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SONET Products

AccessNode

Data Administration Procedures

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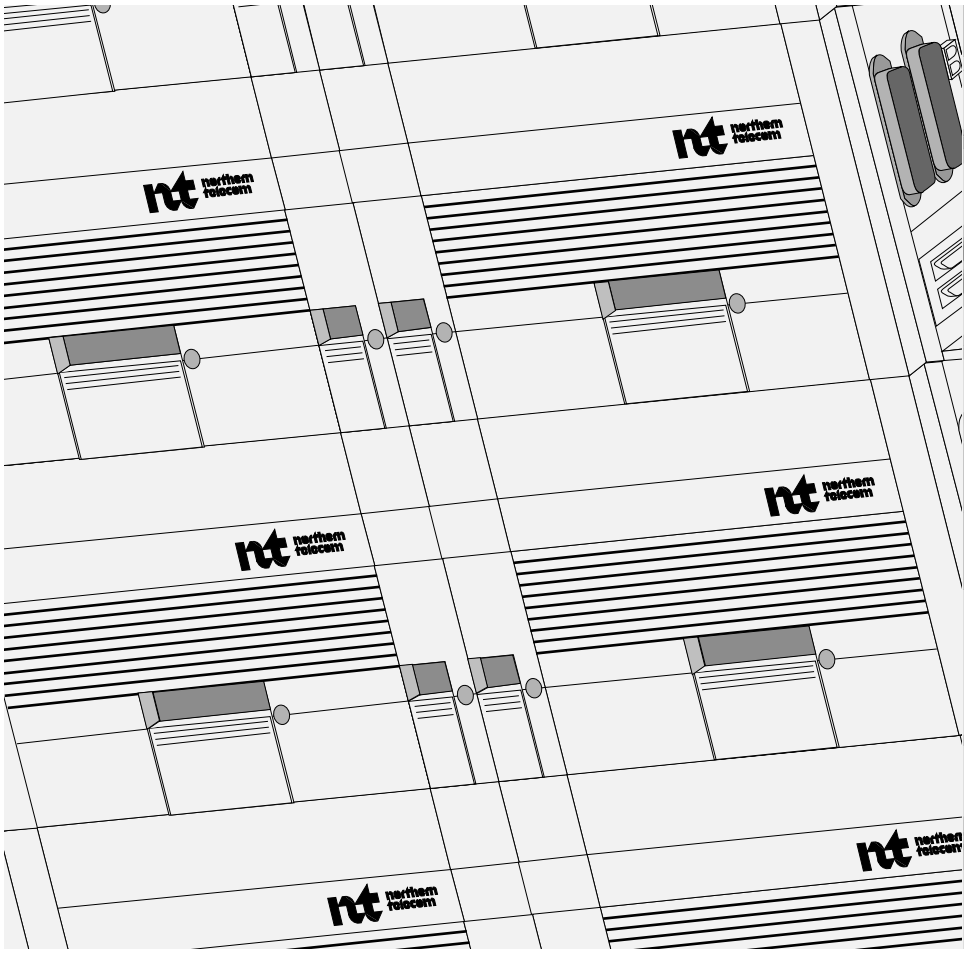

NORTEL NETWORKS™

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Data Administration Procedures

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Contents

About this document

This document describes the operations controller (OPC) tools and procedures used in the administration of data for both the OPC and the network elements (NE) in an AccessNode.

The OPC procedures in this document (although CMT-based) can be performed from a graphical terminal. However, you must substitute the CMT keystrokes that are provided in the procedures with the graphical equivalent.

For basic procedures, and mouse and keystroke information, see the Graphical Reference card in the sleeve of this volume. In addition, commands, parameters, and response conventions used in OPC procedures and in procedures for the network element user interface are included in *Network Element User Interface Description*, 323-3001-300, and *OPC User Interface Description*, 323-3001-301, in this volume.

How to use this document

Look up the task, as it relates to your job, in the left column on the following table. Then refer to the page as indicated in the right column.

Common and occasional tasks	**See**
Managing network element database backups from NE to OPC	page 1-1
Backing up files to and restoring from tape	page 2-1
Basic OPC procedures	page 3-1

References in this document

This document refers to the following documents in the AccessNode Northern Telecom Publication (NTP) library.

Commissioning and Testing, Volume 3

Operations, Administration, and Provisioning, Volume 4A

- *Network Element User Interface Description*, 323-3001-300
- *OPC User Interface Description*, 323-3001-301
- *System Administration Procedures*, 323-3001-302

Managing network element database backups from NE to OPC

The Backup/Restore Manager tool enables you to manage the network element (NE) database backup files that the operations controller (OPC) stores automatically. You can use these database files to restore data to an NE after it is rebooted or after a software release upgrade.

The OPC makes routine database backups for each NE in its span of control. Database backups run under the following criteria:

- once every 24 hours
- after each reboot of an NE
- after a certain number of changes are recorded
- after the completion of a release upgrade

You must delete backups that are no longer required.

If storage is at a premium, be sure to delete backups of old releases. You can list all of the backup files that exist and delete backup files that are no longer needed.

