562.3.8.1.5.2.1.5.0","Integer",$AlarmSeverity,
             "1.3.6.1.4.1.562.3.8.1.5.2.1.8.0","OctetString",$nbFltAlarmOriginator,
             "1.3.6.1.4.1.562.3.8.1.5.2.1.9.0","OctetString",$nbFltAlarmDescription);
      n:=0;
    }
    return(n);
}

 function counter fn_ns_samplesnmp_MMCS_AP (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
            "1.3.6.1.4.1.562.27.2.1.7.2.0","OctetString",$ComponentName,
            "1.3.6.1.4.1.562.27.2.1.7.3.0","OctetString",$EventTime,
            "1.3.6.1.4.1.562.27.2.1.7.4.0","Integer",$ActiveListStatus,
            "1.3.6.1.4.1.562.27.2.1.7.5.0","Integer",$AlarmSeverity,
            "1.3.6.1.4.1.562.27.2.1.7.6.0","Integer",$AlarmType,
            "1.3.6.1.4.1.562.27.2.1.7.7.0","Integer",$ProbableCause,
            "1.3.6.1.4.1.562.27.2.1.7.8.0","OctetString",$NtpIndex,
            "1.3.6.1.4.1.562.27.2.1.7.9.0","OctetString",$CommentData);
      n:=0;
    }
    return(n);
}

 function counter fn_ns_samplesnmp_MDECT (counter n) {
   n:=n+1;
   if (n=3) {
      send(ns_samplesnmp,
            "1.3.6.1.4.1.1417.1.1.1.5.0","OctetString",$CurrentAlarmTime,
            "1.3.6.1.4.1.1417.1.1.3.2.1.2.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.3.1.4.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.3.1.8.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.9.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.5.1.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.7.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.2.1.6.0","OctetString",$CurrentAlarmOperatorData,
            "1.3.6.1.4.1.1417.1.1.3.1.0","OctetString",$CurrentAlarmErrorCode);
      n:=0;
    }
    return(n);
}

 function counter fn_nm_samplemodm (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      send(nm_samplemodm,
                $CurrentAlarmTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $CurrentAlarmErrorCode, ".");
      n:=0;
    }
    return(n);
}

 function counter fn_nf_samplefile (counter n) {
   string severity_level;
   severity_level := AlarmLevelToString($NormalizedSeverity);
   n:=n+1;
   if (n=1) {
      send(nf_samplefile,
                $CurrentAlarmTime,": Device ",$CurrentTrapSource,
                " generated a ",$CurrentTrapMajor,".",$CurrentTrapMinor,
                " trap with severity level: ",severity_level,", ErrorCode: ", $CurrentAlarmErrorCode, ".");
      n:=0;
    }
    return(n);
}
```

```
  /* Rule definition */
    rule r_samplerul2 {
      if (
              (     ($CurrentTrapDevice="ITG")
              )
        ) {
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }

  /* Rule definition */
    rule r_simplesamp {
      if (
              (     ($CurrentTrapDevice="Meridian1")
              )
          and (     ($NormalizedSeverity=Critical)
              )
        ) {
          count_ne_adrien:=fn_ne_adrien(count_ne_adrien);
          count_nf_samplefile:=fn_nf_samplefile(count_nf_samplefile);
      }
      else {
      }
    }

} /* End of GeneratedScript script */


/* End of file */
```