Lucent Technologies
Bell Labs Innovations

WaveStar® Transport Management System (TMS)

Release 1.0

Administration Guide

365-309-800
Issue 1
July 2001

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WaveStar® Transport Management System (TMS)
Release 1.0
Administration Guide
365-309-800 Issue 1 July 2001

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Quality of translation	☐	☐	☐	☐	☐	☐
Appearance	☐	☐	☐	☐	☐	☐

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About this information product

Purpose

This chapter is a preface that provides an overview of this information product.

The purpose of this Administration Guide is to instruct users how to administer *WaveStar*® Transport Management System (TMS) Release 1.0.

Reason for reissue

This Administration Guide, Issue 1, is a new document that supports a new product, WaveStar TMS, Release 1.0.

Safety labels

This information product does not use safety labels.

Intended audience

This guide is written primarily for operations personnel who administer WaveStar TMS.

How to use this information product

This section provides information to help users of this information product.

Chapter descriptions

The following table describes the information in each chapter of this document.

Section	Title	Description
Preface	About this information product	Describes this document's purpose and intended audience, how to use the document, and how to comment on it.
Chapter 1	Chapter 1, "Administration overview"	Provides an overview of the administration process.
Chapter 2	Chapter 2, "Platform Administration"	Contains platform-related tasks that are performed on HP servers.
Chapter 3	Chapter 3, "Security Management"	Describes how to control access to the WaveStar TMS.
Chapter 4	Chapter 4, "System administration"	Describes how to perform system administration tasks.
Chapter 5	Chapter 5, "Provisioning environment setup"	Describes how to perform intra-domain provisioning and inter-domain provisioning.
Chapter 6	Chapter 6, "Reliability and service recovery "	Provides instructions on how to perform backups and recover from system failures.
Chapter 7	Chapter 7, "Off-line Tool Concepts"	Describes the off-line tools.
Chapter 8	Chapter 8, "Management communication"	Includes database synchronization and LAN status tasks.
Chapter 9	Chapter 9, "Trouble clearing"	Contains trouble clearing tasks.

Section	Title	Description
Chapter 10	Chapter 10, “Patch and Software Upgrade Tasks”	Describes how to install a patch for WaveStar TMS.
Appendix	Appendix A, “Installation Parameters”	Describes the WaveStar TMS system parameters.
Index	Index	Enables the user to quickly find information on specific topics.

Conventions used

This document uses the following typographical conventions to distinguish between computer input and output.

- When describing the WaveStar TMS software, fields in windows and field entries are identified with **this font**.
- When describing the *UNIX*™ environment, text and numbers that the user inputs to the computer are identified with boldface type.
- In the UNIX environment, text and numbers that the computer outputs to the user are identified with monospace type.

Related documentation

This information product is part of a set of documents that supports WaveStar TMS.

List of documents

The document set that supports WaveStar TMS includes:

1. *WaveStar TMS Administration Guide*, (365-309-800) - instructs users on how to administer WaveStar TMS and the network. This document includes tasks and conceptual information.
2. *WaveStar TMS Provisioning Guide*, (365-309-801) - instructs users how to use WaveStar TMS to provision and manage a network.
   This document includes tasks and conceptual information.

On-line documentation

An on-line HTML version of theWaveStar TMS document set is integrated into the product software.

Screen help

This release of WaveStar TMS does not include screen help for each window.

Additional documents

The document set that supports WaveStar Network Management System (NMS) also provides valuable information for the users of WaveStar TMS. The document set that supports WaveStar NMS includes:

1. *WaveStar NMS Getting Started Guide,* (365-309-240) - provides information needed when you are learning how to use the WaveStar NMS software. It describes how to start and stop WaveStar NMS, how to use the software, and how to interpret the graphical user interface.
   This document includes tasks and conceptual information.
2. *WaveStar NMS Applications and Planning Guide,* (365-309-236) - describes the WaveStar NMS features and applications, provides a product description and the hardware platforms for the product, and describes system planning and engineering, ordering, and product support.
   This document contains conceptual information only.
3. *WaveStar NMS Administration Guide,* (365-309-239) - instructs users on how to administer WaveStar NMS and the network.
   This document includes tasks and conceptual information.
4. *WaveStar NMS Maintenance Guide,* (365-309-238) - instructs users on how to maintain WaveStar NMS and the network.
   This document includes tasks and conceptual information.
5. *WaveStar NMS Provisioning Guide,* (365-309-237) - instructs users how to use WaveStar NMS to provision and manage a network.
   This document includes tasks and conceptual information.

Glossary

The *WaveStar NMS Administration Guide* contains a glossary that will be helpful to users of WaveStar TMS.

How to comment

Customer satisfaction is extremely important to Lucent Technologies. All users are encouraged to provide feedback on the WaveStar TMS information products.

A customer comment form appears immediately after the title page of this document. Please fill out the form and submit is as instructed on the form.

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1 Administration overview

Overview

Purpose

This chapter provides an overview of the WaveStar Transport Management System (TMS) administration process.

Important Note

This document covers the administrative operations on WaveStar TMS.

In order to do so, this document contains two types of chapters:

- *Task* chapters describe administration tasks (that is, step-by-step instructions).
- *Conceptual* chapters contain detailed information related to the tasks.

Task chapters are located in the front of the document; conceptual chapters follow the task chapters.

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What is administration?

Introduction

The administration process provides the following type of support to WaveStar TMS and the network:

- Platform support
- Security management support
- System administration support
- Provisioning support
- Reliability and service recovery
- Off-line tools support
- Management communication support
- Trouble clearing support
- Patch and software upgrade support

Platform support

Platform support includes tasks associated with HP servers.

Security management support

Security management support includes tasks associated with how to add and delete user IDs and profiles.

System administration support

System administration support includes tasks associated with administering the WaveStar TMS application.

Provisioning support

Provisioning support includes tasks used to initialize the TMS database with digital links and circuits. This includes provisioning inter-domain digital links and inter- and intra-domain circuits.

Reliability and service recovery support

Reliability and service recovery support includes system-related tasks, such as how to backup or recover the system.

Off-line tools support

Off-line tools support includes a description on how to use WaveStar TMS off-line scripts.

Management communication support

Management communication support includes database synchronization and LAN status tasks.

Trouble clearing support

Trouble clearing support includes tasks associated with creating trace files and with viewing core, log, and console.log files.

Patch and software upgrade support

The *Patch and software upgrade support* chapter will include information on how to install a WaveStar TMS patch.

□

Who performs administration tasks?

Introduction

Administrative tasks are performed by users with system administrator permissions.

System administrator user types

There are several administrator user types available which define the operating systems and platforms to which a system administrator may access. These user type levels include:

- *Operating System (OS) Superuser*, or the highest, privileged user, for example, **root** on UNIX or **Administrator** on Windows.
- *OS Administrator*, which is created by the *OS Superuser*. This user type is typically configured with access to specific OS administrator-level tools and system-packaged tools.
- *OS User*, which may be created or deleted by the *OS Superuser* or *OS Administrator* user.
  This user type may typically use standard OS tools, such as UNIX **vi**, configured with access to OS admin and system-specific tools.
- *System Administrator*, a user type which performs day-to-day tasks using system administrative tools. Typically the *System Administrator* user also has *OS User* privileges.

Functions

Users with system administrator privileges are able to perform tasks that enable them to:

- Provide security management, provisioning, and system support to the WaveStar TMS host and to the Network Map
- Control the appearance of the Network Map

□

Supported hardware configuration

Hardware configuration

WaveStar TMS only supports a single server with disk mirroring configuration. The tasks within this guide pertain to the supported configuration only.

WaveStar TMS file systems

Introduction

WaveStar TMS has 17 file systems.

List of file systems

The following lists the directory structure supported within WaveStar TMS.

1. Root directory (**/**)
2. OS kernel (**/stand**)
3. Spool directories (**/var**)
4. Core OS components (**/usr**)
5. Optional OS components (**/opt**)
6. Provisioning documents directory (**/dacscan/prov**)
7. Alarms directory (**/dacscan/alarms**). Note that this directory applies to host alerts; Fault Management is not supported on TMS.
8. Three Oracle tablespace directories (**/oradb**, **/oradb2**, **/oradb3**)
9. Application logs directory (**/dacscan/log**)
10. Database re-do logs and archives directory (**/dacscan/dbarch** and **/dacscan/journal**)
11. Application users directory (**/dacscan/users**)
12. Application trace information directory (**/dacscan/trace**)
13. Temporary directory (**/tmp**)
14. Application temporary space (**/dacscan/tmp**)
15. Application software (**/usr/dacscan**)
16. Application software patch history (**/patch**)
17. Q-adapter (**/ITM-QA**).

□

Run levels

Introduction

Certain tasks in this guide require the system administrator to change the run level of the WaveStar TMS application on an HP-UX machine. The following describes two run levels, *run level 3* and *run level 4*.

Run level 3

When the system administrator enters the **init 3** command on an HP-UX machine, this causes the system is set to run level 3 which shuts down the WaveStar TMS application.

Run level 4

When the system administrator enters the **init 4** command on an HP-UX machine, this causes the system is set to run level 4 which starts up the WaveStar TMS application.

□

2 Platform Administration

Overview

Purpose

This chapter contains information on how to:

- power on HP servers
- manage users on machines running on HP-UX and Windows platforms
- create and delete SAGE workstation users
- add a printer
- power down HP servers

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Section I: Powering on the HP server

Overview

Purpose This section describes how to power on the HP server.

Contents

Power on HP server (single server configuration with mirrored disks)	2-4

Power on HP server (single server configuration with mirrored disks)

Purpose Use this procedure to power on the HP server using the single server with mirrored disks configuration.

Important! When the system is powered on, it automatically starts the WaveStar TMS application.

Task Use this procedure to power on the HP server using the single server with mirrored disks configuration.

1. Press the power switch to the host control terminal.

2. Press the power switch to both external disk drives.

3. Press the power switch (or turn key, as appropriate) to the HP 9000 host processor.

   Result:

   The HP server runs diagnostics and proceeds into multi-user mode. During the start-up, the user is questioned about the system date. Answer the questions, as appropriate. The system is ready when the `Console Login` prompt appears.

4. Log in as `root`.

5. Enter the command `init 4` to bring the application up to run level 4.

END OF STEPS

□

Section II: Administering users

Overview

Purpose

This section contains tasks to create users on HP servers, Windows PCs, and SAGE workstations.