For further information on the Backup/Restore Manager tool, see *OPC User Interface Description,* 323-3001-301, in this volume.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
1-1	Displaying the backups for a network element	page 1-3
1-2	Displaying all backups stored on the OPC	page 1-4
1-3	Deleting a backup from the OPC	page 1-5
1-4	Setting the backup schedule on the NE	page 1-7
1-5	Performing a manual NE database backup	page 1-10
1-6	Restoring an NE database from the OPC	page 1-12

If you cannot successfully complete these procedures, contact your next level of support.

Procedure 1-1
Displaying the backups for a network element

Use this procedure to display the list of backup files currently stored on the operations controller (OPC) for a particular network element (NE).

Requirements

To perform this procedure, you must meet the following requirements:

- obtain a userID and password that permit access to the OPC and use the Backup/Restore Manager
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the Backup/Restore Manager tool. *The Backup/Restore Manager main window appears.*
2	Move to the NE in the list for which you want to see the backup files, then press **Ctrl_A** (or Keypad **0**).
3	Display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	Select the Manage backups option by pressing **Space** (or Keypad **0**). *The Manage Backups dialog appears, displaying all backups currently stored on the OPC for the NE.*
5	To close the dialog, tab to the **Done** button, then press **Ctrl_A** (or Keypad **0**). *The dialog closes.*
6	To close the tool: **a.** Display the Window menu by pressing **Ctrl_L W** (or Keypad **6**). *The Window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

Procedure 1-2
Displaying all backups stored on the OPC

Use this procedure to display a list of all backup files for the network elements (NEs) in the operations controller (OPC) span of control.

Requirements

To perform this procedure, you must meet the following requirements:

- obtain a userID and password that permit access to the OPC and use the Backup/Restore Manager
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the Backup/Restore Manager tool. *The Backup/Restore Manager main window appears.*
2	Display the Options menu by pressing **Ctrl_L T** (or Keypad**,**). *The Options menu appears.*
3	Move to the Query all backups entry option, then press **Space** (or Keypad **0**). *The Query All Backups dialog appears.*
4	To close the dialog, tab to the **Done** button, then press **Ctrl_A** (or Keypad **0**). *The dialog closes.*
5	To close the tool: **a.** Display the Window menu by pressing **Ctrl_L W** (or Keypad **6**). *The Window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

Procedure 1-3
Deleting a backup from the OPC

Use this procedure to delete backups for old software releases. To conserve disk space, delete backups you no longer need. The OPC only stores up to two backups for network elements running the current software release.

Requirements

To perform this procedure, you must meet the following requirements:

- obtain a userID and password that permit access to the OPC and use the Backup/Restore Manager
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the Backup/Restore Manager tool. *The Backup/Restore Manager main window appears.*
2	Display the Options menu by pressing **Ctrl_L T** (or Keypad**,**). *The Options menu appears.*
3	Move to the Query all backups option, then press **Space** (or Keypad **0**). *The Query All Backups dialog appears, showing a list of all backups.* ***Note:*** You can also execute Procedure 1-1 on page 1-3 and delete a backup file from the displayed list.
4	Select the backup file you want to delete by pressing **Ctrl_A** (or Keypad **0**). *The entry is highlighted.*
5	Display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**).
6	Select the Delete backup command by pressing **Space** (or Keypad **0**). *A dialog appears, asking you to confirm that you want to delete this backup.*
7	Tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**). *The backup file is deleted and the Delete Backup dialog closes.*
8	To close the Query All Backups dialog, tab to the **Done** button, then press **Ctrl_A** (or Keypad **0**). *The dialog closes.*

—continued—

Procedure 1-3 (continued)
Deleting a backup from the OPC

Step	Action
9	To close the tool: **a.** Display the Window menu by pressing **Ctrl_L W** (or Keypad **6**). *The Window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

Procedure 1-4
Setting the backup schedule on the NE

Use this procedure to set or change the backup schedule for a specific network element (NE). A scheduled backup is performed automatically starting on the specified day and at the time, continuing at the specified frequency, and ending on the specified day and at the time.

The Schedule Active field indicates whether an event is currently running. For example, if the value for the Backup event is an * (asterisk), then a backup is currently running. If the value is a. (period), then the event is not currently running.

Shelf database backups are stored at the operations controller (OPC) where up to two active backups, labeled “current” and “backup,” can be kept at any one time. When a manual or automatic backup is performed, the oldest copy is deleted, and the other copies are relabeled accordingly.

Requirements

To perform this procedure, you must meet the following requirements:

- have admin-level security clearance
- know what port to display or change and what the parameter values should be

Action

Step	Action
1	From the Network Element Status screen, display the Network Element Profile screen by entering: **admin nep** ↵ *The Network Element Profile screen appears.*
2	Display the Network Element Schedule screen by entering: **schedule** ↵ *The Network Element Schedule screen appears.*
3	Display the screen with the edit schedule menu by entering: **edit**↵ *The Edit Schedule menu appears.* ***Note:*** To prevent a scheduled event from occurring, set the end date to yesterday.

—continued—

Procedure 1-4 (continued)
Setting the backup schedule on the NE

Step	Action

4 Set or change any or all of the NE scheduling parameters. If you are setting the backup schedule for the first time, set all the parameters as described in the following table.

