297-2663-303

Digital Switching Systems

DMS-500

One Night Process Procedures Guide

LLT00013 Standard 08.02 March 2000

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Digital Switching Systems

DMS-500

One Night Process Procedures Guide

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Version 08.02 for LLT00013 is the standard version of this document. Added the section ”Warnings” in Summary of events for a software upgrade. This section warns site personnel to ensure that no peripheral hardware or software changes are made during the ONP. Site personnel are also asked to ensure that all TABAUDIT errors are resolved before ONP.

March 2000

Version 08.01 for LLT00013 is the preliminary version of this document. Updated site preparation events, (21–28) days out as follows: Include SDM and SPMs when you load peripheral modules with the new software loads (SR #NV90744).

August 1999

Version 07.02 for LLT00011 is the standard version of this document.

August 1999

Version 07.01 for LLT00011 is the preliminary version of this document.

This version includes the following changes:

- precautionary message (’Attention’) added to Special Activities, page 1–2
- precautionary message (’Attention’) added to TABXFR procedure, page 1–35

February 1999

Version 06.01 for LLT00010 is the standard version of this document.

August 1998

Version 05.01 for LLT00009 is the standard version of this document.

Contents

About this document

When to use this document

This document describes the One Night Process (ONP) software delivery procedures. The ONP delivers software upgades and applications to DMS switches that have like processors. The ONP also upgrades from one SuperNode switch to another SuperNode switch, and includes the SuperNode applications service control point (SCP), service switching point (SSP), and signal transfer point (STP).

This manual is for personnel who are responsible for setting up, administering, and maintaining the DMS-500 switch**.**

To use this manual fully:

- Ensure the DMS-500 switch you are working with is installed, commissioned, and active.
- Receive Nortel Networks-approved training for Table Editor, datafill, translations, and maintenance.

This publication is written for Nortel Networks and site personnel responsible for setting up and loading the ONP software delivery.

References to unsupported features

Beginning with software release LLT00009, you will find references to the following **unsupported** hardware, applications, and features in some of the DMS-500 documentation:

- Series 20-50 Processor
- Mixed Memory
- MSB7
- INODE
- Billing Server (AP/FP)
- EOPS
- FlexDial
- SL-100 Integrated Peripheral Equipment (IPE) digital phone

- AFT on EIU
- Multi Point Code Support
- Wireless on Wireless (WOW)

DMS-500 software is made up of local features of DMS-100 and long-distance features of DMS-250. The NTPs, and other technical documents issued with each software release, include information on new software features and new hardware introduced with the release. NTPs that do not require revisions, but still pertain to the DMS-500 switch, are also included with each release.

Note: Although documentation or references appear in the NTPs, the features, applications, and hardware listed above are **unsupported** on the DMS-500 switch.

How to check the version and issue of this document

The version and issue of the document are indicated by numbers, for example, 01.01.

The first two digits indicate the version. The version number increases each time the document is updated to support a new software release. For example, the first release of a document is 01.01. In the *second* software release cycle, the first release of the same document is 02.01.

The second two digits indicate the issue. The issue number increases each time the document is revised but rereleased in the *same* software release cycle. For example, the second release of a document in the first software release cycle is 01.02.

This document is written for all DMS-100 Family offices. More than one version of this document may exist. To determine whether you have the latest version of this document and how documentation for your product is organized, check the release information in *Product Documentation Directory*, 297-8991-001.

How this document is organized

The chapters in this document provide the following:

Chapter 1, One Night Process

Chapter 1 provides an overview that helps you prepare for the ONP and its associated activities. Chapter 1 also provides specific procedures to follow to accomplish the software upgrade.

Appendix A, Command summaries

Appendix A provides supplementary information about the major processes of the automated software upgrade. It describes the processes performed by the software programs that step you through the software delivery.

Appendix B, Ordering information

Appendix B provides information about how to order Nortel Networks publications and Product Computing-module Loads (PCLs).

Chapter 5 provides ordering information for UCS DMS-250 documentation and software releases.

References in this document

The following documents are referred to in this manual:

- *DMS-500 Master Index of Publications,* 297-2663-001
- *Product Documentation Directory,* 297-8991-001

What precautionary messages mean

The types of precautionary messages used in NT documents include attention boxes and danger, warning, and caution messages.

An attention box identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data. Danger, warning, and caution messages indicate possible risks.

Examples of the precautionary messages follow.

ATTENTION Information needed to perform a task

ATTENTION

If the unused DS-3 ports are not deprovisioned before a DS-1/VT Mapper is installed, the DS-1 traffic will not be carried through the DS-1/VT Mapper, even though the DS-1/VT Mapper is properly provisioned.

DANGER Possibility of personal injury

DANGER
Risk of electrocution
Do not open the front panel of the inverter unless fuses F1, F2, and F3 have been removed. The inverter contains high-voltage lines. Until the fuses are removed, the high-voltage lines are active, and you risk being electrocuted.

WARNING Possibility of equipment damage

WARNING
Damage to the backplane connector pins
Align the card before seating it, to avoid bending the backplane connector pins. Use light thumb pressure to align the card with the connectors. Next, use the levers on the card to seat the card into the connectors.

CAUTION Possibility of service interruption or degradation

CAUTION
Possible loss of service
Before continuing, confirm that you are removing the card from the inactive unit of the peripheral module. Subscriber service will be lost if you remove a card from the active unit.

How commands, parameters, and responses are represented

Commands, parameters, and responses in this document conform to the following conventions.

Input prompt (>)

An input prompt (>) indicates that the information that follows is a command:

>BSY

Commands and fixed parameters

Commands and fixed parameters that are entered at a MAP terminal are shown in uppercase letters:

>BSY CTRL

Variables

Variables are shown in lowercase letters:

>BSY CTRL ctrl_no

The letters or numbers that the variable represents must be entered. Each variable is explained in a list that follows the command string.

Responses

Responses correspond to the MAP display and are shown in a different type:

```
FP 0 Busy CTRL 0: Command request has been submitted.
FP 0 Busy CTRL 0: Command passed.
```

One Night Process

The One Night Process (ONP) is an automated software delivery process for the DMS-500 switch. The ONP consists of PRocedure Oriented Type Enforcing Language (PROTEL)-based programs that have been developed to step the user through the software delivery. This enables the use of high-level commands that can perform at faster rates than execs.

The software delivery engineer (SDE) and the assisting site personnel should review this section to become familiar with the ONP and understand how the ONP software interfaces with the user. The purpose of reviewing this information is to enable the SDE and the site personnel to correct any step that may require manual intervention.

One Night Process description

The ONP consists of two major phases: site preparation and software load application.

The site preparation phase begins 30 days prior to the software delivery date and continues through the day of the software update. In preparing for the software load application, do the following:

- Ensure front-end stability.
- Copy site store files.
- Configure disks.
- Ensure table data is error-free.
- Create a current image of the office data.

The software load application phase consists of a data move and transfer of switch activity from the old software load to the new software load. This phase includes data transfer functions (dump and restore) and application functions previously performed either manually or by earlier automated processes.

The ONP controls the software delivery. The ONP programs prompt the SDE to perform required tasks, wherever applicable.

Refer to Procedure 1-1, “One Night Process,” for more information.

Steps that ensure a smooth software delivery

It is imperative that the administrative functions outlined in the “Summary of events for a software upgrade” section be reviewed by the site personnel immediately upon receipt of this document.

The site personnel responsible for assisting Nortel Networks during the software delivery should become familiar with all sections of this document to ensure that designated activities are completed in a timely manner.

Hardware problems contribute to software update aborts and reschedules. Therefore, particular attention should be paid to testing all front-end memory cards and to monitoring all critical logs such as SuperNode CM, MM, MS, and others prior to the software update.

Special activities

If the DMS site has requested special changes to office data that can be done only during the dump and restore, then these requests must be identified ahead of time. Examples of such activities include special requests for tuple changes or deletions and certain office parameter changes.

ATTENTION

Verify that the SuperNode Data Manager (SDM) is upgraded before you begin the ONP.

CAUTION
MSB7 to LPP cutovers must occur before a software upgrade

The concurrent use of MSB7s and LPPs is not supported over software upgrades. All MSB7s must be replaced with LPPs prior to software upgrade. If this is not done, the dump and restore will fail because of a restriction placed on links in table C7LINK.

Abort considerations

During the ONP, you may need to abort the process. Consider the following before aborting:

- It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented but before the switch of activity (SWACT). Refer to "PRESWACT Interrupt" in the BCSUPDATE section of Appendix A.
- If an ABORT is required after the SWACT, refer to Procedure 1-10 "Revert to old load." Rescheduling the software update must be negotiated.
  - — Perform Procedure 1-10, "Revert to old load."
  - — Safely store the datafilled image and the most current image.

Summary of events for a software upgrade

This section summarizes the events required for a software upgrade. The summary is presented as a timeline divided into two sections: site preparation events and software update events.