Contents

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Add a user to a Windows PC and assign user privileges	2-9
Add a user to a Windows PC and assign System Administrator (SA) privileges	2-11

Add a user on an HP-UX server through System Administration (sam)

Purpose Use this procedure to add a user through the sam application on an HP server.

Before you begin Before you begin this task:

- Confirm that a dacscan login exists on the server.
- Confirm that the WaveStar TMS and the Domain Management System (DMS) host names exist in the **.rhosts** file under the dacscan login's home directory.

Task Perform the steps below to add a user through the sam application on an HP server.

1 Log into the server as `root`.

2 On the HP VUE panel (at the bottom of the screen), select the terminal icon to open an **hpterm** window.

Result:

An **hpterm** window displays.

3 At the prompt, enter **sam** and then press **Enter**.

Result:

A menu of System Administration options is displayed.

4 Double click the **Accounts for Users and Groups** icon.

Result:

A menu of User and Group options is displayed.

5 Double click the **Users** icon.

Result:

A **User Management** form is displayed.

6 Select the Add function.

Result:

The **Add a User Account** form displays.

7 In the **Login Name** field, enter a value of up to 8 characters representing the ID (such as the person's abbreviated name) and press **Enter**.

Important! The valid characters allowed in the ID are lowercase letters (a-z), numbers (0-9), and one or more underscores (_). The first character must be a lowercase letter. The underscores may be in any position after the first.

8 At the **Home directory** field, which is pre-populated with home directory data such as **/home/<userID>**, check the **Create Home Directory** field and press **Enter**.

Important! The **Create Home Directory** box must be checked in order to successfully add the user.

9 In the **Primary Group Name** field, enter `dba` and press **Enter**.

10 In the **Start-up Program** field, enter `/usr/bin/ksh` and press **Enter**.

Important! The remaining information is optional.

11 Click **OK** to continue.

Result:

A password prompt is displayed.

12 Enter and re-enter a password.

13 Exit sam.

14 Log off from the server.

END OF STEPS

□

Add a user to a Windows PC and assign user privileges

Purpose Use this procedure to add a user to a Windows PC and assign user privileges.

Before you begin Be sure that the user ID has been created.

Permissions You must have system administrator privileges on the PC in order to perform this task.

Task Perform the steps below to add a user to a Windows PC and assign user privileges.

1 On the Windows main window, click on the **Start** button in the task bar.

Result:

A menu is displayed.

2 Select **Programs > Administrative Tools (Common) > User Manager**.

Result:

The **User Manager** window is displayed.

3 From the **User Manager** window, select **New User**.

Result:

The **New User** window is displayed.

4 Complete the required **Username** field and the optional **Full Name** and **Description** fields.

5 In the **Password** field, enter the password associated with the new user ID.

6 In the **Confirm Password** field, enter the same password.

7 Uncheck **User Must Change Password at Next Logon**.

8 Check the **Password Never Expires** box.

9 Select the **Groups** button.

Result:

The **Group Membership** screen is displayed.

10 On the **Group Membership** screen, view the **Member of** list for a **Users** entry. If **Users** is not listed, highlight **Users** in the **Not Member of** list and select the **Add** button.

Important! If an entry other than **Users** displays in the **Member of** list, highlight the entry, then select the **Remove** button to move the entry to the **Not Member of** list.

Result:

Users displays in the **Member of** list.

11 On the **Group Membership** screen, select **OK**.

Result:

The **Group Membership** screen closes.

12 On the **New User** screen, select **OK**.

Result:

The **New User** screen closes and the new user is listed on the **User Manager** screen.

END OF STEPS

□

Add a user to a Windows PC and assign System Administrator (SA) privileges

Purpose Use this procedure to add a user to a Windows PC and assign system administrator privileges.

Before you begin Be sure that the user ID has been created.

Permissions You must be authorized to perform this task.

Tasks Perform the steps below to create a system administrator login and assign system administrator privileges on a Windows PC.

1 On the Windows main window, click on the **Start** button in the task bar.

Result:

A menu is displayed.

2 Select **Programs > Administrative Tools (Common) > User Manager**.

Result:

The **User Manager** window is displayed.

3 From the **User Manager** window, select **New User**.

Result:

The **New User** window is displayed.

4 Complete the required **Username** field and the optional **Full Name** and **Description** fields.

5 In the **Password** field, enter the password associated with the new user ID.

6 In the **Confirm Password** field, enter the same password.

7 Uncheck **User Must Change Password at Next Logon**.

8 Check the **Password Never Expires** box.

9 Select the **Groups** button.

Result:

The **Group Membership** screen is displayed.

10 On the **Group Membership** screen, view the **Member of** list for an **Administrators** entry. If **Administrators** is not listed, highlight **Administrators** in the **Not Member of** list and select the **Add** button.

Important! If an entry other than **Administrators** displays in the **Member of** list, highlight the entry then select the **Remove** button to move the entry to the **Not Member of** list.

Result:

Administrators displays in the **Member of** list.

11 On the **Group Membership** screen, select **OK**.

Result:

The **Group Membership** screen closes.

12 On the **New User** screen, select **OK**.

Result:

The **New User** screen closes and the new user is listed on the **User Manager** screen.

END OF STEPS

□

Section III: Administer SAGE Desktop Integration users

Overview

Purpose This section describes how to administer the Secure Access Gateway for Enterprises (SAGE) Desktop Integration feature.

□

Definition: SAGE Desktop Integration

SAGE Desktop

SAGE Desktop Integration is an optional feature for WaveStar TMS applications that allows users to access multiple WaveStar TMS systems through a web browser.

A system administrator may add or delete SAGE users to/from an HP-UX client workstation.

Since SAGE requires each user to have an individual profile, the system administrator needs to manage these, along with user logins and passwords. The administrator also needs to support users with how to log into SAGE, how to change passwords, how to modify user attributes, and how to interpret and respond to system messages.

Related information

For more detailed system administration instructions, see the *Secure Access Gateway for Enterprises (SAGE) Manual.*

□

Add a user to a SAGE workstation

Purpose Use this procedure to add a user to a SAGE workstation.

Task Perform the steps below to add a user to a SAGE client workstation.

1 Log into the SAGE client workstation as system administrator.

2 Click on the **IWS** icon.

Result:

The **IWS HOME PAGE** form is displayed.

3 Click on the **TMS Network Module** icon.

Result:

The **TMS Network Module** form is displayed.

4 Select **Administration>Security Assignments**.

Result:

The **Controller: Security Privilege Query Box #1** form is displayed.

5 At the **Work Group ID** field, type **sawg** then click **OK**.

6 Select **Action**, and **Add User to Work Group**.

Result:

The **Add User to Work Group** form is displayed.

7 Type the user ID in the **User ID** field and click **OK**.

Important! If a specific geographic domain is required for the new User ID, refer to Chapter 5, “Provisioning environment setup” in this document.

Result:

The user ID is added to the SAGE workstation.

END OF STEPS

Delete a user from a SAGE workstation

Purpose Use this procedure to delete a user from a SAGE workstation.

Task Perform the steps below to delete a user from a SAGE workstation.

1 Log into the SAGE workstation as system administrator then bring up the WaveStar TMS map.

2 Select **Administration>Security Assignments**.

Result:

The **Controller: Security Privilege Query Box #1** form is displayed.

3 At the **Work Group ID** field, type **sawg** and click **OK**.

4 Select the user ID to be deleted then select **Action** and **Delete User**.

Result:

The selected user ID is deleted from the workstation.

END OF STEPS

□

Section IV: Add printers

Overview

Purpose This section describes how to add a printer.

Contents

Add a network printer	2-19
Add a local serial printer	2-21
Set up the Common Desktop Environment (CDE) printer icon	2-22

Add a network printer

Purpose Use this procedure to add a network printer to the workstation.

Before you begin Before you begin this task, collect the following information:

- Printer name (the printer name must be six characters or less)
- IP Address

The network printer must be connected to Ethernet. The local serial printer must be connected to the asynchronous mux board.

Task Perform the steps below to add a network printer.

1 Take the printer off-line.

2 Press the **Menu** button until TEST MENU appears in the display.

3 Press the **Item** button until SELF TEST appears in the display.

4 Press **Enter**.

Result:

A printer status sheet prints. This status sheet indicates the LAN hardware address (LAN HW ADDRESS), network peripheral name (HOST NAME), and the IP address, if these values have been assigned to the printer.

5 Press **On Line**.

6 Using the system console, log in as root on the primary host via the system console.

7 Enter `ksh /install/prtinstall` at the # prompt.

Important! For a serial printer, the script is `ksh /install/serial_prt`

8 Answer the questions as appropriate.

Result:

The network printer is added.

END OF STEPS

Add a local serial printer

Purpose Use this procedure to add a local serial printer.

Before you begin Before you begin this task, collect the following information:

- Printer name (the printer name must be six characters or less)

Task Perform the steps below to add a local serial printer to your workstation.

1 Using the system console, log in as `root` onto the primary host.

2 Enter `ksh /install/prtinstall` at the # prompt.

3 Answer the questions as appropriate.

Result:

The local serial printer is added.

END OF STEPS

□

Set up the Common Desktop Environment (CDE) printer icon

Purpose Use this procedure to configure the workstation to print WaveStar TMS forms to a local printer.

The workstation can be configured to enable the CDE printer icon to be used to print WaveStar TMS forms to a local printer.

Task Perform the steps below to set up the CDE printer icon.

1 Log in as `root`.

2 Enter `cd /config` at the UNIX prompt.

3 Enter `vi sys.vuewmrc`

4 Change the *PUSH_ACTION* variable in the "CONTROL Printer" section to `PUSH_ACTION f.action PrintPush`

5 Save the file.

6 Exit the file.

7 Enter `cd /usr/vue/config/types`

8 Enter `vi PrintPush.vf`

9 Change the *EXEC-STRING* variable in the "Action PrintPush" section to `EXEC-STRING bin/ksh -c 'xwd -frame | xpr -device ps -cutoff 70 -rv | lp -o nb -o postscript'`

10 Save the file.

11 Exit the file.

12 Select **Exit** on the HP Vue to reboot the workstation.

END OF STEPS

□

Section V: Miscellaneous management communication tasks

Overview

Purpose

This section describes miscellaneous management communication tasks.