If setting	Then
frequency	Specify how often the backup runs in a given period by entering: **frequency <unit> <time interval>** ↵ where <**unit**> **2** <**time interval**> **D** day (1 to 730) **H** hour (1 to 17543) **M** minute (1 to 32767) **S** second (60 to 32767)
strttime	Specify the time for the backup to start by entering: **strttime <unit> <hour> <minute>** ↵ where <**unit**> **2** <**hour**> **1** to **24**; defaults to 00 <**minute**> **0** to **59**; defaults to 00
strtdate	Specify the date for the backup to start by entering: **strtdate <unit> <day> <month> <year>** ↵ where <**unit**> **2** <**day**> **1** to **31**; defaults to current day <**month**> **1** to **12**; defaults to 1 <**year**> **1976** to **2039**; defaults to 1990
—continued—	

—continued—

Procedure 1-4 (continued)
Setting the backup schedule on the NE

Step **Action**

If setting	**Then**
endtime	Specify the time for the backup to stop by entering: **endtime <unit> <hour> <minute>** ↵ where <**unit**> **2** <**hour**> **1** to **24**; defaults to, meaning forever <**minute**> **0** to **59**; defaults to 0
enddate	Specify the date for the backup to stop by entering: **enddate <unit> <day> <month> <year>** ↵ where <**unit**> **2** <**day**> **1** to **31**; defaults to, meaning forever <**month**> **1** to **12**; defaults to 1 <**year**> **1976** to **2039**; defaults to 1990
—end—	

5 Return to the Network Element status screen by entering:

quit 3 ↵

The Network Element Status screen appears.

—end—

Procedure 1-5
Performing a manual NE database backup

Use this procedure to make a backup copy of the network element (NE) database that includes all the provisioning data. If a failure occurs, you can use the backup copy to restore the NE database. A backup is recommended every time a provisioning change is made.

Shelf database backups are stored in the nonvolatile memory of the operations controller (OPC) module.

Two copies of the database are stored: current and backup 1. When you perform a backup, the oldest copy is deleted.

Do backups periodically to make sure the backup has the most recent data. Running backups periodically minimizes the amount of lost data if a failure occurs. If you schedule the backup as a network event, it runs automatically. For details see *System Administration Procedures*, 323-3001-302, in this volume.

Requirements

To perform this procedure, you must meet the following requirements:

- read the command conventions described in *Network Element User Interface Description*, 323-3001-300, in this volume
- perform this procedure from MAPCI;FWPUI screens

Action

Step	Action
1	From the Network Element Status screen, display the equipment shelf screen for the selected NE by entering: **equipmnt sh** ↵ *The Shelf Equipment screen appears for the selected NE.*
2	Back up the database by entering: **backupdb** ↵ *The system prompts for confirmation.*
3	Confirm the backup command by entering: **y** ↵ The backup process can take up to 5 minutes to complete, depending on system use.

—continued—

Procedure 1-5 (continued)
Performing a manual NE database backup

Step	Action
4	Confirm the backup by checking the logs buffer by entering: **logutil** ↵ **open FWDB** ↵ *The FiberWorld Database (FWDB) logs show the status of the database backup and the elapsed time of the backup. An FWDB300-series log indicates a problem with the backup.* **—end—**

Procedure 1-6
Restoring an NE database from the OPC

Use this procedure to restore a network element (NE) database (provisioning information) from a copy of the database stored in the operations controller (OPC).

For each vintage of software release, the OPC stores two copies of the NE database: current and backup1. When you restore a database, specify what copy is required. Backup1 is the copy previous to the current copy.

The restore command used in this procedure logs out all users at the selected NE.

Requirements

To perform this procedure, you must meet the following requirements:

- read the command conventions described in *Network Element User Interface Description*, 323-3001-300, in this volume
- perform the restore NE database procedure from FWPUI screens

Action

Step	Action
1	From the Network Element Status screen, display the equipment shelf screen for the selected NE by entering: **equipmnt sh** ↵ *The Shelf Equipment screen appears for the selected NE.*
2	Restore the database by entering: **restore** ↵ **<version>** ↵ *where* **<version>** the database version to be restored: current or backup1 *The system prompts for confirmation.*

—continued—

Procedure 1-6 (continued)
Restoring an NE database from the OPC

Step	Action
3	Confirm the restoration by entering: **y** ↵ *All users are logged out of the selected NE.* *The restoration process can take several minutes to complete.* ***Note:*** The NE requests a database restore from the OPC. If a database is available, the download is performed. If the OPC has no copy of the NE database for the current software release vintage, or if the OPC copy of the database is out of date with respect to the NE, the NE restores the database from the NE RAM.
4	Confirm the restoration by checking the logs buffer by entering: **logutil** ↵ **open FWDB** ↵ *The FiberWorld Database (FWDB) logs show the status of the database restore operation and the elapsed time of the restoration. An FWDB300-series log indicates a problem with the operation.*
5	Determine if the database was restored from the OPC.

If the database was restored	Then you have
from the OPC	finished this procedure
from the NE RAM	to reboot the NE. Contact Nortel technical support for advice on how to proceed.