Personnel involved in the preparation and software update must be thoroughly familiar with the timeline of events and the procedures referenced in the timeline. In addition, the site personnel must be familiar with the data schema changes that pertain to the new load.

Warnings

Allow sufficient time, 8 hours or more, for DATADUMP to run. Nortel Networks recommends that a complete TABAUDIT be executed beginning at 1–30 days. By 1–2 days TABAUDIT (or AUTOTABAUDIT) must be completed on all tables with no errors (except those listed in Customer Service bulletins). Table errors must be corrected and TABAUDIT executed again to verify the corrections.

A complete TABAUDIT should be run again if changes are made to any table as a result of the initial TABAUDIT. This is necessary because a change in one table may affect data in other tables.

Limit all unnecessary table changes (except using SERVORD) within two weeks of the ONP in order to minimize their impact on the ONP.

A TABAUDIT should also be run to verify any table changes that result from a hardware upgrade. Rerun a TABAUDIT, if necessary, 2–4 days before the ONP to ensure all tables pass with no errors.

Ensure no peripheral hardware or software changes, including retrofits, extensions, or maintenance activities, will be in progress during the ONP.

These are prohibited during the ONP application. The affected hardware must be made INB (installation busy), in both the host and remote office.

Such activities include, but are not restricted to, any of the following:

- Network extensions
- Peripheral additions or deletions
- MSB7 to LPP cutovers

Site preparation events

The following information provides the site personnel with a summary of activities to be performed prior to the software delivery date. Personnel involved in the preparation, the software update, or both, must be thoroughly familiar with this information.

40 to 60 calendar days prior to the software update

Nortel Networks polls the switch (by remote dial-in) to obtain specific switch information.

21 to 28 calendar days prior to the software update

The site receives the first shipment of the following tapes and documents, all of which must be reviewed:

- *DMS-500 One Night Process Guide*, 297-2663-303
- Either the *Feature Description Manual*, 297-1001-801, or the *IEC Release Document*, LD203680
- *Peripheral Software Release* document
- Two new PM load tapes; includes 8085- and 68000-based processor loads
- One XPM patch tape
- If applicable, two ENET load tapes and the ENET document

The site performs the following activities:

- verifies receipt of the shipment by comparing the tapes and documents received against the shipping document.
- verifies with NTAC that all issues resulting from the data consistency check (TABAUDIT table checks) have been resolved.
- verifies each tape is good by mounting and listing it. If the tape lists to the end without any errors, the tape is good.
- verifies that each tape is correct for the target release by checking the tape header or first file.

- loads all peripheral modules with the new software loads according to the *Peripheral Software Release* document. This includes loading the Multi-Protocol Controllers (MPC), but does not include the Message Switches (MS). This includes loading the SDM and SPMs, if present.
- puts all new XPM patches on the XPM disk volume. Do not include computing module (CM) patches.
- patches each Extended Multi-Processor System-Based Peripheral Module (XPM).
- ensures that site personnel are familiar with the One Night Process procedures described in this document.
- verifies there are enough store resources (memory) for the new software load plus 10 percent.
- ensures that scheduled REX (routine exercise) routines are automatically run daily.

14 calendar days prior to the software update

The site does the following activities:

- Monitors the SuperNode CM, MM, and MS logs through the day of the software update.
- Tests all processor memory cards for instability.

  Note: Be sure the user's stack size is at least 7500 for SuperNode switches.

- Copies all Store File Device (SFDEV) files to the tape or disk volume, including all old patches to the old patch tape.

10 calendar days prior to the software update

A Nortel Networks representative from the Pre-Application Engineering group contacts the site office to

- negotiate a time to perform the *Data consistency check* (TABAUDIT) procedure. This procedure is to be reviewed by Nortel Networks.
- verify that at least two dial-up ports are operational (one on each IOC [input/output controller]) and have a COMCLASS of ALL.

3 calendar days prior to the software update

A Nortel Networks representative from the Pre-Application Engineering group contacts the site office to

- verify the processor complex stability from the logs contained in the appropriate LOGUTIL buffer.

- verify all peripheral modules including MPC—but not including MS (message switch) if present—are loaded, patched, and working according to the *Peripheral Software Release* document.
- verify that at least two dial-up ports are operational (one on each IOC) and have a COMCLASS of ALL.
- verify that user names to be used during the software update have a PRIVCLAS of ALL.
- verify that the site has backed up all store files to tape or disk volume (including all old patches to the old patch tape).
- verify that correct tapes and documents are on site. This includes the following:
  - — one new release patch tape
  - — two sysfilled image tapes
  - — *DMS-500 One Night Process Guide*, 297-2663-303 (either online via Helmsman access to CD-ROM or as paper copy)

The site verifies with NTAC that all issues resulting from the data consistency check (TABAUDIT table checks) have been resolved.

1 calendar day prior to the software update

A Nortel Networks representative from the Pre-Application Engineering group or the Pre-Inservice Patch Delivery department contacts the site to

- download all current patches for the new software load.
- receive the name of a site representative with authority to continue the ONP, if time limitations occur on the night of the ONP.

When all checks are complete, the site dumps an office image after 5 p.m. This office image should be a backup to tape. The site should keep the image tape in a safe place.

The day of the software update

A Nortel Networks representative from the Pre-Application Engineering group contacts the site office to

- verify that the processors have been in sync for the past 24 hours and that the last REX test had passed.
- verify the processor complex stability.
- verify that the new software load has been restored to both SLM (system load module) disks.
- verify that the site personnel have reviewed all documents.

Immediately notify your next level of support if any problems are found.

Software update events

During the software update, Nortel Networks and site personnel work together to complete the software delivery. As a result, site personnel must be available from eight hours prior to projected front-end SWACT time until the site agrees the new software load is acceptable. Table 1-1 summarizes the software update events.

> ***Note:*** Nortel Networks recommends that the front-end SWACT be scheduled to take place during low traffic periods to minimize the impact on the office.

Table 1-1
Summary of software update events

Step	Event	Responsibility
1	Establish 2 FX data links.	SDE
2	Verify that • required software modules are loaded. • all required patches exist on the required disk volumes.	SDE
3	Perform Drop Sync.	BOTH
4	Check and update required patches for the new processor load.	SDE
5	Perform the data move with TABXFR.	SDE
6	Perform MS upgrade.	SDE
7	Perform PRESWACT of BCSUPDATE. Restore custom calling features to the new load, if applicable.	SDE
8	Rotate OCC billing disk devices.	SITE
9	Perform SWACT and POSTSWACT procedure to activate the new software load.	SDE
10	Verify that primary billing subsystems recover properly.	SDE
11	Resume the DIRP subsystems for standby and parallel devices (as needed).	SITE
12	Manually recover any out-of-service network modules, peripheral modules (PMs), carriers, or trunks that did not recover.	SDE

—continued—

Table 1-1
Summary of software update events (continued)

Step	Event	Responsibility
13	Check for dial tone and execute the site's Call Thru plan.	SITE
14	Work together to resolve any problems.	BOTH
15	When the SDE and site personnel agree that the load is performing satisfactorily, do the following: • Perform the rest of POSTSWACT. • Put the processors in SYNC. • Start journal file. • Dump office images.	BOTH
16	Reassign all current PROFILE information (for example, LOGIN) in SFDEV.	SITE
17	Reassign any temporary routing setup via LOGUTIL.	SITE
18	Reassign any changes in the INTEG level of the MAP terminal (for example, UPTH, BUFFSEL, FILTER, and others).	SITE
—end—		

CM ONP procedures overview

A description of the purpose and guidelines for the CM (computing module) ONP procedures follows this overview. The DMS-500 CM procedures follow with each procedure beginning at the top of a new page. To help you locate the beginning of a procedure, divider lines are located before and after the procedure title, as done for the title above. Thus, each procedure is documented as a module within Section 1.

The procedures (modules) are presented in the order listed below. To locate the document page number, refer to the Contents section of this document.