Contents

View LAN status information	2-25

View LAN status information

Purpose Use this procedure to view the status of any of the LANs that are connected to the machine, including the LAN that connects the WaveStar TMS to the DMS.

Task Perform the steps below to view LAN status information.

1 Using the system console, log into the host as `root`.

2 Enter `lanscan`

Result:

The LAN status information is displayed.

END OF STEPS

□

Section VI: Powering off an HP server

Overview

Purpose This section describes how to power off an HP server.

□

Shut down the WaveStar TMS application

Purpose Use the following procedure to shut down the WaveStar TMS application.

Task Complete the following task to shut down the WaveStar TMS application.

1 Log into the Host system, through the console, as `root`.

2 Enter `init 3` to bring the application down to run level 3.

Result:

The system(s) eventually issue a message to indicate that WaveStar TMS has been shut down.

3 Power off the HP workstation.

4 Power off the Host Console Terminal.

5 Power off all external disk drives.

Result:

The HP workstation is powered off.

END OF STEPS

□

Power off an HP server

Purpose Use the following procedure to power off an HP server.

Task Complete the following task to power off an HP server.

1 "Shut down the WaveStar TMS application" (2-27).

2 Log into the host system as `root`.

3 At the # prompt, enter `shutdown -h -y 0`

Result:

The server eventually issues a message that indicates that it is safe to power down the server.

4 Power off the HP workstation.

5 Power off the Host Console Terminal.

6 Power off all external disk drives.

Result:

The HP workstation is powered off.

END OF STEPS

□

3 Security Management

Overview

Purpose

This section describes how to administer users and user profiles in WaveStar TMS.

This chapter describes tasks performed to restrict access to WaveStar TMS, the network elements, and the WaveStar NMS capabilities.

Background

Administrators are responsible for adding, modifying, and deleting WaveStar TMS user IDs. They also define the tasks to which users may or may not access by assigning a user profile to a user ID.

Contents

Add a user	3-2
Modify a user	3-4
Delete a user	3-6
Add a user profile	3-7
Modify a user profile	3-8
Delete a user profile	3-9

Add a user

Purpose Use this procedure to add a user to WaveStar TMS.

Permissions You must be authorized to perform this task.

Important! Before you perform this task, the user ID must first be added to the specific platform. See Chapter 2, "Platform Administration" for details.

Task Complete the following steps to add a user to WaveStar TMS.

1 On the Network Map, select **Administration > Security Assignments > Users > Add**.

Result:

The Add User form appears.

2 In the **User ID** field, enter a user ID.

3 In the **Description** field (if desired, this field is optional), enter a description to be associated with the user ID.

4 In the **Profile** field, select a user profile from the drop-down list.

The values are:

- **Default Profile**
- **Initial**
- **Provisioning (View Only)**
- **Combined**

If no user profile is selected, the user is automatically assigned **Initial** profile.

Result:

The selected profile is displayed and the tasks associated with the profile selection are displayed in the **Assigned Tasks** area of the window.

5 In the **User Type** field, select **Regular User**.

6 Click **Apply**.

Result:

A message displays at the bottom of the **Add User** form indicating that the user is added.

7 Click **OK**.

Result:

The **Add User** form closes.

END OF STEPS

□

Modify a user

Purpose Use this procedure to modify user ID information.

Permissions You must be authorized to perform this task.

Task Complete the following steps to modify a user:

1. On the Network Map, select **Administration > Security Assignments > Users > Display/Modify**.

   Result:

   The **List of Users** form appears.

2. Highlight the user ID to be modified.

3. From the **Actions** menu, select **Modify User**.

   Result:

   The **Modify User** form appears.

4. Change the **Description**, **Profile**, or **User Type** parameters as desired.

5. Click **Apply**.

   Result:

   A message displays at the bottom of the **Modify User** form which states that the parameters for the selected user are modified.

6. Click **OK**.

   Result:

   The **Modify User** form closes.

7. From the **List of Users** form, select **File > Close**.

Result:

The **List of Users** form closes.

END OF STEPS

Delete a user

Purpose Use this procedure to delete a regular user.

Permissions You must be authorized to perform this task.

Complete the following steps to delete a user:

1 On the Network Map, select **Administration > Security Assignments > Users > Display/Modify**.

Result:

The **List of Users** form appears.

2 Highlight the user ID to be deleted.

3 From the **Actions** menu, select **Delete User**.

Result:

A confirmation box appears and asks if you really want to delete this user.

4 Click **Yes**.

Result:

The user ID is deleted.

5 Select **File > Close**.

Result:

The **List of Users** form closes.

END OF STEPS

□

Add a user profile

Purpose Use this procedure to add a user profile.

Permissions You must be authorized to perform this task.

Task Complete the following steps to add a user profile:

1. On the Network Map, select **Administration > Security Assignments > Profiles > Add Profile**.

   Result:

   The **Add Profile** form is displayed.

2. In the **Profile Name** field, enter a name for the user profile (up to 30 characters).

3. Add tasks to the user profile by moving them from the **Available Tasks** list to the **Selected Tasks** list.

4. Click **Apply**.

   Result:

   The user profile is added and is now available for assignment to users.

5. Click **OK**.

   Result:

   The **Add Profile** form closes.

END OF STEPS

□

Modify a user profile

Purpose Use this procedure to modify a user profile.

Permissions You must be authorized to perform this task.

Task Complete the following steps to modify a user profile:

1 On the Network Map, select **Administration > Security Assignments > Profiles > Modify Profile**.

Result:

The **Modify Profile** form appears.

2 In the **Profile Name** field, select the user profile to be modified from the drop-down list.

Result:

The selected and available tasks for the user profile are displayed.

3 Do one of the following:

- Add tasks to the user profile by moving them from the **Available Tasks** list to the **Selected Tasks** list.
- Remove tasks from the user profile by moving them from the **Selected Tasks** list to the **Available Tasks** list.

4 Click **Apply**.

Result:

The user profile is modified.

5 Click **OK**.

Result:

The **Modify Profile** form closes.

END OF STEPS

□

Delete a user profile

Purpose Use this procedure to delete a user profile.

Permissions You must be authorized to perform this task.

Task Complete the following steps to delete a user profile:

1 On the Network Map, select **Administration > Security Assignments> Profiles > Delete Profile**.

Result:

The **Delete Profile** form appears.

2 In the **Profile Name** field, select the name of the user profile to be deleted from the drop-down list.

3 Click **Apply**.

Result:

A confirmation box appears and asks if you really want to delete this profile.

4 Click **Yes**.

Result:

The user profile is deleted.

5 Click **Close**.

Result:

The **Delete Profile** form closes.

END OF STEPS

□

4 System administration

Overview

Purpose This chapter describes tasks performed to administer WaveStar TMS.

Contents

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Section I: Start WaveStar TMS

Overview

Purpose

This section describes how to start WaveStar TMS.

Background

The initial step to start WaveStar TMS is to power up the Hewlett-Packard processor. There are a few possible configurations users can have with the processor, but the configurations fall into two main categories — duplex and simplex (standalone). Within simplex, the configuration may or may not contain mirrored disks.

When the system is powered up, it automatically proceeds to start the WaveStar TMS application.

Start the host application

The Host application starts when the HP 9000 Processor is brought to run level 4, and stops when the HP 9000 Processor is brought to run level 3 (multi-user mode).

Contents

Start WaveStar TMS on a PC	4-4

Start WaveStar TMS on a PC

Purpose Use this procedure to start the WaveStar TMS on a PC.

Before you begin Before running WaveStar TMS on a PC, the WaveStar TMS application must be loaded on the PC. This task assumes that the application has been already loaded.

Task Complete the following steps to start WaveStar TMS on a PC.

1 Log into the PC.

2

IF...	THEN...
The WaveStar TMS icon displays on the desktop:	Go to Step 5.
The WaveStar TMS icon ***does not*** display on the desktop:	Go to the next step.

3 Click the **Start** button in the taskbar, then select **Programs> Windows (NT) Explorer**.

Result:

The Windows Explorer window displays.

4 Navigate to the c:\jui\bin directory (or an alternate directory) containing the **run_jnm.bat** file.

Result:

The files in the c:\jui\bin directory display.

5 Continue with one of the following.

- On the desktop, double-click the icon.
- In Windows Explorer, double-click the **run_jnm.bat** file.

Result:

The WaveStar TMS Network Map appears.

END OF STEPS

□

Section II: Stop WaveStar TMS

Overview

Purpose

This section describes how to stop WaveStar TMS.

Stop the host application

The Host application starts when the HP 9000 Processor is brought to run level 4, and stops when the HP 9000 Processor is brought to run level 3 (multi-user mode).

Under certain circumstances it may be required to bring the HP 9000 Processor to run level. 3. For example, if the system needs a new software load.

Contents

Stop WaveStar TMS	4-7
Shut down WaveStar TMS with UPS	4-8

Stop WaveStar TMS

Purpose Use this procedure to stop the WaveStar TMS application.

Task Complete the following task to stop the WaveStar TMS application.

1 On the Network Map, do one of the following:

- Select **File > Exit**.
- Select the close button in the top right corner of the Network Map.

Result:

A confirmation dialog box appears.

2 Select **OK**.

Result:

The WaveStar TMS session ends.

END OF STEPS

□

Shut down WaveStar TMS with UPS

Introduction An Uninterruptible Power Supply (UPS) protects against power failures. It is used to protect the main servers and their essential peripherals from minutes of power failure. In the case of a longer power loss, the UPS enables the system to shut down gracefully.

Configurable file The UPS provides a configurable file that contains two timers used in the shutdown. When the WaveStar TMS application receives notification to indicate a loss of AC power, the application runs a shutdown script that results in a graceful shutdown of the application within the time limit of these timers:

- *shutdown_delay_mins*: This parameter indicates the number of minutes following notification that its UPS has switched to internal battery power before the UPS monitor initiates a shutdown. The default value for this parameter is one minute.
- *shutdown_timeout_mins*: This parameter indicates the number of minutes to monitor the shutdown operation before a reboot is initiated with the halt option. The default value for this parameter is five minutes.

These timers are tunable at time of installation and can be changed subsequent to installation; however, normally they should not need to be changed.

Systems configured with UPS are brought into init level 4 automatically on power up.

Task Use local procedures to support your UPS hardware.

□

Section III: Administer the system cron file

Overview

Purpose

This section describes how to administer the system cron file.

Background

The cron file contains commands that are automatically executed at set times.