—end—

Backing up files to and restoring from tape

The operations controller (OPC) Save and Restore tool allows you to save to tape and to restore important network data from tape from a single directory. This data includes the following:

- network element (NE) software loads and databases
- OPC configuration data and databases
- UNIX system data
- user configuration data
- any product-specific data

Note: OPC Port 1 (also called Port B) configuration data is not saved to or restored from tape. OPC Port 1 is unaffected by any tape operation.

The Save and Restore tool provides three basic functions:

- First, the main purpose of the tool is to back up data to a tape in the local OPC tape drive.
- Second, the tool restores files to the local OPC from a backup tape if OPC data is corrupted or the OPC is replaced.
- Third, after files are restored from a backup tape, the tool synchronizes the local OPC with the backup OPC by transferring the restored files to a single directory in the backup OPC.

For all three operations, the OPC Save and Restore tool automatically selects all appropriate files. You cannot select individual files to save, restore, or transfer to the backup OPC.

You can use the OPC Save and Restore tool by itself to back up local OPC data as a safeguard or with other tools to upgrade software for the local and backup OPCs. For the network upgrade procedures for your system, see the network upgrade Customer Application Procedure (CAP) for your system.

For further information on the OPC Save and Restore tool, see the description in *OPC User Interface Description*, 323-3001-301, in this volume.

Handling and storing digital audio tapes

Keep digital audio tapes (DATs) away from moisture, extreme hot and cold temperatures, and magnetic fields and devices.

When handling DATs around equipment, note that electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

Chapter task list

The following tasks are included in this chapter. They can be performed at any time and in any order.

Procedure	Tasks	See
2-1	Saving OPC data to tape	page 2-3
2-2	Scheduling a backup	page 2-6
2-3	Restoring OPC data from tape	page 2-10
2-4	Transferring OPC data to the backup OPC	page 2-14
2-5	Identifying the backup tape	page 2-16

If you cannot successfully complete these procedures, contact your next level of support.

Procedure 2-1
Saving OPC data to tape

Use this procedure to save OPC data to a backup tape in the OPC tape drive. After you start the save operation, you cannot access any other OPC tool until the operation is canceled or completed. The save operation can take up to 40 minutes to complete depending on the amount of data on the disk.

CAUTION
Risk of damage to electrostatic-sensitive devices
Electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

You cannot select individual files to be saved. The OPC Save and Restore tool automatically selects and saves the appropriate files.

When you open the tool, the “Save to tape” operation is selected by default.

Note: If the Save to tape button at the top of the main window is disabled, the local OPC is inactive. You cannot perform the following procedure.

The tool contains two action buttons:

- Display tape details
- Save OPC data to tape

It is recommended that you select both buttons in the order that they appear.

Requirements

To perform this procedure, you must meet the following requirements:

- insert the tape in the local OPC tape drive (use a blank tape, or an existing tape designated for commissioning data for this OPC)
- allow the tape to reach room temperature

  Note: Never insert a tape that has been stored at temperatures outside the range 10°C to 30°C (50°F to 90°F) until it has reached room temperature.

- have a userID and password that allow you access to the OPC
- connect a terminal to the OPC

—continued—

Procedure 2-1 (continued)
Saving OPC data to tape

- log in to the OPC
- read the command conventions described in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Open the OPC Save and Restore tool. *The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Select the **Display tape details** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog appears. It shows information about the tape.*
3	Check the fields in the dialog to confirm that the correct tape is in the tape drive. If you inserted the incorrect tape, remove it and insert the correct one.
4	When the correct tape is in the tape drive, select the **Done** button in the Tape Details dialog by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog closes. In the OPC Save and Restore tool main window, the arrow moves to the Save OPC data to tape button.*
5	Select the **Save OPC data to tape** button by pressing **Ctrl_A** (or Keypad **0**). *The Save confirmation dialog appears, prompting you to confirm your request.*
6	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). *If the backup tape is blank, a progress dialog appears, indicating that the save operation has been initiated.* Go to step 7. *If the backup tape contains data that you are overwriting, a configuration dialog appears.* Go to step 8.

—continued—

Procedure 2-1 (continued)
Saving OPC data to tape

Step	Action

7 Determine whether you want to continue or cancel the save operation.

If you want to	Then go to
cancel the save operation	step 9
continue with the save operation	step 11 when the completion dialog appears

8 Determine whether the tape contains a data archive or a software load.

If the tape contains a data archive, a dialog prompts you to confirm your request to overwrite the existing data on the tape.

If the tape contains a software load, a dialog prompts you to confirm your request to overwrite the existing data on the tape.

Tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**).

A progress dialog appears, indicating the progress of the save operation.

If you want to	Then go to
cancel the save operation	step 9
continue with the save operation	step 11 when the completion dialog appears

9 To cancel the save operation, select the **Cancel** button by pressing **Ctrl_A** (or Keypad **0**).

A confirmation dialog appears, prompting you to confirm your request to cancel the save operation.

10 Tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**).

Another progress dialog appears that indicates the save operation is being canceled and the tape is being erased.

When you cancel the save operation, a completion dialog appears.

11 To exit the completion dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**).

The completion dialog closes and the main window appears.

Go to step 12.

12 To close the tool:

a. Display the window menu by pressing **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. Select the **Exit** command by pressing **Space** (or Keypad **0**).

The tool closes.