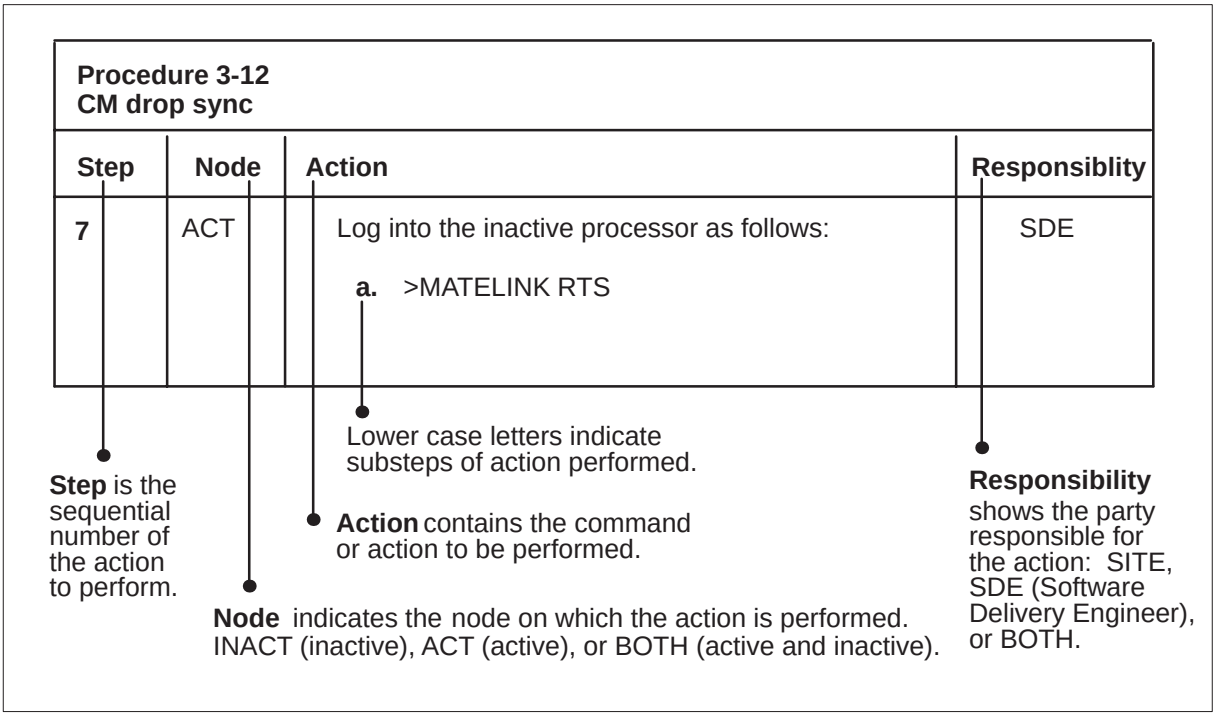
- CM ONP
- pre-application check of CM
- TABAUDIT data consistency check
- site responsibilities on the day of the software delivery
- CM drop sync
- TABXFR data transfer
- upgrade MS
- PRESWACT
- SWACT and POSTSWACT
- revert to old load, CM

Procedure 1-1 provides a general overview of the entire process. Each of the following detailed procedures is flowcharted, beginning with Procedure 1-2.

REPEAT OR GO TO
This symbol indicates a break from the normal flow of the procedure. It indicates you are to repeat step(s) or sub-step(s) in that procedure or to go to another procedure.

Figure 1-1 identifies the columns of information provided in the detailed procedures. Note that this is only an example procedure.

Figure 1-1
Example of column identification



CM ONP procedure

Purpose

The ONP is an automated software delivery process. It consists of programs that step you through the software delivery process.

Guidelines

Use Procedure 1-1 to perform the ONP. The procedures referenced are located in this section and are presented in the order shown below.

Procedure 1-1
One Night Process

Step	Action	Responsibility
1	Perform Procedure 1-2, “Pre-application check of CM.”	SITE
2	Perform Procedure 1-3, “TABAUDIT data consistency check.”	SITE
3	Perform Procedure 1-4, “Site responsibilities the day of software delivery.”	SITE
4	Perform Procedure 1-5, “CM drop sync.”	BOTH
5	Perform Procedure 1-6, “TABXFR data transfer.”	SDE
6	Perform Procedure 1-7, “Upgrade MS.”	BOTH
7	Perform Procedure 1-8, “PRESWACT.”	SDE
8	Perform Procedure 1-9, “SWACT and POSTSWACT.”	SDE

Note: If you need to revert to the old load CM processor, perform Procedure 1-10, “Revert to old load, CM.”

Pre-application check of the CM procedure

Purpose

This procedure tests all front-end memory cards in an effort to prevent hardware problems. Hardware problems are major contributors to aborting and rescheduling software upgrades. This procedure ensures front-end stability, copies site store files, and configures the disks containing PM load files.

Constraints

The following constraints apply to performing this procedure.

- This procedure applies only to SuperNode systems.
- Complete this procedure prior to the pre-application process date.
- Review all applicable site and ETAS Warning Bulletins. If necessary, contact your next level of support to obtain the required bulletins.
- Operating company personnel responsible for performing any of the steps in this procedure must be thoroughly familiar with the complete procedure before starting it.
- Perform this procedure during a site maintenance window. Ensure no faults or problems exist prior to starting this procedure.
- Carefully monitor SuperNode CM, MM, MS and SLM logs prior to the night of software delivery.

Guidelines

Use Procedure 1-2 to check CM memory cards prior to the pre-application process.

CAUTION
The DMS-500 is out of sync during this test.
Ensure no faults or problems exist prior to starting this procedure.

CAUTION
When waiting for a flashing A1 on the inactive RTIF, observe that the active RTIF continues to flash A1.
If the active RTIF is not flashing A1, the switch is not processing calls.

In case of emergency

In case of emergency situations, call your appropriate support group immediately. If the emergency is not service-affecting, follow normal site procedural policies.

Procedure

The steps listed below detail the pre-application check of the CM. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-2
Pre-application check of the CM