Certain commands can be executed at desired times by using the system cron. The root cron and dacscan cron operate independently. The root cron has various administrative functions that are executed on a routine basis, such as daily backups and file system space monitoring. The dacscan cron has various application-related functions, such as database syncs and auto-implementation.

File format

The read-only root cron file format is such that everything on the active line is separated by blanks or tabs. Each field of the active line correlates to a subset of time. The following is an example of an active line, with each field separated by a tab (indicated by -->):

```
min-->hour-->day-->month-->day-of-week-->command
min: 0-59 hour: 0-23 day:1-31 month:1-12 day of
week: 0-6 (Sunday=0) command: program to be executed
```

In place of numerics, an asterisk (*) may be used to imply the whole range (wild card). A sample active line may look like:

```
01 04,23 * * * ksh /usr/dacscan/bin/auto_backup &
```

This line implies that the auto_backup will execute in the background one minute past the 4th hour and, again, one minute past the 23rd hour, every day, every month and every day of the week.

The cron files can be edited. Once the file is created/edited, it must be loaded into the cron.

Contents

View the system cron file	4-10
Edit the system cron file	4-11

View the system cron file

Purpose Use this procedure to view the system cron file.

Important! The system cron file is a read-only file. It can only be edited by the superuser (root user).

Task Perform the steps below to view the system cron file.

1 Using the system console, log into the primary host as `root`.

2 Enter `crontab -l` at the # prompt.

3 Press **Enter**.

Result:

The root cron file is displayed.

END OF STEPS

□

Edit the system cron file

Purpose Use this procedure to change the desired execution times of commands in the system cron file.

Important! The system cron file can only be edited by the superuser (root user).

Task Perform the steps below to edit the system cron file.

1 Using the system console, log into the primary host as `root`.

2 Enter `cd /usr/spool/cron/crontabs` <CR> at the # prompt.

3 Enter `ls -l` <Enter> at the # prompt.

Result:

The files root and dacscan are listed.

4 Edit the desired parameter.

5

IF...	THEN...
The root file is being edited.	Log in as `root` and enter `crontab root` <Enter> at the # prompt. **Result:** The root file is read into the system cron.
The dacscan file is being edited.	Log in as `dacscan` and enter `crontab dacscan` <Enter> at the # prompt. **Result:** The dacscan file is read into the system cron.

END OF STEPS

□

Section IV: Restart and stop the Oracle database

Overview

Purpose

This section describes how to restart and stop the Oracle database.

Definition: Oracle database

The Oracle database is used to retain persistent copies of application and customer data. Use of Oracle's Transaction Processing Option enables concurrency control and a high degree of data integrity.

Important

Starting and stopping the database should be performed only at the direction of Lucent Customer Support.

Contents

Restart the Oracle database	4-13
Stop the Oracle database	4-14

Restart the Oracle database

Purpose Use this procedure to restart the Oracle database.

Important! This procedure is only performed at the direction of Lucent Customer Support.

Task Perform the steps below to restart the Oracle database.

1 Using the system console, log in as `oracle`.

2 Enter `/usr/dacscan/toolbin/startdb.sh` at the prompt.

Result:

A message is displayed on the form to indicate that the database has been started.

END OF STEPS

□

Stop the Oracle database

Purpose Use this procedure to stop the Oracle database.

Task Perform the steps below to stop the Oracle database.

1 Using the system console, log in as `oracle`.

2 Stop the application on the host.

Reference:

For instructions, see the "Shut down the WaveStar TMS application" (2-27) task in Chapter 2, "Platform Administration".

3 Enter `/usr/dacscan/toolbin/shutdb.sh` at the prompt.

Result:

A message is displayed on the form which indicates that the database has been stopped.

END OF STEPS

□

Section V: Monitor space

Overview

Purpose WaveStar TMS has an internal script that periodically checks its own filesystems to verify that they are not running out of space. The following describes WaveStar TMS's space monitoring and recovery program.

□

Monitor space

Definition: Spacewatch program

Spacewatch is a space monitoring and recovery program that provides file-system monitoring once per hour for the following controller files:

- Provisioning documents directory (/dacscan/prov)
- Alarms directory (/dacscan/alarms)
- Application logs directory (/dacscan/log)
- Database archives directory (/dacscan/dbarch)
- Application users directory (/dacscan/users)
- Application trace information directory (/dacscan/trace)

Warning messages

If a controller file is over 60% full, Spacewatch provides a warning message to the system event log. The warning message is in the form of: “Log file” running low on space - clean up immediately!

Recovery messages

Specific recovery actions are provided for /dacscan/trace, dacscan/log, dacscan/dbarch, and dacscan/users files, if its percentage fill is over 80%. The recovery message for the dacscan/dbarch controller file is: ″Logfile″ removed database archive file - back up database immediately!

The recovery message for the dacscan/trace and dacscan/log files is: Removed log files - Archives may be incomplete!

The recovery message for the dacscan/users file is: ″Logfile″ is running low on space, clean up immediately!

□

Section VI: Network Map System Administration

Overview

Purpose

This section contains tasks that control the appearance of the Network Map.

Contents

Install a new background map for all users	4-18
Install a new background map for users of Windows PC client machines	4-20
Update a network element position	4-22
Add a user defined submap	4-23
Display/modify a user defined submap	4-24
Delete a user defined submap	4-25

Install a new background map for all users

Purpose

Use this task to install a new background map for all users.

Choosing a background map

A new background map must be selected carefully so that it does not obscure the icons and text displayed with it. For example, a map that is largely white will hide the white text of the icon names.

When selecting a background map, keep the following in mind:

- Select a map that is mainly of a different color than the icons and text displayed on the map.
- Select a map that includes colors that contrast sufficiently with the icons and text displayed on the map so that they are easily distinguished by the user.

Task

Perform the steps below to install a new background map for all users.

1 Log into the WaveStar TMS as `root` on the primary host via the system console.

2 To change to the directory containing the original background map, enter `cd /usr/dacscan/ui/jui/jnm/itm/data/customer` at the prompt.

3 Enter `mv defaultGIS.bshp ../.` at the prompt.

Result:

The original background map is moved and saved into another directory.

4 Enter `cp earth.gif /usr/dacscan/ui/jui/jnm/itm/data/customer/defaultGIS.gif`

Result:

The new map is copied into the directory.

5 If the map is for HP workstation client machines, download the **defaultGIS.gif** file to `/user/add-on/ui/jui/jnm/itm/data/customer`

If the map is for Windows PC/Windows Terminal Server machines, download the **defaultGIS.gif** file to `\jui\jnm\itm\data\customer`

6 Start WaveStar TMS.

Result:

The new map displays in the background.

END OF STEPS

□

Install a new background map for users of Windows PC client machines

Purpose

Use this task to install a new background map for users of Windows PC client machines.

Choosing a background map

A new background map must be selected carefully so that it does not obscure the icons and text displayed with it. For example, a map that is largely white will hide the white text of the icon names.

When selecting a background map, keep the following in mind:

- Select a map that is mainly of a different color than the icons and text displayed on the map.
- Select a map that includes colors that contrast sufficiently with the icons and text displayed on the map so that they are easily distinguished by the user.

Task

Perform the steps below to install a new background map for users of Windows PC client machines.

1 Log into each Windows PC client machine that needs a new map background as `administrator`.

2 To change to the directory containing the original background map, enter `cd \jui\jnm\itm\data\customer` at the prompt.

3 Enter `mv defaultGIS.bshp ..\.` at the prompt.

Result:

The original background map is moved and saved into a into another directory.

4 Enter `cp earth.gif \jui\jnm\itm\data\customer\defaultGIS.gif`

Result:

The new map is copied into the directory.

5 Start WaveStar TMS.

Result:

The new map displays in the background.

END OF STEPS

□

Update a network element position

Purpose Use the following procedure to update a network element's position on the Network Map.

Before you begin Be sure that you have *system administrator* or *Configuration Management* privileges to permit you to save the updated network element positions on the Network Map.

Task Complete the following task to permanently move a node to a new position on the Network Map.

1 On the Network Map, select the node you want to reposition.

2 Drag and drop the node to the new location.

Result:

The node and its connecting links are repositioned.

3 Select the following menu option: **File > Update Node/Label Locations**.

Result:

The network element's location is updated.

END OF STEPS

□

Add a user defined submap

Purpose Use this procedure to add a user defined submap.

Permissions You must be authorized to perform this task.

Task Perform the steps below to add a user defined submap.

1 On the Network Map, select **Administration > User Defined Submap > Add**

Result:

The Add User Defined Submap form is displayed.

2 In the **User Defined Submap Name** field, enter a name for the user defined submap.

3 To add member(s) to the new submap, select one or more entries from the **Non-Members** list, then click the left arrow button.

Important! You can optionally complete the **Filters** field to lessen the number of listed entries.

Result:

The selection(s) are moved to the **Members** list.

4 Select **OK**.

Result:

The new user defined submap is added and the Add User Defined Submap form closes.

END OF STEPS

□

Display/modify a user defined submap

Purpose Use this procedure to display/modify a user defined submap.

Permissions You must be authorized to perform this task.

Task Perform the steps below to display/modify a user defined submap:

1 On the Network Map, select **Administration > User Defined Submap > Display/Modify**

Result:

The Modify User Defined Submap form is displayed.

2 In the **User Defined Submap Name** field, select the submap to be displayed/modified.

Result:

The selected information displays.

3 Do one of the following:

- Make no changes and proceed to the next step.
- Add member(s) to the submap by selecting one or more entries from the **Non-Members** list, then click the left arrow button.
- Remove member(s) from the submap by selecting one or more entries from the **Members** list, then click the right arrow button.

4 Select **OK**.

Result:

The submap is modified if changes were made.

END OF STEPS

□

Delete a user defined submap

Purpose Use this procedure to delete a user-defined submap.

Permissions You must be authorized to perform this task.

Task Perform the steps below to delete a user defined submap:

1 On the Network Map, select **Administration > User Defined Submap > Delete...**

Result:

The Delete User Defined Submap form is displayed.

2 In the **User Defined Submap Name** field, select a map name from the pull down menu.

Result:

The selected information displays.

3 Select **OK**.

Result:

The user defined submap is deleted.

END OF STEPS

□

Section VII: Set Preferences

Overview

Purpose This section defines how to set map preferences in WaveStar TMS.