—end—

Procedure 2-2
Scheduling a backup

Use this procedure to

- enable or disable the scheduler
- define a new schedule for backups of operations controller (OPC) data to tape
- edit the existing schedule.

CAUTION
Risk of damage to electrostatic-sensitive devices
Electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

You can perform the subtasks of this procedure in various sequences. For example, you can edit (redefine) the schedule while the scheduler is enabled or disabled. Alternatively, if a backup is imminent, you may want to disable the scheduler, edit the schedule, and then enable the scheduler again.

Requirements

To perform this procedure, you must meet the following requirements:

- have a userID and password that permit access to the OPC Save and Restore Tool
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the OPC Save and Restore tool. *The OPC Save and Restore main window appears in save mode. The Save to tape button is selected and the buttons for saving OPC data to tape and for scheduling a backup appear in the bottom half of the window.*

—continued—

Procedure 2-2 (continued)
Scheduling a backup

Step **Action**

Note: The default state of the scheduler is the disabled state.

If you want to	Then go to
enable the scheduler	step 2
define a new schedule or edit the existing schedule of backups	step 3
disable the scheduler	step 6
close the OPC Save and Restore tool	step 7

Enabling the scheduler

2 Enable the scheduler.

a. Tab to the **Enable scheduler** button, then press **Ctrl_A** (or Keypad **0**).

A message appears, indicating that the scheduler is enabled and reminding you to place a writable tape in the tape drive before the scheduled backups begin.

b. Tab to the **Done** button, then press **Ctrl_A** (or Keypad **0**).

The OPC Save and Restore tool main window appears. The Scheduler State label now reads, "Scheduler is enabled" and the label on the Enable scheduler button has changed to "Disable scheduler".

Go to step 7.

Defining a new schedule or editing an existing schedule

3 To define a new schedule or to edit the existing schedule, tab to the **Edit schedule** button, then press **Ctrl_A** (or Keypad **0**).

The backup schedule dialog appears.

If you want to	Then
use the default schedule	The default settings schedule backups to occur every day at 04:00, starting tomorrow. To use the default schedule, tab to the **Default** button, then press **Ctrl_A** (or Keypad **0**). *The Run every field is set to 1. The day(s) button is selected. The Next run fields are set to 04:00 and tomorrow's date.* Go to step 5.
—continued—	

—continued—

Procedure 2-2 (continued)
Scheduling a backup

Step **Action**

If you want to	Then
define a schedule or edit an existing schedule	Define the frequency of the backups. **a.** Tab to the Run every field and enter how often you want the backups to occur. The valid range of values for the Run every field depends on which Time button you plan to select in step b. If you select hours, the valid range of values is 2 to 23; if you select days, the valid range of values is 1 to 99. **b.** Tab to the Time buttons and use the arrow keys to move to the button you want to select (hour(s) or day(s)). Press **Ctrl_A** (or Keypad **0**).
—end—	

4 Define the time the backups are to occur and the date the backups are to begin.

a. Tab to the Next run fields.

b. Enter the time you want the backups to occur, using the format, hh:mm, where hh is the hour and mm is the minutes.

Note: For the time to be valid, use the 24-hour clock convention. Enter a colon (:) between the hour and the minutes.

c. Enter the date when you want the next backup to occur. The only valid dates are today's date and tomorrow's date. The following methods for entering dates are available:

- You can enter the date directly into the field, using the format mm/dd/yyyy, where mm is the month, dd is the day and yyyy is the year.
- You can display the chooser menu by pressing **Ctrl_L /** (or Keypad **3**) and select Today, then press **Ctrl_A** (or Keypad **0**). The date is automatically entered in the field.
- You can display the chooser menu by pressing **Ctrl_L /** (or Keypad **3**) and select Tomorrow, then press **Ctrl_A** (or Keypad **0**). The date is automatically entered in the field.

Note: For the date to be valid, you must enter the forward slash (/) between the day, month, and year (as in 01/31/1997).

5 Schedule the backups to occur according to the entries in the Backup Schedule dialog. Tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**).

The OPC Save and Restore tool main window appears.

—continued—

Procedure 2-2 (continued)
Scheduling a backup

Step	Action

Note: If a scheduled save operation is currently in progress, you cannot edit the schedule information. You must wait until the save operation is complete. If you edit the schedule information during a backup and select the OK button, an error message appears.

Select the **Cancel** button to close the Backup Schedule dialog without changing the original information and display the OPC Save and Restore tool main window.

If you want to	Then go to
enable the scheduler	step 2
disable the scheduler	step 6
close the OPC Save and Restore tool	step 7

Disabling the scheduler

6 To disable the scheduler, tab to the **Disable scheduler** button, then press **Ctrl_A** (or Keypad **0**).

The scheduled backups cannot occur again until the scheduler is enabled. The Scheduler State label now reads "Scheduler is disabled" and the label on the Disable scheduler button is "Enable scheduler".

Closing the tool

7 To close the tool:

a. Display the window menu by pressing **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. Select the **Exit** command by pressing **Space** (or Keypad **0**).

The tool closes.

—end—

Procedure 2-3
Restoring OPC data from tape

Use this procedure to retrieve data from a backup tape to the operations controller (OPC) disk. This procedure overwrites all existing data on the OPC disk.