Step	Node	Action	Responsibility
1	ACT	Ensure that specific logs are not suppressed and are routed to an active log device as follows: ***Note:*** Log refers to CM, MS, MM, and SLM logs. **a.** >LOGUTIL **b.** >LISTREPS SPECIAL If specific logs are suppressed, use >RESUME <**log**>. If logs have threshold settings, use >THRESHOLD 0 <**log**>. **c.** >LISTROUTE DEVICE <**printer**> If the logs are not routed, use >ADDREP <**printer**> <**log**> and >STOPDEV <**printer**>. ***Note 1:*** **printer** refers to the available printer to be used. This makes sure the logs are enabled on the device. ***Note 2:*** Verify that critical logs are correctly routed. **d.** >STARTDEV <**printer**> **e.** >QUIT	SITE
2	BOTH	Ensure the CPUs are in SYNC and that neither is jammed inactive.	SITE
3	ACT	Match the memory from the memory level of the MAP terminal.	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
		a. >MAPCI;MTC;CM;MEMORY **b.** >MATCH ALL **c.** >QUIT	
4	INACT	From the inactive RTIF Terminal, jam the inactive CPU. **a.** RTIF> \JAM **b.** RTIF> YES {for confirmation}	SITE
5	ACT	Drop SYNC from the CM level of the MAP terminal. >DPSYNC >YES {for confirmation}	SITE
6	INACT	Wait for the inactive CPU to return to flashing A1 and test the CM stability with each of the following restarts only on the *inactive* RTIF terminal. **a.** RTIF> \RESTART WARM **b.** RTIF> YES {for confirmation} ***Note:*** Wait for a flashing A1 on the inactive RTIF. **c.** RTIF> \RESTART COLD **d.** RTIF> YES {for confirmation} ***Note:*** Wait for a flashing A1 on the inactive RTIF. **e.** RTIF> \RESTART RELOAD **f.** RTIF> YES {for confirmation} ***Note:*** Wait for a flashing A1 on the inactive RTIF.	SITE
7	ACT	Test the memory cards from the memory level of the MAP terminal. **a.** >MEMORY;TST ALL **b.** >QUIT	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
8	ACT	After completion of the tests, check the CM logs and verify that no CM112 logs have been reported during the test.  **CHECK FOR CM112 LOGS** **If needed, resolve any problems and repeat steps 7 and 8 before continuing.**	SITE
9	ACT	SYNC the CPUs from the CM level of the MAP terminal. >SYNC >YES {for confirmation}	SITE
10	ACT	After receiving the Synchronization Successful message, verify that no faults are displayed at the CM or memory levels of the MAP terminal (shows all dots and no X or f).	SITE
11	INACT	At the inactive RTIF Terminal, release the jam. RTIF> \RELEASE JAM	SITE
12	ACT	Wait 5 minutes, then switch activity of the CPUs from the CM level. >SWACT >YES {for confirmation}	SITE
13	BOTH	 **REPEAT STEPS ON INACTIVE CPU** **Repeat steps 1 through 12 on the newly inactive CPU before continuing.**	SITE
14	BOTH	Verify the CPUs remain in SYNC and that neither CPU is jammed.	SITE
15	ACT	Match the memory from the Memory level of the MAP terminal. **a.** >MEMORY;MATCH ALL **b.** >QUIT	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
16	ACT	Perform a REX test long from the CM level. (Repeat for each CPU initially active.) **a.** >REXTST LONG **b.** >YES {for confirmation} ***Note:*** CPU SYNC, Message Controller (MC), and Subsystem Clock (SSC) states will change. The SuperNode switch will be out of SYNC for at least 60 minutes.	SITE
17	ACT	After completion of the test, verify the test results: >QUERYCM REXRESULT The CPUs should be back in SYNC with no REX alarms at the CM level or on the main MAP display header.  **IF TEST FAILED...** **Contact your next level of support to resolve any problems and repeat steps 16 and 17 before continuing.**	SITE
18	ACT	Wait 5 minutes, then switch activity of the CPUs from the CM level. >SWACT >YES {for confirmation}	SITE
19	ACT	 **REPEAT STEPS WITH OTHER CPU** **Repeat steps 16 and 17 with the other CPU active before continuing.**	SITE
20	ACT	Perform an image test from the CMMNT level of the MAP terminal. **a.** >CMMNT **b.** >IMAGE >YES {for confirmation} **c.** >QUIT	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
21	ACT	After completion of the test, check for CM logs indicating pass or fail message.	SITE
		IF TEST FAILED... **Clear the problem and repeat step 19 before continuing.**	
22	ACT	Perform a test on each Command Module Interface Card (CMIC) link as follows: ***Note:*** Always synchronize the CMs before doing a switch of activity . Do not cold SWACT to the load. For security purposes, have current images on both disks. **a.** Ensure the current image is on both SLMs. **b.** List files of both SLMs on the MAP terminal used to perform the LDMATE. **c.** Change REX Test: Ensure the REX does not run by resetting the NODEREXCONTROL start time two hours behind the current time (Table OFCVAR; POS NODEREXCONTROL). Record the original time setting for use in a subsequent step. **d.** >DISKUT;LF S01D;LF S01DIMAGE Make note of image filename of CM. **e.** Ensure the LDMATE CM is the inactive CM. **f.** Match CM Memory and drop sync: >MAPCI;MTC;CM;MEMORY; MATCH ALL. When done, do the following: RTIF> \JAM {from inactive RTIF} RTIF> YES {for confirmation} >DPSYNC {from the MAP terminal} >YES {for confirmation} >QUIT ALL Await flashing A1 on inactive RTIF, then continue.	SITE SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
	ACT	**g.** Perform loadmate as follows: **i.** You cannot do the LDMATE DIRECT DISK command until the DLOG inactive device is demounted from the DIRP level. After the demount is done, do the following: >LDMATE DIRECT DISK <filename_CM> Filename has to be in ITOC. This loads the same SLM as the inactive CM (CPU 0 SLM 0) (6- to 10-minute duration). **or** >LDMATE VIAMS <filename_CM> This loads from the other plane SLM (CPU 0-SLM 1) (one- to three-hour duration). **ii.** When loadmate is completed, the inactive CM should be initialized to flashing A1 as indicated by the inactive RTIF. On the terminal where loadmate was performed, a successful response is given. If the response is not successful, collect the logs and call your next level of support.	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
		h. Before any SWACT, perform the sync up process: **i.** >MAPCI;MTC;CM;SYNC >YES {for confirmation} RTIF> \RELEASE JAM {Remove jam on inactive RTIF} **ii.** {Ensure that both RTIFs are flashing A1 before continuing.} >SWACT {from the MAPCI;MTC;CM} >YES {for confirmation} **iii.** >MEMORY;MATCH ALL **iv.** RTIF> \JAM {Jam the inactive from the RTIF} **v.** >DPSYNC >YES {for confirmation} **vi.** Await flashing A1 on inactive RTIF **i.** Repeat substeps **g** and **h** for the opposite CM.	
		 **REPEAT SUBSTEPS** **After repeating substeps g and h for the opposite CM, continue with substep j.**	
		j. Upon completion of testing, remove jam on inactive RTIF and bring switch back into sync with the following: RTIF> \RELEASE JAM >SYNC >YES {for confirmation}	
23	ACT	Busy the Slave MS from the MS level of the MAP terminal. >MS;BSY <x> ***Note:*** **x** refers to the Slave MS (look under Clock field).	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
24	ACT	Test the MS from the MS level. >TST <**x**>	SITE
25	ACT	After completion of the test, the results of the test are displayed and MS101 log is printed. Examine test results.	SITE
		 **IF THE TEST FAILED...** **Resolve any problems and repeat steps 23 and 24 before continuing. If the test failure persists, contact your next level of support.**	
26	ACT	Return the busied MS to service. >RTS <**x**>	SITE
27	ACT	Wait 5 minutes to ensure the MS can run without errors, then switch master clocks. (Both MSs need to be online). >SWMAST	SITE
28	ACT	 **REPEAT STEPS** **Repeat steps 22 through 26 to test the other MS before performing QUIT ALL.**	SITE
		>QUIT ALL	
29	ACT	Set NODEREXCONTROL back to its original value (see substep **c** in step **22**).	SITE
30	ACT	Copy all needed SFDEV files one at a time from SFDEV onto a labelled, clean scratch tape. Erase only site files from SFDEV. ***Note:*** If site personnel have a question about a file needed for the software delivery, do not erase it from SFDEV. LISTSF INFO ALL will show who owns SF file.	SITE

—continued—

Procedure 1-2
Pre-application check of the CM (continued)

Step	Node	Action	Responsibility
31	ACT	PATCH VERIFICATION. The site is responsible for reviewing a current list of from-side patches needed for the application. This list can be obtained from NTAC.BOARD or the regional software delivery coordinator.	SITE
32	ACT	Ensure the latest applicable Peripheral Module loads (Regular and XPM) and, if applicable, XPM patches are on the same disk as the XPM loads.	SITE
33	ACT	On the DDU used for primary billing collection (OCC), perform routine maintenance on the disk to ensure it is functioning properly. If excessive bad blocks are present, reformat the disk.	SITE
34	ACT	Ensure all Peripheral Modules are loaded and patched according to the *Peripheral Software Release* document. The following commands will generate an SFDEV file indicating the required status: >BCSUPDATE >PMAUDIT {message may take 30–60 seconds} >QUIT >LISTSF INFO {note number of file lines} >PRINT PMAUDIT $FILE ***Note 1:*** It is recommended that all new XPM patches be put on the XPM disk volume. ***Note 2:*** It is recommended that all new ISN patches be put on the disk volume containing the ISN node load (MS, ENET, LIM, EIU and LIU7). ***Note 3:*** It is recommended that all CM patches should not be included on either of the above volumes.	SITE

—end—

TABAUDIT data consistency check procedure

Purpose

For all offices using software release LTT00008, perform this procedure 10 days prior to the software delivery date. This allows time to correct any table data problems that might be found.

Procedure 1-3 verifies table data integrity using TABAUDIT. For more details on how to use TABAUDIT, refer to Appendix A.

Guidelines

The Nortel SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch and FP maintenance.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

Procedure

The steps listed below detail the TABAUDIT data consistency check. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-3
TABAUDIT data consistency check

Step	Node	Action	Responsibility
1	ACT	Verify table data in all tables using TABAUDIT. Send output to a desired SITE device (for example, D000SCRATCH). (This may take several hours.) Output will be sent to the device as a SUMMARY$FILE. A file for any failed table will also be created. If no device is specified, the output defaults to the screen. At the CI level, enter the following commands: >TABAUDIT ***Note:*** This puts you in the TABAUDIT level. >INCLUDE ALL >EXECUTE <device name> >YES ***Note:*** This may take a few hours to perform. Certain tables, such as DATASIZE or STDPRT, generate additional outputs as they are being checked. This is normal.	SITE
2	ACT	Review the summary output and any failed table files. If any table fails, contact the translations engineer who can help in resolving any data consistency issues. To verify a corrected table, run TABAUDIT and specify the corrected table. At the CI level, enter the following commands: >TABAUDIT ***Note:*** This puts you in the TABAUDIT level. >INCLUDE <failed table name> >EXECUTE <device name> >YES Continue until all tables have been corrected.	SITE

—continued—

Procedure 1-3
TABAUDIT data consistency check (continued)

Step	Node	Action	Responsibility
3	ACT	When all tables have been corrected, perform a TABAUDIT ALL again. At the CI level, enter the following commands: >TABAUDIT ***Note:*** This puts you in the TABAUDIT level. >INCLUDE ALL >EXECUTE <device name> >YES This is to ensure that no changes performed in step **2** have adversely affected other tables.	SITE

—end—

Site responsibilities the day of software delivery

Purpose

This procedure ensures that the system is ready for the software application, and, in the event of trouble, you can revert to the original software load. You ensure that all data consistency checks are resolved, save office images for backup, and record switch information.

Constraints

Site personnel must complete this procedure just prior to the SDE contacting the site for the scheduled software upgrade.

Guidelines

Follow Procedure 1-4 to complete the site responsibilities on the day the software is delivered.