Contents

Set map preferences	4-27

Set map preferences

Purpose Use this procedure to set map preferences.

Task Perform the steps below to set map preferences.

1 On the network map, select **Administration > Preferences**.

Result:

The Preferences form is displayed.

2

IF	THEN
You want to select a different map	highlight an entry in the User Login View's drop down list.
You want to set the link width value,	select the Normal or Heavy button.

3 Select **OK**.

Result:

The form closes. Changes to the map will take effect during the next and subsequent sessions.

END OF STEPS

□

Section VIII: Miscellaneous system administration

Overview

Purpose

This section describes some miscellaneous system administration tasks.

Contents

Search for location-type information for a specific network element	4-29
Search for controlled network elements	4-30
Display the software version number	4-31
Display patch information	4-32

Search for location-type information for a specific network element

Purpose Use this procedure to search for location-type information for a specific network element.

Important! The search is limited to network elements that are controlled or cataloged by WaveStar TMS.

Task Perform the steps below to search for location-type information for a specific network element.

1 On the Network Map, select **Administration**.

2 Select **Location Reference Table**.

Result:

The Location Reference Table Query Box is displayed.

3 In the **Office Location/NE ID** field, enter the location type information.

4 Enter criteria in **Additional Information**, if desired.

5 Select the **Area ID** from the drop-down list.

6 Select **OK**.

Result:

The Location Reference Table appears and displays location-type information.

END OF STEPS

□

Search for controlled network elements

Purpose Use this procedure to search for a list of network elements with which WaveStar TMS works and for information about the digital cross-connect systems that are part of the network.

Task Perform the steps below to search for controlled network elements and digital cross-connect systems that are part of the network.

1 On the Network Map, select **Administration > Location Reference Table**.

Result:

The Location Reference Table Query Box is displayed.

2 In the **Office Location/NE ID** field, enter the network element information.

3 Enter criteria in **Additional Information**, if desired.

4 Select the **Area ID** from the drop-down list.

5 Select **OK**.

Result:

The Location Reference Table form with the queried information is displayed.

END OF STEPS

□

Display the software version number

Purpose Use this procedure to display the version number of WaveStar TMS.

Task Perform the following steps to display the version number of WaveStar TMS.

1 From the Network Map, select **Help > Version**.

Result:

The currently installed software version and build date are displayed.

END OF STEPS

□

Display patch information

Purpose Use this procedure to display the patch information for WaveStar TMS.

Task Perform the following steps to display the patch information for WaveStar TMS.

1 On the Network Map menu bar, select **Help > Version**.

Result:

The currently installed software version and build date are displayed.

END OF STEPS

□

5 Provisioning environment setup

Overview

Purpose The provisioning environment setup involves using tasks to initialize WaveStar TMS and to support inter-domain provisioning.

□

Provisioning environment setup

Tools

Provisioning environment setup is supported through the following off-line tools:

- Bulk Link Provisioning tool
- Bulk Load tool
- Add Controller tool
- Delete Controller tool

For more information about these tools, see Chapter 7, “Off-line Tool Concepts”.

□

6 Reliability and service recovery

Overview

Purpose

This chapter describes tasks performed to insure the reliability of WaveStar TMS and procedures for system recovery if WaveStar TMS becomes unavailable.

Contents

Section I: Perform backups	6-2
Perform a hot backup	6-4
Perform a cold backup	6-5
Section II: Perform recoveries	6-6
Perform a hot backup recovery	6-7
Perform a cold backup recovery	6-8
Section III: Miscellaneous reliability and service recovery tasks	6-10
Obtain mirroring status	6-11

Section I: Perform backups

Overview

Purpose

This section describes how to perform various types of backups.

Regular backups

The system can be set to perform daily backups. The time for the daily backups is set in the cron file. For information on how to edit the cron file, see Chapter 4, “System administration”.

Host database backup

Two types of backup are available:

- Hot backup
- Cold backup

Hot backups occur when the system is up and running (hot). Cold backups occur when the WaveStar TMS is shutdown (cold). The hot backup takes longer to complete than the cold backup, but the hot backup can be initiated while WaveStar TMS is running. The application must be stopped before a cold backup can be initialized.

Hot backup

There are two types of hot backup available:

- Automatic
- User-initiated

The system automatically backs up the database on Sunday, Tuesday, Wednesday, Thursday, and Friday at 2:00 a.m. if a tape is present in the tape drive.

The hot backup takes from 60 to 180 minutes to complete, depending on the size of the database.

No operator action is required during the hot backup. The system is required to be at run level 4 for hot backup.

The default database backup retention is 5 days (5 tapes/rotation).

The frequency of the hot backups and the time can be altered in the cron file.

Important! It is recommended that you maintain scratch tape in the standby HP 9000 processor.

Cold backup

A cold backup is the most accurate type of backup.

Operator action is required during the cold backup procedure. The system is required to be at run level 3 for cold backup.

Cold backups should be run every week and the system must be down.

Contents

Perform a hot backup	6-4
Perform a cold backup	6-5

Perform a hot backup

Purpose A hot backup occurs when the system is up and running.

Task Perform the steps below to perform a hot backup.

1 Using the system console, log into the system as `root`.

2 Insert a tape into the tape drive.

Important! Wait until the lights on the tape drive stop flashing.

3 Enter `cd /usr/dacscan/bin`

4 Enter `/bin/ksh ./hot_backup`

Result:

The hot backup begins. This will take 60-180 minutes to complete. The # prompt is issued to the system console once the backup is complete.

5 Remove the tape.

6 Label the tape with the current date, and store the tape in a safe place.

Result:

The hot backup is complete.

END OF STEPS

□

Perform a cold backup

Purpose A cold backup occurs when the WaveStar TMS is shutdown (cold).

Task Perform the steps below to perform a cold backup.

1 Using the system console, log into the system as `root`.

2 Stop WaveStar TMS.

Reference:

For instructions, see the "Shut down the WaveStar TMS application" (2-27) task in Chapter 2, "Platform Administration".

3 Log in to the WaveStar TMS server as `root`.

4 Insert a tape into the tape drive.

5 Wait until the lights on the tape drive stop flashing.

6 Enter `cd /usr/dacscan/bin`

7 Enter `/bin/ksh cold_backup`

Result:

The cold backup begins. This will take approximately 40 minutes to complete. The # prompt is issued to the system console once the backup is complete.

8 Remove the tape.

9 Label the tape with the current date, and store the tape in a safe place.

Result:

The cold backup is complete.

END OF STEPS

□

Section II: Perform recoveries

Overview

Purpose

This section describes how to perform a recovery if a system failure occurs.

Types of recoveries

Two types of recovery are available:

- Recovering a hot backup
- Recovering a cold backup

Contents

Perform a hot backup recovery	6-7
Perform a cold backup recovery	6-8

Perform a hot backup recovery

Purpose Use this procedure to perform a hot backup recovery. Hot backups are recovered using the “hot_recover” script.

Before you begin WaveStar TMS must be shut down to perform this procedure.

Task Perform the steps below to perform a hot backup recovery.

1 Using the system console, log into the system as `root`.

2 Stop WaveStar TMS.

Reference:

For instructions, see the “Shut down the WaveStar TMS application” (2-27) task in Chapter 2, “Platform Administration”..

3 Insert the backup tape into the tape drive.

4 Wait until the lights on the tape drive stop flashing.

5 Enter `cd /usr/dacscan/bin`

6 Enter `/bin/ksh ./hot_recover`

Result:

The hot backup recovery begins. This will take approximately 90 minutes to complete. The # prompt is issued to the system console once the hot backup recovery is complete.

7 Remove the tape.

8 Restart the TMS application.

Result:

The hot backup recovery is complete.

END OF STEPS

Perform a cold backup recovery

Purpose Use this procedure to perform a cold backup recovery. Cold backups are recovered using the "cold_recover" script.

Before you begin WaveStar TMS must be shut down to perform this procedure.

Task Perform the steps below to perform cold backup recovery.

1 Using the system console, log into the system as `root`.

2 Stop WaveStar TMS.

Reference:

For instructions, see the "Shut down the WaveStar TMS application" (2-27) task in Chapter 2, "Platform Administration".

3 Insert a tape with a valid cold backup into the tape drive.

4 Wait until the lights on the tape drive stop flashing.

5 Enter `cd /usr/dacscan/bin`

6 Enter `/bin/ksh ./cold_recover`

Result:

A prompt appears and asks for the date of the backup tape.

7 Enter `YYYYMMDD` (or `YYMMDD` for older tapes).

Important! The date entered must match the date on the backup tape.

Result:

The cold backup recovery begins. This will take approximately 90 minutes to complete. The # prompt is issued to the system console once the backup is complete.

8 Remove the tape.

9 Restart the TMS application.

Result:

The cold backup recovery is complete.

END OF STEPS

□

Section III: Miscellaneous reliability and service recovery tasks

Overview

Purpose

This section describes how to perform miscellaneous reliability and service recovery tasks.

Contents

Obtain mirroring status	6-11

Obtain mirroring status

Purpose

Use this procedure to obtain mirroring status. This task is used to verify that the application and databases residing on separate disks are synchronized.

About the mirrored disk configuration

A mirrored disk configuration eliminates the need to have a second processor to serve as a backup. The application and database that reside on separate disks are mirrored onto a second set of disks. Information that is written to disk is reflected onto the mirrored counterpart. It is recommended that the mirroring status is checked from time to time to ensure that all the mirrored information is synchronized with the primary information.

Before you begin

Ensure that the LVSTATUS is set to SYNC.

Task

Perform the steps below to obtain mirroring status:

1 Using the system console, log into the primary host as `root`.

2 Enter `vgdisplay -v | pg` at the # prompt.

Result:

The mirroring status displays.

END OF STEPS

□

7 Off-line Tool Concepts

Overview

Purpose

This chapter describes off-line script tools provided with WaveStar TMS. It also contains tasks associated with off-line tools.

Contents

Section I: Bulk Link Provisioning tool	7-2
Bulk link provisioning tool task	7-3
Section II: WaveStar NMS to WaveStar TMS Data Population tool	7-5
WaveStar NMS to WaveStar TMS Data Population tool task	7-6
Section III: WaveStar TMS Merge Circuit tool	7-9
WaveStar TMS Merge Circuit tool task	7-11
Section IV: Add DMS tool	7-13
Add a DMS to the Network Map using the Add DMS tool	7-14
Section V: Delta export/import of optical links/path tool	7-16

Section I: Bulk Link Provisioning tool

Overview

Purpose

This section describes the bulk link provisioning tool, which is used to perform a bulk transfer of topological links from provisioning systems, e.g., the Physical Resource Manager to WaveStar TMS. This off-line tool abstracts the topological links into a bulk process then performs a bulk add of the links to WaveStar NMS as if they were added individually through the WaveStar NMS GUI.