That is, if the network element (NE) configuration data on the backup tape is different from the data on the OPC disk, performing this procedure will transfer the old data on the backup tape to the OPC disk, overwriting all existing data on the disk. All files are saved to a single directory.

CAUTION
Risk of damage to electrostatic-sensitive devices
Electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

This procedure contains two operations:

- displaying the tape name so that you know you are using the correct tape
- restoring data from a tape

In addition, it is recommended that you transfer OPC data to the backup OPC after you restore data from a backup tape. See Procedure 2-4 on page 2-14.

This procedure can take more than 40 minutes to complete. Once the restore operation begins, you cannot cancel the operation or use any other OPC tool until the operation is complete. During the restore operation, the local OPC is taken out of service and all current OPC operations are interrupted. At the end of the restore operation, a reboot occurs.

CAUTION
Risk of network outage
If the restore operation fails, be sure the appropriate NE loads remain on the OPC using the OPC Reboot/Load Manager tool. If the NE loads are corrupted, you must attempt to restore the loads as quickly as possible or transfer the standby OPC to duty. If you leave the loads off the duty OPC and an NE requires a reboot, no load is available a network outage can occur.

—continued—

Procedure 2-3 (continued)
Restoring OPC data from tape

This procedure overwrites existing data on the local OPC. Overwriting the existing data affects any OPC tools that use this data. For example, restoring OPC data on the local OPC can cause inaccurate download statistics in the Reboot/Load Manager tool.

Note: Be aware that inconsistencies between the OPC and NE database can be introduced after performing the restore operation. A mismatch between the NE and the OPC can occur since the data from the OPC database is based on the last save operation.

Requirements

To perform this procedure, you must meet the following requirements:

- allow the tape to reach room temperature

  Note: Never insert a tape that has been stored at temperatures outside the range 10°C to 30°C (50°F to 90°F) until it has reached room temperature.

- insert the backup tape in the local OPC tape drive
- have a userID and password that permit access to the OPC
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description,* 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the OPC Save and Restore tool. *The OPC Save and Restore main window appears in save mode. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Tab to the **Save to tape** button at the top of the main window. Do not select it.
3	Using the down arrow key, move to the **Restore from tape** button, then press **Ctrl_A** (or Keypad **0**). *The buttons for restoring OPC data from tape appear in the main window.* ***Note:*** If a backup OPC exists, a Transfer data to Backup OPC button appears.
4	To confirm that the correct tape is in the tape drive, select the **Display tape details** button by pressing **Ctrl_A** (or Keypad **0**).

—continued—

Procedure 2-3 (continued)
Restoring OPC data from tape

Step	Action
	After an In progress message appears, the Tape Details dialog appears, displaying information about the tape. If you do not have a tape inserted, "unknown" appears in the Tape type field.
5	Check the fields in the Tape Details dialog to confirm that the correct tape is in the tape drive.
6	To remove the Tape Details dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog closes. In the main window, the arrow moves to the Restore OPC data from tape button.*
7	In the main window, select the **Restore OPC data from tape** button by pressing **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears, prompting you to confirm your request.*
8	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). *The confirmation dialog closes. Several In progress messages appear in succession showing the progress of the tape extraction. During this period the local OPC becomes inactive. A dialog appears, indicating that the OPC is out of service.*
9	To remove the information dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The out-of-service dialog closes. A dialog appears, indicating the progress of the restore operation.* ***Note:*** The restore operation can take up to 40 minutes to complete. When the OPC is active again, an information dialog appears for each user session.
10	To remove the information dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The information dialog closes. A completion dialog appears, indicating that the restore operation is complete.*
11	To remove the completion dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The completion dialog closes. An In progress message appears indicating the OPC Shutdown tool is being opened. The OPC Shutdown tool appears.*
12	Select the **Shutdown** button by pressing **Ctrl_A** (or Keypad **0**). *A warning dialog appears.*
13	Tab to the **Proceed** button, then press **Ctrl_A** (or Keypad **0**). *An information dialog appears.*
14	Select the **OK** button by pressing **Ctrl_A** (or Keypad **0**). *An information dialog appears indicating the OPC is shutting down.*

—continued—

Procedure 2-3 (continued)
Restoring OPC data from tape

Step	Action
15	Select the **OK** button by pressing **Ctrl_A** (or Keypad **0**). *An In progress message appears followed by the Out of service dialog.*
16	Select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The dialog closes. A reboot occurs.* ***Note 1:*** It is recommended that you transfer OPC data to the backup OPC after you restore data from the backup tape. See Procedure 2-4 on page 2-14. ***Note 2:*** If after you perform this procedure, NEs need to be recovered or the alarm “Database not restored. Type Q approve at NE.” needs to be cleared, then perform “Restoring an NE database from the OPC” on page 1-12. **—end—**

Procedure 2-4
Transferring OPC data to the backup OPC

Use this procedure to transfer operations controller (OPC) data from the local OPC disk to the backup OPC. This procedure can take up to 30 minutes to complete. You can transfer data from an active OPC only.

It is recommended that you transfer OPC data to the backup OPC after you restore data from a backup tape. You can use the following procedure at any time to synchronize the local OPC with the backup OPC.