Procedure

The steps listed below detail the site responsibilities the day of software delivery. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-4
Site responsibilities the day of software delivery

Step	Node	Action	Responsibility
1	ACT	Verify that all issues from Procedure 1-3 "TABAUDIT data consistency check" have been resolved.	SITE
2	ACT	Next, DUMP OFFICE IMAGES for backup: one SuperNode image to SLM disk, and backup the file to SLM tape cartridge.	SITE
3	ACT	Run DATADUMP to output important switch information for future reference as follows: ***Note:*** This command prompts the user to answer several questions. Respond to the prompts accordingly. **a.** >LOGUTIL;STOPDEV <**printer**> ***Note:*** **printer** refers to the available printer to be used for recording. This makes sure the logs are stopped on the device. **b.** >QUIT **c.** >RECORD START ONTO <**printer**> **d.** >BCSUPDATE >DATADUMP **e.** >RECORD STOP ONTO <**printer**>	SITE

CM drop sync procedure

Purpose

This procedure initiates software delivery by placing the switch into simplex mode (drop sync). The new software is then loaded into the inactive CPU. This procedure addresses dropping sync for the SuperNode switch.

Constraints

The following constraints apply to performing this procedure.

- Review all applicable bulletins (One Night Process, Dump and Restore, Patch, and ETAS [Emergencey Technical Assistance Service] Warning Bulletins). If necessary, contact your next level of support to obtain the required bulletins.
- Personnel responsible for performing any of the steps in this procedure must be thoroughly familiar with the *complete* procedure before starting.
- The procedure contains both SDE and site activities required for the software delivery.

Guidelines

Use Procedure 1-5 to put the switch into simplex mode and load the inactive CPU with the new release load.

The Nortel Networks SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch and FP maintenance.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

CAUTION
Loss of service
Site personnel should not attempt any step until the SDE requests that a step be done. Failure to do so could cause loss of billing, call processing interruption, or system restarts.

In case of emergency

If an outage or degradation occurs, call the appropriate technical support. If the outage or degradation is not service affecting, use your normal escalation policy.

Materials required

This procedure uses two terminals: one for the active processor and one for the inactive processor. Label one terminal *ACT* and the other *INACT.*

Procedure

The steps listed below detail the CM drop sync procedure. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-5
CM drop sync

Step	Node	Action	Responsibility
1	ACT	Contact control center (if required) and the site on the voice phone and dial-up both modems on the modem terminals.	SDE
2	ACT	Log in the users and if applicable, set LOGINCONTROL as follows: **a.** <**break**> **b.** ?LOGIN **c.** Enter user name and password {system response} ><**username**> ><**password**> ***Note:*** **username** and **password** can both be found on the *Pre-application report*. **d.** >LOGUTIL;STOP;STOP {Note the name of this **device**} **e.** >QUIT **f.** >LOGINCONTROL <**device**> QUERY **g.** Verify *Open Condition Logout* is *N*. If not, retain the original status and enter: >LOGINCONTROL <**device**> OPENFORCEOUT FALSE Verify *Max Idle Time* is *Forever*. If not, retain original status and enter: >LOGINCONTROL <**device**> MAXIDLETIME FOREVER.	SDE

—continued—

Procedure 1-5
CM drop sync (continued)

Step	Node	Action	Responsibility
3	ACT	 **REPEAT FOR OTHER TERMINAL** **Repeat step 2 for the other terminal device before continuing.** ***Note:*** The current LOGINCONTROL terminal settings will be saved when TABXFR is started and will be restored back to the existing saved settings at the end of POSTSWACT.	SDE
4	ACT	Verify processor stability as follows: **a.** >LOGUTIL;OPEN TRAP; BACK ALL >OPEN CM;BACK ALL >OPEN SWER;BACK ALL >OPEN MM;BACK ALL >OPEN MS;BACK ALL >OPEN INIT;BACK ALL >OPEN MOD;BACK ALL **b.** >QUIT ***Note:*** Do not continue until all logs have been explained.	SDE
5	BOTH	Advise the site that all DMOs must halt and the site is to inform all site personnel of the same. >JF STOP	BOTH
6	ACT	Perform the SuperNode drop sync procedure as follows: **a.** >MAPCI;MTC;CM;MEMORY;MATCH ALL **b.** Verify CPU 0 is active (field *Act* will have *CPU 0)*.  **IF CPU 0 IS ACTIVE...** **Skip ahead to substep e if CPU 0 is active. Otherwise, continue with substep c.**	SDE

—continued—

Procedure 1-5
CM drop sync (continued)

Step	Node	Action	Responsibility
		Note: Making CM 1 the *inactive* CPU is a convention followed throughout this document. MS 1 is made *slave*, and SLM 1 is used to load the new image. This is done to enhance consistency in following the procedures. However, this is not an absolute requirement. The SDE may choose to make CM 0 the inactive CPU with its corresponding MS and SLM components.	
		c. >SWACT >YES {for confirmation}	SDE
		d. Wait five minutes.	
	INACT	**e.** At the CM 1 RTIF, do the following: RTIF> \JAM RTIF> YES {for confirmation}	SITE
	ACT	**f.** >CM;DPSYNC {from CM level) >YES {for confirmation}	SDE
	INACT	**g.** The site must tell the SDE when the inactive CM is flashing A1.	SITE
	ACT	**h.** >QUIT MAPCI	SDE
7	ACT	Perform the SuperNode loadmate procedure as follows: **a.** List the SLM disk volume onto which the new image files (both MS and CM load files) were previously copied (restored). **i.** >DISKUT **ii.** Do either: >LF S00D<**volume** > or: >LF S01D<**volume**> **iii.** >QUIT ***Note:*** **volume** refers to the SLM volume where the datafill image was restored.	SDE

—continued—

Procedure 1-5
CM drop sync (continued)

Step	Node	Action	Responsibility
		iv. Verify the image file for the CM on the SLM disk volume is correct and is registered in ITOC. **v.** If the CM image file was not previously copied onto the SLM disk volume, loadmate from SLM tape. **b.** Loadmate using the SLM device. **i.** To load from the disk, perform: >LDMATE DIRECT DISK <**filename**_CM> {The CM load file must be on the SLM 1 disk for this to work.} **or** To load from the tape, insert the undatafilled image cartridge into the SLM 1 tape drive, then perform: >LDMATE DIRECT TAPE 2 {loads second file on the tape} ***Note:*** If there are any opened files on the SLM device with the image, LDMATE DIRECT will fail with the following message: `DIRECT LOADMATE OPERATION FAILED: File System operations must be halted before initiating loadmate.` If you get this error, either close the open file(s), or else loadmate using the VIAMS option. (The CM load file must be restored on the SLM 0 disk for this to work.) **ii.** >LDMATE VIAMS <**filename**_CM>	SDE

—continued—

Procedure 1-5
CM drop sync (continued)

Step	Node	Action	Responsibility
	INACT	**c.** Wait for LDMATE to complete and inactive processor to flash A1. ***Note:*** While waiting for loadmate, SITE may display the patches in store file or may copy the patches to the new patch tape.	BOTH
8	ACT	Log into the inactive processor as follows: **a.** >MATELINK RTS **b.** >MATEIO **c.** >MATELOG ME	SDE

—continued—

Procedure 1-5
CM drop sync (continued)

Step	Node	Action	Responsibility
	INACT	**d.** Enter user name and password {mate-side response} Mate>OPERATOR OPERATOR **e.** Mate>LISTSF ALL Mate>SETDATE **f.** Mate>IMAGENAME **g.** Mate>SETLOGMSG '<**text**>' ***Note 1:*** **text** becomes the new office header on the new load. Change only the application DATE, IMAGENAME followed by 7 numbers and software release level. Ensure all symbols at the beginning and end of the header message remain the same (including spaces). ***Note 2:*** If you get the active side prompt (>), enter the following command: >WHILE (TRUE) (SLEEP 100 MINS) **h.** Mate>LOGUTIL OPEN T;BACK ALL Mate>OPEN CM;BACK ALL Mate>OPEN INIT;BACK ALL Mate>OPEN SWERR;BACK ALL Mate>OPEN MOD;BACK ALL ***Note:*** Check for store parity traps, MM (mismatch), and store checksum logs. Do not continue until all logs have been explained. ***Note:*** If you intend to continue using the Patcher utility, use the following steps to disable PRSM Mate>TOOLSUP;ACCESS ON PRSM_ON_OR_OFF Mate>PRSMDBG Mate>DISABLEPRSM **i.** Mate>QUIT *{quits out of LOGUTIL}*	SDE

—end—

TABXFR data transfer procedure

Purpose

This procedure is required to move the data from the old load to the new load. The TABXFR data transfer procedure is used in software release NCS05 and higher loads. Appendix A contains a summary of TABXFR commands.

Constraints

The following constraints apply to performing the TABXFR procedure steps.

- Personnel responsible for performing any of the steps must be thoroughly familiar with the complete procedure before starting it.
- The procedures contain both SDE and site activities required for the ONP software delivery.
- These procedures should only be performed on site on the night of the software delivery.

Guidelines

ATTENTION
Verify that Office Parameter SR60_BURST_MODE_SUPPORTED in Table OFENG is set to 'Y' before you begin the TABXFR procedure.

Use Procedure 1-6 to move the data from the old load to the new load.