About this tool

Before running this tool, an input file is created which contains one line per NMS (or TMS) link to be provisioned. The created file is entered in the bulk link provisioning tool command and run with certain options.

Contents

Bulk link provisioning tool task	7-3

Bulk link provisioning tool task

Purpose This section describes how to perform bulk link provisioning in WaveStar TMS.

Before you begin Consider the following before running the bulk link provisioning tool.

Important! This tool is expected to be run during ***off-hours*** to avoid the impact that the process may have on system response.

Task Complete the following steps to run the bulk link provisioning tool:

1 Log into the server as dacscan then enter **cd /usr/dacscan/toolbin**.

2 In the **/usr/dacscan/toolbin** directory, create an input file.

3 In the input file, add one row of the following data, separated by the **|** character for each WaveStar TMS link to be provisioned.

- The full 'A' network element identifier **<*aloc*>**.
- The full 'Z' network element identifier **<*zloc*>**.
- The network element-level port address of the service link at the ***A*** location.
- The network element-level port address of the service link at the ***Z*** location.
- The coded rate of the link <link_type>.
- The free-format label for the circuit ID field <link_ID>.
- The coded Multiplex Section Protection (MSP) configuration. Values are **1X1MSP**, **1+MSP** or **none**.
- The free-format label denoting the **protecting link** or **none**.
- The network element-level port address of the protecting link at **A_location** or **none**.
- The network element-level port address of the protecting link at **Z_location** or **none**.

- The MSP protection group name for **1X1MSP** or **none**.
- The type of MSP configuration: **UNI**, **BI**, **NTT** or **none**.

Note that if the row is being created for ***MSP*** links, the protecting link and service link fields must be consistent for the sequential array of fields. The row must also have the same ***A*** network element ID and ***Z*** network element ID while conforming to the correct MSP port groupings at either end. The protecting link and service link must also have the same link ID.

4 Save and close the file, then select one of the following options from the next step.

5

IF	THEN
You want to validate data in the input file ***without*** provisioning links,	enter **linkgroup_prov NM_links -v** **Result:** All records in the data file are validated and error messages are logged to a file.
You want to provision *In-Effect* a group of links,	enter **linkgroup_prov NM_links -p** **Result:** A group of links are provisioned.
You want to take the latest provisioning run and audit the WaveStar NMS database against the input file,	enter **linkgroup_prov NM_links -a** **Result:** The run is audited and any non-*In-Effect* links are noted in the link_audit.log error file.

END OF STEPS

□

Section II: WaveStar NMS to WaveStar TMS Data Population tool

Overview

Purpose

This section describes the WaveStar NMS to WaveStar TMS Data Population tool. This tool is used to populate the WaveStar TMS Database when bringing a Domain Management System (DMS) under the TMS layer.

About this tool

The WaveStar NMS to WaveStar TMS Data Population tool contains two parts:

- Data Collection Tool (DCT)
- Data Load Tool (DLT)

Data Collection Tool

The Data Collection part of this tool exports data from the WaveStar NMS layer, places it into standard ascii format, then transmits the data from WaveStar NMS to WaveStar TMS via ftp. This tool retrieves each DMS-managed network element's optical links, optical multiplexed sections, optical channel trails, digital links and paths. This includes unprotected digital links and both protected and unprotected paths or path segments.

When the DCT is run, it automatically creates a directory to store data.

Data Load Tool

The Data Load part of this tool imports data from the WaveStar NMS layer into the WaveStar TMS. The Data Load tool enables users to load either a single entity or multiple types of entities at one time. The DLT produces an audit data file stored separately from the collected output file. The audit file contains a log of successfully loaded data and errored records.

Contents

WaveStar NMS to WaveStar TMS Data Population tool task	7-6

WaveStar NMS to WaveStar TMS Data Population tool task

Purpose This section describes how to use the WaveStar TMS Data Population tool.

Before you begin Before running the WaveStar TMS Data Population tool:

- Note that the state of the WaveStar TMS and DMS should be idle - no provisioning operations should be performed when the Data Collection Tool is run.
- Be sure to provide sufficient space and settings to enable the software to run without encountering storage problems.
- Be sure to process information for one DMS at a time.

Task Complete the following steps to run the WaveStar NMS to WaveStar TMS Data Population tool:

1 Log into the server as dacscan then enter **cd /usr/dacscan/toolbin**.

2 Create a set of UNIX files for each exported entity type.

Each file should contain the following sections.

- ***Data Types***, including **Label**, **HexString**, **Integer**, and **NEID**.
- ***Managed Elements***, including **name**, **nativeEMSname**, **version**, and **ProductName**.
- ***Optical Link and Optical Multiplexed Sections***, including **link_type**, **link_ID**, **aloc**, and **zloc**.
- ***Optical Channel Trail***, including **och_type**, **och_label**, **a_loc**, and **z_loc**.
- ***Digital Link***, including **link_type**, **link_ID**, **aloc**, and **zloc**.
- ***Path Representation***, including **pathtype**, **pathlabel**, **a_loc**, and **z_loc**.

Note that each file should contain lines which are terminated by a newline character **'0A'H**. Each field within the lines should be separated by the **|** character.

3 Save each file in **<dms_name>.<entitytype>.XX.<XX>.<mnemonic>.<YYMMDD.HHmm** format and close the files.

Important!

The following describes the above parameters:

- **<dms_name>** represents the name of the DMS from which data is extracted.
- **entity type** is the kind of data, i.e., **dl** for digital link, **ol-oms** for optical link, and multiplexed sections, etc.
- **XX** is the WaveStar NMS version.
- **mnemonic** is the Network Element mnemonic.
- **YYMMDD** represents the year, month, and day of the extraction.
- **HHmmSS** is the hour, minutes, and seconds of the extraction.
- **sequence identifier** is provided if needed.

4 From the **cd /usr/dacscan/toolbin** directory, enter **net_entity.ksh -n net_entity -e [-h]** to run the DCT tool.

Important! Note that **-n net_entity** represents the required network entity to be processed, i.e., **managed_ne|optical_link|optical_trail|digital_link|path**. **-e** is used to export the network entity from NMS to a file. **-h** prints the command usage message.

Result:

The DCT exports data from the WaveStar NMS layer, places it into standard ascii format. Data is then manually transmitted via **ftp** from WaveStar NMS to WaveStar TMS. Results are stored in a directory created by the DCT.

5 From the **cd /usr/dacscan/toolbin** directory, enter **net_entity.ksh -n net_entity -i [-vabh] [-f input_file]** to run the DLT tool.

Important! Note that **-n net_entity** represents the required network entity to be processed, i.e., **managed_ne|optical_link|optical_trail|digital_link|path**. **-f input_file** represents the file from which to read the entities to be

imported. The file is assumed to be in **/tmp/net_entity** unless the full path is specified. If no file is specified, the user is prompted to confirm a list of files to process. The files must adhere to the naming convention:
/tmp/net_entity/*net_entity.action.current

Result:

The DLT imports data from the WaveStar NMS layer into the WaveStar TMS. The tool produces an audit data file stored separately from the collected output file. The audit file contains a log of successfully loaded data and errored records.

6 From the **cd /usr/dacscan/toolbin** directory, run the WaveStar TMS Merge Circuit tool. See "WaveStar TMS Merge Circuit tool task" (7-11) for details.

END OF STEPS

□

Section III: WaveStar TMS Merge Circuit tool

Overview

Purpose

This section describes the WaveStar TMS Merge Circuit tool which supports the merging of in-effect, interdomain circuits/paths.

About this tool

The WaveStar TMS Merge Circuit tool searches the WaveStar TMS database for interdomain links that can be used for merge processing. This tool maintains a list containing interdomain link port candidates, and updates the list when an interdomain link's port has been used, so as to not revisit it in future processing.

The WaveStar TMS Merge Circuit tool next locates a path which terminates on an interdomain link port and that has a continuation in a neighboring domain. The tool then updates the WaveStar TMS database with the merge operation and notifies WaveStar NMS to update the DMS **userLabel** field with the name of the merged circuit.

Input file

The WaveStar TMS Merge Circuit tool uses an input data file with ASCII text and multiple, non-empty lines. Each line contains fields separated by **|**. There is no **|** at the beginning of the line but a **|** must be present at the end of the line.

The tool can handle multiple merged circuits in one file. For each merged circuit in the file, it should start with a ″PATH_BEGIN″ line, and ended with a ″PATH_END″ line.

Input file format

The Input data file format is:

```
PATH_BEGIN|
merged_ckt_id|a_loc|z_loc|a_port|z_port|prot_type|a_prot_l
to_be_merged_ckt_id1|
to_be_merged_ckt_id2|
...
to_be_merged_ckt_idN|
PATH_END|
```

PATH_BEGIN|

. . .

. . .

PATH_END|

Contents

WaveStar TMS Merge Circuit tool task	7-11

WaveStar TMS Merge Circuit tool task

Purpose This section describes how to use the WaveStar TMS Merge Circuit tool.

Before you begin Before running the WaveStar TMS Merge Circuit tool:

- Note that the merge will be valid only on paths with no circuits riding on them.

Task Complete the following steps to run the WaveStar TMS Merge Circuit tool:

1 Log into the server as dacscan then enter **cd /usr/dacscan/toolbin**.

2 Enter **pathMerge <input data file path name>** to run the WaveStar TMS Merge Circuit tool.

Result:

The WaveStar TMS Merge Circuit tool:

- searches the WaveStar TMS database for interdomain links and their endpoints that can be used for merge processing.
- searches the WaveStar TMS database for intradomain paths terminating on the identified end port.
- merges circuits across the interdomain link by populating the DMS **Userlabel** field with the circuit ID of one of the merged circuit's component circuits. The interdomain link is then marked as ***used***.
- Verifies whether or not the circuit is cross connected. If so, the tool searches for additional interdomain links across which it may be additionally merged. If not, then the tool returns to the list to perform additional processing.
- Produces audit logs(s) containing positive and negative results of the merge circuit tool which is stored in a file or files.