Requirements

To perform this procedure, you must meet the following requirements:

- have a userID and password that permit access to the OPC
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description,* 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the OPC Save and Restore tool. *The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Tab to the **Save to tape** button at the top of the main window. Do not select it.
3	Using the down arrow key, move to the **Restore from tape** button, then press **Ctrl_A** (or Keypad **0**). *The buttons for restoring OPC data from tape appear in the main window.*
4	Tab to the **Transfer data to Backup OPC** button, then press **Ctrl_A** (or Keypad **0**). ***Note 1:*** If the local OPC is not the primary OPC and you are performing this procedure from the backup OPC, the name of the button is “Transfer data to primary OPC”. ***Note 2:*** You cannot perform this procedure if your system does not have a backup OPC. That is, the “Transfer data to backup OPC” button in does not appear in the main window. *A confirmation dialog appears, prompting you to confirm your request.*

—continued—

Procedure 2-4 (continued)
Transferring OPC data to the backup OPC

Step	Action
5	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). *The confirmation dialog closes. Progress dialogs appear, indicating that the data on the OPC disk is being copied to the backup OPC.* ***Note:*** This operation can take up to 30 minutes to complete. *When the transfer is complete, the following completion dialog appears.*
6	To remove the dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The dialog closes.*
7	To close the tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the Exit command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

Procedure 2-5
Identifying the backup tape

Use this procedure to confirm that the correct tape is in the local operations controller (OPC) tape drive. This procedure displays a dialog with a series of fields that give general information about the backup tape. The fields describe the tape, the span of control that the tape is created for, and the OPC software load that created the tape. You cannot make changes to this dialog.

It is recommended that you display this dialog before you save or restore OPC data. Because of this recommendation, this procedure is included as part of Procedure 2-1 on page 2-3 and Procedure 2-3 on page 2-10. However, you can use this procedure, without the other two procedures, to confirm the contents of a backup tape.

Requirements

To perform this procedure, you must meet the following requirements:

- insert the backup tape in the local OPC tape drive
- have a userID and password that allow you access to the OPC
- read the command conventions for the type of interface you are using (CMT or graphical) in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC and open the OPC Save and Restore tool. *The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Select the **Display tape details** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog appears, displaying information about the tape.*
3	To exit the Tape Details dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog closes.*
4	To close the tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the Exit command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

Basic OPC procedures

This chapter contains common operations controller (OPC) procedures. Use these procedures as required during testing, or when they are referenced in other procedures.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
3-1	Shutting down an OPC	page 3-2
3-2	Checking the OPC tape identification	page 3-5
3-3	Transferring data between OPCs	page 3-7

If you cannot successfully complete these procedures, contact your next level of support.

Procedure 3-1
Shutting down an OPC

Use this procedure to shut down or reboot an operations controller (OPC).

The procedure is the same for restarting or halting. If you restart the OPC, the OPC shuts down and immediately restarts. If you want to remove all power from the OPC so that it can be removed from the shelf, use the halt option.

Requirements

To perform this procedure, you must meet the following requirements:

- have a userID and password of a user that has permission to shut down the OPC. Only users in the root, slat, or admin class can shut down the active OPC. Users in the root or standby class can shut down the inactive OPC.
- connect a terminal to the OPC that you want to shut down or reboot
- log in to the OPC

Action

Step	Action
1	Login to the OPC and open the OPC Shutdown tool. *The OPC Shutdown tool main window appears.*
2	Select the **Shutdown** button by pressing **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears, indicating the amount of time required for the shutdown and giving you a final chance to abort the shutdown.*

If you want to	Then go to
abort the OPC shutdown	step 3
proceed with the OPC shutdown	step 5

3	Select the **Cancel** button by pressing **Ctrl_A** (or Keypad **0**). *The OPC Shutdown tool main window appears.*
4	To close the tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*
5	Tab to the **Proceed** button, then press **Ctrl_A** (or Keypad **0**). This step commits the tool to shut down the OPC.

—continued—

Procedure 3-1 (continued)
Shutting down an OPC

Step	Action
	The confirmation dialog closes and the OPC shutdown process starts. A console message appears.
6	Select the **OK** button by pressing **Ctrl_A** (or Keypad **0**). *A shutdown progress dialog appears. As the shutdown progresses, the dots on the dialog are replaced with Xs.* The progress dialog indicates that the OPC is shutting down normally. If the shutdown completes before you select the OK button, you will not see the progress message. *An "out of service" dialog appears when the shutdown is complete. This dialog appears to all users who are currently logged in to the OPC.*
7	Select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *An information dialog appears.*
8	Depending on the task you are performing, you might be required to remove the OPC module from its shelf or to power down a portable OPC. In these cases, you must take the required action before the OPC attempts to reboot. Determine now if you will be powering down a portable OPC or removing an OPC.