The Nortel SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch and FP maintenance.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

CAUTION
Loss of service
Site personnel should not attempt any step until the SDE requests that a step be done. Failure to do so could cause loss of billing, call processing interruption, or system restarts.

CAUTION
The Drop sync procedure must be performed prior to starting this procedure.
The system must be in simplex mode to perform the TABXFR. Also, the inactive CM must be jammed.

CAUTION
Prior to login on the mate side, wait until the inactive processor is stable with a flashing A1.
Waiting ensures that any initialization process is complete. The wait may be 30 to 60 seconds after achieving the flashing A1 status.

Materials required

The TABXFR procedure uses two terminals: one for the active processor and one for the inactive processor. Label one terminal *ACT* and the other *INACT.*

Procedure

The steps listed below detail the TABXFR data transfer procedure. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-6
TABXFR data transfer

Step	Node	Action	Responsibility
1	ACT	The following must be done *after* the completed LDMATE: **a.** >BCSUPDATE **b.** >RUNSTEP MATE_MEM_CHECK The following response to the RUNSTEP command occurs: `** WARNING–Procedure will be executed out of sequence.` `Do you wish to continue?` (Enter Y or YES) At this prompt, you should enter YES to continue unless faulty hardware exists (see CAUTION below).  **CAUTION** **SWACT to faulty hardware** TABXFR will perform a mate-side memory check. The purpose of the check is to prevent a SWACT to faulty hardware on the inactive side. If this test fails, *do not continue.* Immediately notify your next level of support.	SDE
2	ACT INACT	Use the following command to turn on TRACECI at the device from which the command is entered. TRACECI may also be monitored on another device using TRACECI DEVICE <**device**>. **a.** >TRACECI ME **b.** Mate>TRACECI TEST 'THIS IS A TEST' **c.** Verify "THIS IS A TEST" is output on the device selected. If not, repeat substep a.	SDE SDE

—continued—

Procedure 1-6
TABXFR data transfer (continued)

Step	Node	Action	Responsibility
	ACT	**d.** Record start (from traced terminal device) onto the device specified by site personnel. >RECORD START ONTO <**device**> ***Note:*** For additional command syntax, refer to the TABXFR summary in Appendix A.	SDE
3	INACT	Set up and initialize the TABXFR platform used to perform the table transfers. **a.** Mate>TABXFR TABXFR: {system response} **b.** Mate>STOPIF 1 {Table transfer will stop after this number of failures.} **c.** Mate>LIMIT 25 {Limits the number of failures allowed on a table.} **d.** Mate>SETUP STANDARD {this is the default} TABXFR type set to: STANDARD {system response} ***Note:*** The STATUS command can be used at any time while in the TABXFR increment to display information about the setup and status of the data transfer.	SDE
4	INACT	Start the data transfer using TABXFR as follows.  **CAUTION** **Warning: Verify OFFICETYPE value** Verify that the value for OFFICETYPE in TABLE OFCSTD is set to OFF500. Mate>STARTXFR TABXFR performs an automatic restart reload after certain tables are transferred. Following the automatic restart, TABXFR automatically starts transferring the next table listed in table DART.	SDE

—continued—

Procedure 1-6
TABXFR data transfer (continued)

Step	Node	Action	Responsibility
5	ACT	If any table fails to restore properly on the mate side, TABXFR will stop (depending on STOPIF and LIMIT) and will identify the headtable/subtable position in error. Check with site personnel for known table problems. For any table in error, investigate the problem by entering on the ACTIVE side: >DELTA **<table>** NOFILE *{compares old and new tuples}* or >DELTA **<table>** SUB **<subtable>** NOFILE	SDE
6	INACT	Resolve table failures before continuing. Login to mate and restart the TABXFR process if needed. Enter the following commands to step over the manually updated error tables. Mate>TABXFR Mate>XREPORT Mate>STARTXFR ***Note:*** Check with site personnel before executing the XREPORT command.	SDE
7	INACT	TABXFR is finished when you receive the following message: `INACT – data move completed`	SDE
8	INACT	Generate a final data transfer report. This includes the table exception report. Mate>REPORT Mate>QUIT *{quits out of TABXFR}*	SDE

—continued—

Procedure 1-6
TABXFR data transfer (continued)

Step	Node	Action	Responsibility
9	INACT	Mate>TRAPINFO If a trap has occurred, do not continue until the trap is explained.	SDE
10	ACT	Get a hard copy of DRTIME statistics if needed at this time. Otherwise, obtain the DRTIME results during the POSTSWACT BEGIN_TESTING (see step **12** in Procedure 1-9 “SWACT and POSTSWACT”). >DRTIME PRINT ***Note:*** DRTIME provides statistics on the application. If requested, the information should be forwarded to the appropriate Nortel department. Mate>DRTIME PRINT	SDE

—end—

Upgrade MS procedure

Purpose

This procedure upgrades the MS from the existing release to the new release.

Constraints

The following constraints apply to performing this procedure:

- Review all applicable bulletins (One Night Process, Dump and Restore, Patch, and ETAS Warning Bulletins). If necessary, contact your next level of support to obtain the required bulletins.
- Personnel responsible for performing any of the steps must be thoroughly familiar with the entire procedure before starting it.
- The procedure contains both SDE and site activities required for the software delivery.

Guidelines

Use Procedure 1-7 to upgrade the MS.

The Nortel Networks SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of DMS-500 switch.

The responsibilities noted can be overridden by mutual consent between the SDE and the site personnel.

CAUTION
Loss of service
Site personnel should not attempt any step until the SDE requests that a step be done. Failure to do so could cause loss of billing, call processing interruption, or system restarts.

CAUTION
ISN loads
All ISN nodes must have been loaded with the latest loads.

CAUTION
Loss of INACTIVE load possible
Do not busy MS while in split mode.

In case of emergency

If an outage or degradation occurs, call the appropriate technical support. If the outage or degradation is not service affecting, use your normal escalation policy.

Materials required

This procedure uses two terminals: one for the active processor and one for the inactive processor. Label one terminal *ACT* and the other *INACT.*

Procedure

The steps listed below detail the upgrade MS procedure. Be sure to read any Notes and “if” statements in the procedure steps carefully.

Procedure 1-7
Upgrade MS

Step	Node	Action	Responsibility
1	ACT	List the SLM disk volume onto which the new image files (both _MS and _CM loads) were previously restored (copied). **a.** >DISKUT >LF S00D<volume> { or LF S01D<volume> } ***Note:*** <volume> is the SLM disk volume with the image files. **b.** Verify the image files (both _MS and _CM) on the SLM disk volume are correct. Be sure to use the image files provided on the new image tape. ***Note:*** To help you understand the image filenames, you may use the DISPMS <filename> command which displays the image header information.	SDE
2	ACT	At the MS level of the MAP terminal, determine which MS contains the SLAVE clock. (Look for “slave” under the CLOCK field.) >MAPCI;MTC;MS	SDE
3	ACT	***Note:*** Complete this step only if the MS is being upgraded the night of the ONP. Busy the CM MATELINK to cancel the split mode. >MATELINK BSY >YES	SDE
4	ACT	Busy the MS with the slave clock. >BSY <MS#>	SDE
5	ACT	Load the MS giving the name of the _MS load file listed in Step 1 above as the <filename> in the command below: >LOADMS <MS#> <filename> >YES {for confirmation}	SDE

—continued—

Procedure 1-7
Upgrade MS (continued)

Step	Node	Action	Responsibility
6	ACT	When prompted, perform an out-of-service test on the MS just loaded. >TST <MS#> {on the OOS MS} Ensure the test passes with no faults. Determine the cause for any failure, fix the fault, and repeat the test.  **CAUTION** **Do not proceed unless NO faults reported** Replace cards if necessary and repeat the test. Contact site supervisor if the test fails repeatedly.	SDE
7	ACT	When the test passes, return the MS to service. >RTS <MS#> {*not* the OOBAND}	SDE
8	ACT	Wait five minutes to ensure the clocks are stable and to allow the hardware audit to run. Both MSs should be in service.	SDE
9	ACT	Switch MS clock mastership. >SWMAST	SDE
10	ACT	Monitor MS logs for ten minutes to ensure stability.	SDE
11	ACT	 **REPEAT STEPS TO UPDATE OTHER MS** **Repeat steps 4 through 10 to update the load in the other MS before continuing.**	SDE
12	ACT	>PRSM;DBAUDIT MS; REPORT DEST MS	SDE
13	ACT	>QUIT MAPCI	SDE

—end—

PRESWACT procedure

Purpose

This procedure prepares for the CM activity switch to the new software load. Appendix A contains a summary of the PRESWACT command.

Constraints

The following constraints apply to performing this procedure.

- Review all applicable bulletins (One Night Process, Dump and Restore, Patch, and ETAS Warning Bulletins). If necessary, contact your next level of support to obtain the required bulletins.
- Personnel responsible for performing any of the steps must be thoroughly familiar with the entire procedure before starting it.
- The procedure contains both SDE and site activities required for the software delivery.