If the user has provisioned a Black box to a node, and the WaveStar TMS user wants to provision an inter-domain link between this node and another node in another domain to which it also may or may not

be provisioned , the operation from WaveStar TMS may be successful, but the order implementation at WaveStar NMS will fail. This will occur since the port(s) are in use by the link to the Black boxe(s).

In this case, it is recommended that the user first deletes the black boxes locally at the relevant WaveStar NMS and then creates the inter-domain link from WaveStar TMS.

When the user requests to merge a number of subnetwork connections from WaveStar TMS, if one or more of the requests fail to lower level management system, the WaveStar TMS will display a message indicating that the merge update of the WaveStar TMS circuit ID failed for the WaveStar NMS circuit ID in WaveStar NMS. The merge will complete in this case however **setUserLabel** has failed. In this case, the user will have to locally go and modify the circuit ID in the appropriate network management system through modify order parameters.

END OF STEPS

Section IV: Add DMS tool

Overview

Purpose

This section describes how to add or delete a DMS using the add or delete controller tools. Note that the term ***controller*** in this section refers to domain map.

Contents

Add a DMS to the Network Map using the Add DMS tool	7-14

Add a DMS to the Network Map using the Add DMS tool

Purpose

Use this task to add a DMS to the WaveStar TMS Network Map through the Add DMS tool. The task adds WaveStar NMS controllers to the controller map and then populates the WaveStar TMS Network Map with areas, representing the domains of the added controllers.

Important! This task must be run for each DMS to be added. Up to 24 DMSs may be added.

Before you begin

Before you begin this task, be sure to obtain access to:

- WaveStar NMS software with ITM-SC, WaveStar SNMS and their associated network elements.
- WaveStar TMS

Task

Perform the steps below to add a DMS to the WaveStar TMS Network Map.

1 Log in to each DMS host.

2 At the prompt, enter **who -r** to make sure that the run level is at run level 4.

3 Using the system console, log in to the WaveStar TMS host as **root**.

Determine the following:

- If the application is running, enter **init 3**.

4 At the prompt, enter **/usr/dacscan/bin/add.DMS**

Result:

A prompt displays.

5 At the prompt, enter the DMS name.

Important! The entered DMS name value should be upper case and meaningful since it will display in the GUI.

Result:

A prompt displays.

6 Enter the acronym of the DMS.

Result:

A prompt displays.

7 Enter the **IP address** of the DMS.

Result:

A successful add message displays.

8 At the prompt, enter **init 4** to bring up the application.

9 Open the WaveStar TMS GUI.

10 Open the WaveStar TMS Controller Map.

11 View the WaveStar TMS Controller Map and verify that it displays the name of the new DMS, which is preceded by **DMS_**.

12 Start communication from the WaveStar TMS Controller Map.

Result:

The new DMS should be able to establish communication with WaveStar TMS and the DMS icon on the WaveStar TMS should be green.

END OF STEPS

□

Section V: Delta export/import of optical links/path tool

Overview

Purpose Information not available.

About this tool Information not available.

□

Delta export/import

Overview Information not available.

8 Management communication

Overview

Purpose

This chapter describes tasks performed to interact with subsystems in the network.

Contents

Section I: Interact with domain management systems	8-2
Synchronize the WaveStar TMS database with a DMS database	8-3

Section I: Interact with domain management systems

Overview

Purpose

This section describes the administration of domain management systems.

Definition: Domain Management System (DMS)

DMS is part of a telecommunications management network that provides comprehensive and integrated management of an entire transport network.

Contents

Synchronize the WaveStar TMS database with a DMS database	8-3

Synchronize the WaveStar TMS database with a DMS database

Purpose Use this procedure to synchronize the WaveStar TMS database with a DMS database.

Task Complete the following task to synchronize the WaveStar TMS database with a DMS database.

1 From the Network Map, select **File > Open DMS Controller Map**.

Result:

The DMS Controller Map displays.

2 Right-click the DMS node with which WaveStar TMS will be synchronized.

3 Select **Session > Start DMS Synchronization**.

Result:

The Database Download/Synchronization form is displayed. The **DMS ID** field is pre-populated with the name of the DMS.

4 In the **Sync Type** field, select one of the following:

- **Network Elements**
- **Topological Links**
- **Subnetwork Connections**

5 Select **Apply**.

Result:

A confirmation form appears.

6 Select **Yes**.

Result:

The Database Synchronization Status form appears.

7 Wait for the synchronization to complete.

8 Select **Close**.

Result:

The WaveStar TMS database is synchronized with the DMS database.

END OF STEPS

□

9 Trouble clearing

Overview

Purpose

This chapter describes how to turn on trace and view trace files.

WaveStar TMS home directory

The home directory of WaveStar TMS is **/usr/dacscan**. The application servers reside in the bin directory of the home directory. Each server has trace information linked to it and it can be turned on and off via the **tinfo** file in **/usr/dacscan/bin**.

Important! The trace files should never be removed while the application is up under any circumstances.

Definition: trace file

A trace file contains information that identifies equipment status at a given point in time. The typical use of a trace file is to send it to Lucent technical support to be used as part of their remote troubleshooting activities.

Contents

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View the console.log file on a Windows PC	9-8

Create a trace file on an HP server

Purpose Use this procedure to turn on trace at a particular server and to create a trace file for capturing information.

Important! Trace files should never be removed.

Before you begin Before you begin this task, ensure that the application is at run level 3.

Task Perform the steps below to create a trace file.

1 Enter the command `who -r` to check the current run level.

Result:

The run level number displays, such as `run-level 3`.

2 If the displayed run level is higher than 3, enter the command `init 3` to bring the application up to run level 3.

3 Using the system console, log in to the primary host as `dacscan`.

4 At the prompt, enter **cd /usr/dacscan/bin** to change to the directory containing the **tinfo** file.

5 To edit the **tinfo** file, enter **vi tinfo**.

6 In the **tinfo** file, locate a line containing the following format:
<servername> -1 0 <servername>. 0 Y

Important! In your **tinfo** file, **<servername>** will be replaced with the actual server name.

7 Change the first occurrence of **0** to **5**.

Result:

The line should now display:

<servername> -1 5 <servername>. 0 Y

8 Save the file.

9 At the prompt, enter **init 4** to bring the application up to run level 4.

Result:

Trace is turned on. A trace file is generated and is called **<servername>.<pid>**.

10 Verify that the trace file **/dacscan/trace/<servername>.<pid>** exists.

Result:

The file displays in the appropriate directory.

END OF STEPS

□

Create a trace file on a Windows PC

Purpose Use this procedure to create a trace file for capturing information on a Windows PC.

Important! Trace files should never be removed.

Task Perform the steps below to create a trace file on a Windows PC.

1

2 Using the system console, log in to the primary host as `dacscan`.

3

IF	THEN
you want to increase global tracing and turn on F-interface tracing *at an HP-UX* console,	edit the **/usr/add-on/ui/jui/bin/run_jnm** file by changing `gt=1` to `gt=4 fint.tr=4`
you want to increase global tracing and turn on F-interface tracing *at a PC* console,	edit the **<drive>:\jui\bin\run_jnm.bat** file by changing `gt=1` to `gt=4 fint.tr=4`

4 Save the edited **run_jnm** or **run_jnm.bat** file.

5 Shut down and restart the WaveStar TMS application.

See the “Shut down the WaveStar TMS application” (2-27) and “Power on HP server (single server configuration with mirrored disks)” (2-4) tasks in Chapter 2, “Platform Administration”.

Result:

Tracing is turned on and a trace file is generated.

6 Verify that the trace file exists.

Result:

The file displays in the appropriate directory.

END OF STEPS

View the core file

Purpose Use this procedure to view the core file created when a server dies.

Definition: core file The core file contains information that identifies which process died and caused the core dump. It is used during troubleshooting to help identify what caused the server to die.

About the core file When a server shuts down, a core file may be created in **/usr/dacscan/bin**. The core file reveals the identity of the server. Because the server is automatically restarted, service on that particular function of the system is only impacted for a brief period. Until it has restarted, information will not be lost because the system's bulletin board will buffer services requested upon that server.

Task Perform the steps below to view the core file.

1 Using the system console, log in to the primary host as `dacscan`.

2 Enter the following command: `ls –l core`

3 Enter the following command: `file core`

Result:

The contents of the core file is displayed.

END OF STEPS

□

View the log files

Overview

Operator transaction logs are stored in compressed format in the **/dacscan/log/data** directory with the following naming convention:

<log-prefix>.<julian-date>.<hour>.<minute>

The following is a list of log files:

- sys (System Event) - records all system error messages. File name is **tms.log.<hostname>**.
- Server log file - Logs process event and error information. File is stored at **/dacscan/log/data/tms.log**.
- PC client log file - The file is stored at **<drive>:\jui\logs\<user>.log**

All log files are maintained up to seven days; the oldest file is overwritten first. One log file is retained for each day of the week.

Log Files

All significant events associated with the database backup and transfer scheme are logged.

The events are also retained in log files in **/dacscan/tmp**.

□

View the log file on an HP server

Purpose Use this procedure to view the log file residing on an HP workstation.

Task Perform the steps below to view the log file.

1 Using the system console, log in to the primary host as dacscan.

2 Change to the directory containing the log file to be viewed. Type **cd /<full_directory_path>**

3 Enter **pg <logfilename>.log**

Result:

The contents of the log file is displayed.

END OF STEPS

□

View the console.log file on a Windows PC

Purpose Use this procedure to view the console.log file residing on a PC.

Task Perform the steps below to view the log file.

1 Log in to the PC as **sa.**

2 Using Notepad or Wordpad, display the **console.log** file which resides in **/home/<user>/NM/<workstationname>.<pid>/jui/logs/console.log**

Result:

The file displays.

END OF STEPS

□

10 Patch and Software Upgrade Tasks

Overview

Purpose This chapter will contain WaveStar TMS patch and upgrade information.

Information Information not available.

Contents

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Patch information

Description Information not available.

□

Appendix A: Installation Parameters

Overview

Introduction

This Appendix contains non-obsolete WaveStar TMS configuration parameters.

Header Files

There are three header files, two of which are auto-generated. The only maintained header file is **nms_param.h** which itself includes the relevant public auto-generated header file.