If you will be	Then go to
allowing the OPC to start up	step 9
removing or powering down the OPC	step 11

9	Tab to the **Restart** button, then press **Ctrl_A** (or Keypad **0**). *The OPC reboots without delay after the shutdown completes. If you select this option, you do not have time to physically remove the OPC without damaging the OPC.*
10	Tab back to the **OK** button, then press **Ctrl_A** (or Keypad **0**). *The shutdown procedure completes. The OPC then initiates a reboot, which takes 5–10 minutes. When it is complete, the OPC login prompt (login:) appears.* *The shutdown terminates all user login sessions. You have to log in again after the OPC returns to service.* *You must not remove or power down the OPC during the reboot process.*
11	Select the **OK** button by pressing **Ctrl_A** (or Keypad **0**). *The shutdown procedure continues. When it is complete, the green Activity Indicator LED turns off.*

—continued—

Procedure 3-1 (continued)
Shutting down an OPC

Step	Action
12	Immediately after the green LED turns off, remove the OPC or power down the portable OPC. To power down a portable OPC: **a.** Change the power switch at the back of the portable OPC to the OFF position when the shutdown dialog indicates you should **b.** Remove the CNET cable from both the network element and the portable OPC. (For more information, see the procedure for connecting the portable OPC to the network in *OPC User Interface Description*, 323-3001-301, in this volume.) *If the OPC is still in place or if the portable OPC is powered up 3 minutes after the LED turns off, a start up is initiated. If you have not removed or powered down the OPC by this time, the red Unit Fail LED turns on and an alarm is raised.* **CAUTION** **Risk of data corruption** Do not remove or power down the OPC after the red LED is on. If you do, you will corrupt the data on its hard drive. The shutdown process takes 5 to 10 minutes. *When the reboot procedure is complete, the OPC login prompt (login:) appears. The shutdown terminates all user login sessions. You have to log in again after the OPC returns to service.* **—end—**

Procedure 3-2
Checking the OPC tape identification

Use this procedure to confirm that the correct tape is in the operations controller (OPC) tape drive or to determine the data that is on a particular tape.

Requirements

To perform this procedure, you must meet the following requirements:

- allow the tape to reach room temperature

  Note: Never insert a tape that has been stored at temperatures outside the range 10°C to 30°C (50°F to 90°F) until it has reached room temperature.

- have a userID and password that allow you access to the OPC
- connect a terminal to the OPC
- log in to the OPC
- insert the tape in the OPC tape drive

Action

Step	Action
1	Open the OPC Save and Restore tool. *The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Select the **Display tape details** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog appears. It shows information about the tape.*
3	Check the fields in the dialog to confirm the correct tape is in the tape drive. *If the tape has never been used, the "Tape type" is "Unknown" and all other fields are blank.* You cannot change the information in this dialog. This information is written to this dialog by the OPC when tape is used to record the backup data from the OPC.
4	If you inserted the wrong tape, remove the tape and insert the correct one.
5	To exit the Tape Details dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The Tape Details dialog closes.*

—continued—

Procedure 3-2 (continued)
Checking the OPC tape identification

Step	Action
6	Now determine:

If you want to	Then go to
overwrite the data on the tape	Procedure 2-3
restore data from the tape to an OPC	Procedure 2-3
remove the tape and close the tool	step 7

7 To close the tool:

a. Display the window menu by pressing **Ctrl_L W** (or Keypad **6**).
The window menu appears.

b. Select the **Exit** command by pressing **Space** (or Keypad **0**).
The tool closes.

—end—

Procedure 3-3
Transferring data between OPCs

Use this procedure to transfer operations controller (OPC) data from the disk of one OPC in a span of control to any other OPC in the same span of control.

You can use this procedure to transfer data

- from the backup OPC to the primary OPC
- from the primary OPC to the backup OPC

You can also use this procedure to transfer the commissioning data from a portable OPC to the primary or backup OPC.

This procedure can take up to 30 minutes to complete. You can transfer data from an active OPC only.

It is recommended that you transfer OPC data to the backup OPC after you have restored data from a backup tape. You can use the following procedure at any time to synchronize the data in the primary and backup OPCs.

Requirements

To perform this procedure, you must meet the following requirements:

- have a userID and password that allow you access to the OPC
- connect a terminal to the OPC that has the good data
- read the command conventions for the interface (CMT or graphical) you are using in *OPC User Interface Description*, 323-3001-301, in this volume

Action

Step	Action
1	Log in to the OPC that contains the network data that you want to save and open the OPC Save and Restore tool. *The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.*
2	Tab to the **Save to tape** button at the top of the main window. Do not select it.
3	Using the down arrow key, move to the **Restore from tape** button, then press **Ctrl_A** (or Keypad **0**). *The buttons for restoring OPC data from tape appears in the main window.*

—continued—

Procedure 3-3 (continued)
Transferring data between OPCs

Step	Action
4	Tab to the **Transfer data to Backup OPC** button, then press **Ctrl_A** (or Keypad **0**). If you are transferring data from the backup or portable OPC to the primary OPC, this button reads “Transfer data to Primary OPC”. *A confirmation dialog appears, prompting you to confirm your request.*
5	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). *The confirmation dialog closes and a progress dialog appears, indicating that the data on the OPC disk is being copied to the other OPC.* ***Note:*** This operation can take up to 30 minutes to complete. *When the transfer is complete, a completion dialog appears.*
6	To exit from the dialog, select the **Done** button by pressing **Ctrl_A** (or Keypad **0**). *The dialog closes.*
7	To close the tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the **Exit** command by pressing **Space** (or Keypad **0**). *The tool closes.*

—end—

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