Guidelines

Use Procedure 1-8 to prepare for the CM activity switch to the new software load.

The Nortel Networks SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch and FP maintenance.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

CAUTION
Loss of service
Site personnel should not attempt any step until the SDE requests that a step be done. Failure to do so could cause loss of billing, call processing interruption, or system restarts.

CAUTION
ISN loads
All ISN nodes must have been loaded with the latest loads.

In case of emergency

If an outage or degradation occurs, call the appropriate technical support. If the outage or degradation is not service affecting, use your normal escalation policy.

Materials required

This procedure uses two terminals: one for the active processor and one for the inactive processor. Label one terminal *ACT* and the other *INACT.*

CAUTION
Ensure both MSs are loaded
Ensure both MSs have been loaded with the new load.

Procedure

The following steps detail the PRESWACT procedure. Be sure to read any Notes and "if" statements in the procedure steps carefully.

Procedure 1-8
PRESWACT

Step	Node	Action	Responsibility

1	ACT	Perform PRESWACT of BCSUPDATE as follows:
		
		a. >BCSUPDATE
		
		b. Verify that the procedure status is set correctly. If you have any questions, contact next level of support.
		
		>STATUS PRESWACT
		
		c. >PRESWACT
		
		PRESWACT runs all steps required before the CC activity switch and flags them as completed when they pass. If any error occurs, PRESWACT stops and give instructions. If this is the case, follow PRESWACT instructions to correct the problem (contact technical support, if necessary).
		
		For example:
		
		`TABLE_DELTA executing`
		`:`
		`Table AMAOPTS *** Checksum incorrect, keys incorrect`
		`:`
		`TABLE_DELTA not complete`
		`ACT - Error: Inactive table data did not match.`
		`Correct error condition. Enter Preswact to continue.`
		
		d. For any table in error, investigate the problem by entering:
		
		>DELTA <**table**> NOFILE {compares new/old tuples}
		
		or
		
		>DELTA <**table**> SUB <**subtable**> NOFILE
			SDE

—continued—

Procedure 1-8
PRESWACT (continued)

Step	Node	Action	Responsibility

	ACT	**e.** To continue, run PRESWACT again by entering:
		
		>PRESWACT
		
		Note 1: A hardware conversion (such as DTC/DTCI) that is scheduled concurrently with the software upgrade requires certain table changes, additions, or deletions. PRESWACT detects a mismatch between the old and new data and stops, indicating a TABLE_DELTA error. If this is the case, confirm the table differences are due to the conversion, resolve any differences, and run PRESWACT again (type >PRESWACT) to continue.
		
		Note 2: PRESWACT may also display an informative message without stopping. When this occurs, it is not considered an error; rather, it is an indication that something is different between the old and new loads. Note the information displayed, and at a convenient stopping point, compare the old and new loads to understand and validate the differences.
		
		For example:
		
		`TABLE_DELTA executing`
		`:`
		`Table ATTCONS Checksum incorrect, keys match`
		`:`
		`TABLE_DELTA complete`
			SDE

2	ACT	After PRESWACT is completed, enter: >SWACTCI	SDE
3	ACT	>STATUSCHECK **IF you wish to abort the procedure after the next step, complete procedure 3–1, the PRESWACT interrupt procedure in Appendix A.**	SDE

—continued—

Procedure 1-8
PRESWACT (continued)

Step	Node	Action	Responsibility
4	ACT	Ensure STATUSCHECK passes (both sides match); repeat if required. Then, return to CI level. >QUIT ALL	SDE
5	INACT	Prepare processors for the activity switch and prepare to remove the JAM from the Inactive CM.	SITE
6	ACT	Verify rotation of the active OCC and OM billing files from the DIRP level.	SDE
7	INACT	From the inactive RTIF, enter: RTIF> \RELEASE JAM Confirm the inactive processor is flashing A1.	SITE

—end—

SWACT and POSTSWACT procedure

Purpose

This procedure changes switch activity (SWACT), tests the new load, and completes the software delivery process. Appendix A contains command summaries of SWACT and POSTSWACT.

CAUTION
Service interruption
This procedure is critical. Call processing ceases until step 2 is complete; calls originating *prior* to this step are not affected. All personnel must be aware of their tasks. Work quickly to minimize downtime after the SWACT is performed.

Constraints

The following constraints apply to performing this procedure.

- Review all applicable bulletins (One Night Process, Dump and Restore, Patch, and ETAS Warning Bulletins). If necessary, contact your next level of support to obtain the required bulletins.
- Personnel responsible for performing any of the steps must be thoroughly familiar with the complete procedure before starting it.
- Following the SWACT, the passwords for user's ADMIN and OPERATOR will be restored, respectively, as "ADMIN" and "OPERATOR." Other user names and passwords will be restored as they were on the old load.

Guidelines

Use Procedure 1-9 to prepare for the CM activity switch to the new load.

The Nortel Networks SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

CAUTION
Loss of service
Site personnel should not attempt any step until the SDE requests that a step be done. Failure to do so could cause loss of billing, call processing interruption, or system restarts.

CAUTION
System restart
Disable any periodic testing. Failure to comply may result in a system restart. No activity is performed on SuperNode CM, MS, or CLOCK until it is cleared by the SDE.

CAUTION
REX bypass
Verify NODEREXCONTROL in table OFCVAR for values shown to ensure times identified will not interfere with application window.

In case of emergency

If an outage or degradation occurs, call the appropriate technical support. If the outage or degradation is not service affecting, use your normal escalation policy.

Materials required

This procedure uses two terminals: one for the active processor and one for the inactive processor. Label one terminal *ACT* and the other *INACT.*

Procedure

The following steps detail the SWACT and POSTSWACT procedures. Be sure to read any Notes and “if” statements in the procedure steps carefully.

Procedure 1-9
SWACT and POSTSWACT

Step	Node	Action	Responsibility
1	ACT	Prepare processors for the activity switch as follows: **a.** >LOGUTIL;STOP **b.** >DELDEVICE <**device**> ***Note:*** **device** can be found on the *Pre-application report*. It can be either port to which logs will be routed. **c.** >ADDREP <**device**> SWCT CM MS DIRP IOD **d.** >START **e.** >LEAVE	SDE
2	ACT	Switch activity by invoking CC Warm SWACT as follows: ***Note 1:*** Wait a *minimum* of 10 minutes after the *completion* of the last restart on the inactive side before entering the NORESTARTSWACT command. ***Note 2:*** Critical activity begins with this step. Ensure no periodic testing is scheduled before continuing. **a.** >BCSUPDATE **b.** >SWACTCI **c.** >DATE **d.** >NORESTARTSWACT	SDE

		Next, a message is displayed and you are prompted if you want to continue or not. For example:
		`ACTIVE DEFAULT SETTINGS:`
		`NOMATCH set OFF`
		`Do you wish to continue?`
		`Please confirm (“YES” “Y”, “NO”, or “N”):`
		`YES`
		`All Pre–SWACT checks completed. Starting Warm SWACT now.`
		`Look for activity switch within 10 mins.`
		`******** The cursor will not be returned ********`
		`******** unless a critical failure occurs. ********`
		`******** Now monitoring Warm SWACT messages. ********`	

—continued—

Procedure 1-9
SWACT and POSTSWACT (continued)

Step	Node	Action	Responsibility
		 **CAUTION** **Do not jam RTIF** Do not jam inactive side (RTIF) unless instructed by the SDE.	
3	ACT	Site must tell the SDE when the new active processor is again flashing A1 and is active. ***Note 1:*** At this point, the activity switch is over and CC Warm SWACT is finished. *Work quickly to complete the following step*. (The next step restarts billing and recovers peripherals.) ***Note 2:*** After the CPUs switch activity, you are logged off the MAP terminal. A dollar sign ($) appears and the cursor moves one space to the right.	SITE
4	ACT ACT	Login, confirm the date and time, and start POSTSWACT as follows: **a.** <**break**> **b.** ?LOGIN Enter user name and password {system response} **c.** ><**username**> ><**password**> **d.** >DATE ***Note:*** If the date and time are incorrect, inform the SDE immediately.	BOTH
5	ACT	>BCSUPDATE	SDE

—continued—

Procedure 1-9
SWACT and POSTSWACT (continued)