Parameter numbers **ParamNo** are defined as the name of the parameter, capitalized and prefixed by **SA_**. The parameter **BER** would have a ParamNo of **SA_BER**.

To obtain the value of a parameter, you need to know its **ParamNo** and type (i.e., Scalar or String). The **ParamNo** is unique across both types, to help detect calls to 'get' functions with the wrong type of **ParamNo**. Any process wishing to obtain the value of a parameter must include **nms_param.h**.

Values

Certain 'well known' pre-defined values are defined in the maintained header file **nms_param.h**. If you need to use any other values, they must be added to this file. Currently defined values are **TRUE / FALSE**, **ON / OFF** and **YES / NO** which are all defined as **1 / 0** respectively. These values may be used as numeric entries in the tables below.

□

WaveStar TMS Parameter Table

Parameters

Parameter	Description and Values	Default Value
ALARMED_PATH_SUPPRESSION	Whether alarmed path suppression is on or off. Mininum value is **False**; Maximum value is **True**.	**False**
ALM_DEL_OPTION	Configurable options for the deletion of persistent alarms. Values are **UNACK_ACK, ACK, UNACK, ENF_CLR_ACK**	**UNACK_ACK**
ALM_THRESHOLD	Keeps track of alarm aging period in seconds - for preplan only.	**45**
BILLING_INTERFACE	For billing interface feature. (**1** = TRUE; **0** = FALSE)	**0**
BILL_COMPUTER	Name of the bill computer.	
BILL_DIRECTORY	Name of the bill directory.	
BROADCAST	Broadcast family function enabled. Values are **off**; **on**	**off**
CHANNEL_SELECTION	Determines the method to use for channel selection. Values are **LOWEST_TIMESLOT_FIRST, BEST_USAGE**	**BEST_USAGE**

CKTFMT	Describes the circuit and format. Values are: **AZTYPEID, IDTYPEAZ,FREEFORMAT, AZTYPEID:FREE, IDTYPEAZ:FREE**	**AZTYPEID**
CKTFMTSTR	Stores the format of the circuit ID. Values are: **%s - %s %s %s,%s %s %s.%s,%s %s %s %s**	**%s %s %s %s**
COMBO_PROVISIONING	Configures combo provisioning. Values are **off** and on.	**off**
COUNTRY	Country codes used during installation. Values are: **FRANCE, GCL, GER, HOL, INDONESIA, JAPAN, KSA, MEX, PHILIPINES,PRC, SPAIN, TAIWAN,UK, USA**	**USA**
CURR_ALM_STORAGE_LIMIT	Configurable record limit for current alarms. Minimum value is **10000**; maximum is **200000**.	**10000**
CYCLIC	Cyclic scheduler function enabled. Values are **off**, **on**.	**off**
DATE_FORMAT	The format for the date. Values are **AMERICAN, EUROPEAN, YYYYMMDD**	**EUROPEAN**

DBPVAR	Geographical Domain Partitioning view. Values are **"READALL"** for see all nodes or **""** for See-Own-Nodes.	
DNA_INCR_UPD	Controls the database trigger supporting the DNA incremental update feature. Values are **OFF,ON**	**OFF**
ENTERPRISE	The default service partitioning name. Values are **ENTPRISE**, user-supplied for Other or ″″ for none.	
FIX_TUG_STRUCT	Fixed TUG structure functionally enabled. Values are **off, on**.	**off**
FM_APPROACH	Two distinct modes identified for the operation of Fault Management (FM) which are Service approach (top down mode) and the Alarm approach (bottom up mode). They affect whether the NES or NEV form of the network event list is displayed and certain other behavior of the FM screens. Values are **alarm, service**	**alarm**
FM_EVENT_LIST_SIZE	The number of events (lines) to be displayed on the NEV/NES window. Min. value is **100**; Max value is **500**.	**100**

FM_NASS_INTERVAL	Alarm summary update interval. (Range value; **1,300**)	**60**
FM_POLLING_INTERVAL	The interval time (in seconds) for polling to update the counters on the NES or NEV. Minimum value is **30**; maximum value is **60**.	**60**
FM_SYSTEM	Fault Management System Flag. Values are **CORBA, NON-CORBA**	**CORBA**
FRENCH	French language supported? Values are **on, off**	**off**
GERMAN	German language supported? Values are **on, off**	**off**
HIST_ALM_STORAGE_LIMIT	Configurable record limit for historical alarms. Minimum val ue is **10000**; maximum value is **300000**.	**100000**
HIST_RM	Keep track of disconnect history orders. Values are **1** to **180**	**180**
IMP_DISC_UN_XC	Improper disconnect/uncorrelated cross-connect function enabled. Values are **off, on**	**off**
INC_PPRSV_CHANS_IN_RTE	Defines whether to include pre-planned reserved channels in restoration order or not. Values are **YES, NO**	**NO**

INTEGER_PORT_ID	To determine if client uses TP IDs generated by ITM-NM to access the frame address and location. Values are **TRUE** for QNN interface; **FALSE** for PRM interface.	**FALSE**
INTEGER_SNC_ID	To determine if SNC_ID is integer or not. Values are **TRUE** for QNN interface; **FALSE** for PRM interface.	**FALSE**
KANJI	Kanji language supported? Values are **off, on.**	**off**
LB	Loop back functionality enabled. Values are **off, on.**	**off**
LOWER_LVL_CKT_PREEMPT	Lower level circuit pre-emption flag. Values are **Y,YES,N,NO**	**N**
MERGE_CIRCUIT	Merge circuit function enabled. Values are off, on	**off**
NB_ALARMS	Northbound alarms function enabled. Values are **off, on**	**off**
NB_CMISE	Northbound CMISE function enabled. Values are off, on	**off**
NB_CONFIG	Northbound configuration function enabled. Values are **off, on**	**off**

NB_EVTRCVR	Northbound event receiver. Values are **CIPC** for QNN interface; **nbgw** for PRM interface.	**nbgw**
NB_NOTIF	Northbound notification server. Values are **CIPC** for QNN interface; **er** for PRM interface.	**er**
NB_RSPMGR	Northbound response manager. Values are **CIPC** for QNN interface; **nbgw** for PRM interface.	**nbgw**
NMS_NB_NAME	A free-form field. Installation procedures should ensure that this is set to the UNIX host name of the primary machine in GR and ServiceGuard machine sets.	
NMS_PORT_TABLE	NMS Port Selection screen enabled? Values are **y,n**	**n**
NB_THR_SIZE	Value of thread stack size in kilobytes.	**128**
OFFICEDELIM	The location code delimiter (separates the physical office component from the NE equipment address in a location code.	**/**
PAMS	Is the PAMS interface enabled? Values are **off, on**	**off**
PAMS_ACCOUNT_NAME	The name of the PAMS account.	

PAMS_FILE_DIR	The directory in which PAMs auto-generated files are placed.	**/ITM_QA/PAMS_NM**
PAMS_PASSWORD	The password for the PAMS account (in clear).	
PAMS_SCHEDULE_AM	The time (HH:MM) scheduled for PAMS in the morning, i.e., **00:00 - 11:59**.	**07:00**
PAMS_SCHEDULE_PM	The time (HH:MM) scheduled for PAMS in the evening, i.e., **12:00 - 23:59**.	**13:00**
PCC	Path continuity check function enabled. Values are **off, on**	**off**
PM	Basic Performance Monitoring (PM) function enabled. Values are **off, on**	**off**
PM_LOG_DIR	PM remote directory	
PM_LOG_WKSTN	PM remote workstation	
PPALM	To check if user wants alarm triggered preplan. Values are **YES, NO**	**NO**
PP_COMBO_REST	Preplan combo flag. Values are **Y, N**	**N**
PREEMPT	Preemption function enabled. Values are **off, on.**	**off**

PRODSPLIT	Product ID for this installation (Values are **NLS** for R3T NLS only, **ELS** for R3T ELS only, **JOINT** for joint R3T NLS and ELS, **JOINT_MULTI_ ELS**for one NLS to many ELS, or **OTHER**).	**JOINT_MULTI_ ELS**
PRODUCT	Name of the product. Values are **T30,T30/VM, T30/JT**	**T30**
READ_ONLY_VIEWING_FOR_GD_USERS	Geographic Domain users may have a view only for records not in their domain. Minimum value **FALSE**; Maximum value **TRUE**.	**FALSE**
REUSE_CLO_FOR_RS	Reuse circuit order data for restoration circuits? Values are **YES, NO**	**NO**
RS	Basic restoration function enabled. Values are **off, on**	**off**
RS_SKIP_CHASS_VALID	RS customer can choose to skip class validation. Values are **Y, N**	**N**
RS_STOP_AT_LAY	To determine if the auto alarm triggered RS order needs to be stopped at LAY. Values are **Y, N**	**Y**
RS_STOP_AT_TEST	To determine if the user wants auto RS stop at TEST step. Values are **Y, N**.	**N**

SAVE_DISC_WKLOG	Is archive of Disconnect Orders enabled? Values are **Y, N**	**N**
SB_CORBA	Southbound CORBA function enabled. Values are **off, on**	**on**
SCHED_DISCONN	Scheduled disconnect function enabled. Values are off, on	**off**
SPANISH	Spanish language supported? Values are **on, off**	**off**
SWITCH_MSP	Switch MSP function enabled. Values are **off, on**	**off**
TANDEM_CONN	Tandem connection monitoring enabled. Values are **off, on**	**off**
TELCO	Name of the customer; user to set other parameters. Values are **BT-GTN, CHT, DTAG, GCL, SDH**	**SDH**
TIMESLOT_FORMAT	Timeslot format. Values are **G707**, **SEQUENTIAL**	**G707**
TIM_PORT	Keep track of TIM interface datakit port address (**0** if TIM_TCP is “ **Y**”, otherwise, user supplied).	
TIM_TCP	Keep track of TIM interface network type? Values are **Y, ““**	
TRENCH_ID_OPTION	Trench ID usage is on (**TRUE**) or (**FALSE**)	**FALSE**

TWOBYTECHAR	To identify if it is a double byte character language. Values are **YES, NO**	**NO**
UNALMUPP	User notification of alarms against unused preplan functionality enabled. Values are **off, on**	**off**
UNASGN_SRVDOM_ON_DISC	To unassign channels from service domain when service is disconnected. Values are **Y,N**	**N**
WORD_IP_ADDRESS	IP address of DNA serving Work Order Record Documents (WORDs)	

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