Step	Node	Action	Responsibility
6	ACT	>POSTSWACT ***Note 1:*** POSTSWACT runs all steps required after the activity switch, and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. In this case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue. ***Note 2:*** POSTSWACT recovers PRIMARY billing subsystems (OCC). Confirm that affected DIRP subsystems were successfully activated. Then, the site may manually bring up PARALLEL subsystem(s) as required. ***Note 3:*** If an abort becomes necessary due to critical test failures, revert to the old load using Procedure 1-10 “Revert to the old load, CM.” Otherwise, continue.	SDE BOTH BOTH
7	ACT	POSTSWACT recovers PRIMARY billing subsystems (OCC). Confirm that affected DIRP subsystems were successfully activated. Then, the site may manually bring up PARALLEL subsystem(s) as required.	BOTH
8	ACT	If an abort is not necessary, continue with step **9** below.	SDE
		IF CRITICAL THE TEST FAILS... **If an abort becomes necessary due to critical test failures, perform the “Revert to old load, CM” Procedure 1-10.**	
9		Ensure the load has been accepted by the site.	BOTH

—continued—

Procedure 1-9
SWACT and POSTSWACT (continued)

Step	Node	Action	Responsibility
10	ACT	After site personnel turn billing subsystems back up and the SDE agrees that all tests pass satisfactorily, continue as described below. ***Note:*** If no problems are encountered, BCSUPDATE stops after BEGIN_TESTING and waits until the site accepts the new software load. Obtain DRTIME results from TABXFER at this time if not already obtained before starting PRESWACT. >DRTIME PRINT ***Note:*** DRTIME provides statistics on the application. If requested, the information should be forwarded to the appropriate Nortel Networks department.  **CAUTION** **Do not proceed if installing hardware.** If any hardware is being upgraded or installed in conjunction with this procedure, consult your next level of support before proceeding with the SYNC.	BOTH
11	ACT	After the site accepts the new software load following critical Call Thru testing, finish POSTSWACT of BCSUPDATE. >BCSUPDATE >POSTSWACT >QUIT ***Note:*** At this point, the BCSUPDATE will run all required POSTSWACT steps and flag them as complete when they pass. If any failures occur, follow BCSUPDATE instructions and enter POSTSWACT after the problem is corrected.	SDE
12	ACT	Verify the table DSLIMIT tuple STOREFS was reset correctly.	SDE
13	ACT	After POSTSWACT has completed, sync as follows: >MAPCI;MTC;CM >SYNC >YES {for confirmation} >QUIT MAPCI	SDE

—continued—

Procedure 1-9
SWACT and POSTSWACT (continued)

Step	Node	Action	Responsibility
14	ACT	Clean up SFDEV by erasing any application-related files (for example: NEW_DIRP_REC, FEATDATA, and all patches).	SDE
15	ACT	Because the user's ADMIN and OPERATOR passwords may have changed from the original, NTAC security may change these passwords at this time.	SITE
16	ACT	Start journal file and verify it started as follows: >JF START >MAPCI;MTC;IOD;DIRP >QUERY JF ALL ***Note:*** QUERY JF should respond with AVAIL. If a standby device is being used, both active and standby volumes should be marked AVAIL. >QUIT ALL	BOTH
17	ACT	Dump office images of the new load for backup—one image to SLM disk—and backup the file to SLM tape cartridge.	SITE
—end—			

Revert to old load, CM procedure

Purpose

This procedure reverts to the original software load.

CAUTION
This procedure is critical. All personnel must be aware of their tasks.

Constraints

The following constraints apply to performing this procedure:

- Do not perform maintenance activities on CM, MS, or CLOCK until cleared by the SDE. Failure to comply may result in a system restart.
- Do not proceed until online support agrees. Agreement is necessary for successful completion of this process.
- Enter commands that refer to the active or inactive CPU from the RTIF.

Guidelines

Use Procedure 1-10 to revert to the old load of the CM processor.

The Nortel Networks SDE will perform this procedure with the assistance of site personnel who are knowledgeable in the area of the DMS-500 switch.

The responsibilities noted in the procedure can be overridden by mutual consent between the SDE and site personnel.

In case of emergency

In case of emergency situations, call your appropriate support group immediately.

Materials required

Two terminals are required, one for the active processor (label it ACT) and one for the inactive processor (label it INACT).

Procedure

The steps below list the revert to old load, CM procedure. Be sure to read any Notes and “if” statements in the procedure steps carefully.

Procedure 1-10
Revert to old load, CM

Step	Node	Action	Responsibility
1	INACT	Perform a RESTART RELOAD on the inactive RTIF (old load). **a.** At the CM 0 RTIF: RTIF>\RESTART RELOAD RTIF>YES {for confirmation} ***Note:*** The inactive processor will start to initialize. **b.** Site must tell the SDE when the inactive processor is flashing A1.	SITE
2	ACT	Log into the inactive processor as follows: **a.** >BCSUPDATE **b.** >SWACTCI **c.** >STATUSCHECK **d.** >LEAVE ALL {exits back to CI} ***Note:*** Mate link should be inservice. **e.** Allow initialization on the inactive side. **f.** >MATEIO	SDE
	ACT	**g.** >MATELOG ME	
		 **IF MATELOG FAILS...** **Repeat substeps a through g.** If MATELOG fails for SuperNode switch, repeat substeps a–g and try again.	
	INACT	**h.** Enter user name and password {mate-side response} Mate>OPERATOR Mate>OPERATOR **i.** Mate>TRACECI STOP	SDE

—continued—

Procedure 1-10
Revert to old load, CM (continued)

Step	Node	Action	Responsibility
3		***Note:*** Site and SDE should work together to prepare standby and parallel billing volumes for the SWACT back. Configure tables DIRPSSYS and DIRPPOOL for the abort SWACT back as follows:	BOTH
	INACT	**a.** Mate>LISTSF ALL	
		b. If file DIRP_REC is listed, skip to substep **h**. Otherwise, continue with substep **c** below.	
	ACT	**c.** >MATEIO	SDE
		d. >MATEBIND DIRP_REC DIRP_REC	
	INACT	**e.** Mate>MATEIO	
		f. Mate>COPY DIRP_REC SFDEV	
		g. Mate>LISTSF ALL	
		h. Mate>PRINT DIRP_REC {must contain “34”}	
		i. Verify table DIRPPOOL on the old software load.	
		j. Erase any other unnecessary files from mate SFDEV–*except* those files created by PRESWACT.	
		k. Mate>LOGOUT	
4	ACT	Prepare processors for the switch of activity as follows:	SDE
		a. >LOGUTIL;STOP	
		b. >DELDEVICE <**device**> ***Note:*** **device** can be found on the *Pre-application report*. It can be either port to which logs will be routed.	
		c. >ADDREP <**device**> SWCT CM MS DIRP IOD	
		d. >START	
		e. >LEAVE	

—continued—

Procedure 1-10
Revert to old load, CM (continued)

Step	Node	Action	Responsibility
5	ACT	Switch activity by invoking CC Warm SWACT as follows: ***Note:*** Wait a *minimum* of 10 minutes after the *completion* of the last restart on the inactive side before entering the ABORTSWACT command. ***Note:*** Critical activity begins with this step. Ensure no periodic testing is scheduled before continuing. **a.** >BCSUPDATE **b.** >SWACTCI **c.** >DATE **d.** >ABORTSWACT >YES {for confirmation} **e.** After a few minutes, the CC Warm SWACT occurs, outputting a message such as, "`...Starting Warm SWACT now.`"	SDE
		 **CAUTION** **Do not jam RTIF** Do not jam inactive side (RTIF) unless instructed by the SDE.	
6	ACT	The site must tell the SDE when the active RTIF is again flashing A1. ***Note:*** At this point, the activity switch is over and CC Warm SWACT is finished. *Work quickly to complete the following step.* (This restarts billing and recovers peripherals.)	SITE
7	ACT	Login, confirm the date and time, and start POSTSWACT as follows: **a.** <**break**> **b.** ?LOGIN Enter user name and password {system response} **c.** ><**username**> ><**password**>	BOTH

—continued—

Procedure 1-10
Revert to old load, CM (continued)

Step	Node	Action	Responsibility
	ACT	**d.** >DATE ***Note:*** If the date and time are incorrect, inform the SDE immediately.	
8	ACT	>BCSUPDATE	SDE
9	ACT	>POSTSWACT ***Note 1:*** POSTSWACT runs all steps required after the activity switch, and flags them as complete when they pass. If any error occurs, POSTSWACT will stop and give instructions. If this is the case, follow POSTSWACT instructions to correct the problem, and run POSTSWACT again (type >POSTSWACT) to continue. ***Note 2:*** POSTSWACT recovers PRIMARY billing subsystems (OCC). Confirm that affected DIRP subsystems were successfully activated. Then, the site may manually bring up PARALLEL subsystem(s) as required. ***Note 3:*** If no problems are encountered, POSTSWACT stops after BEGIN_TESTING and waits until the site accepts the software load.	SDE
10	ACT	**GO TO ANOTHER PROCEDURE** **At this point, perform Procedure 1-7 "Upgrade MS" with the old load to reload the MS. Following that, return here and continue with Step 11.**	SDE
11	ACT	After the site accepts the software load following critical Call Thru testing, finish POSTSWACT of BCSUPDATE. >BCSUPDATE >POSTSWACT ***Note 1:*** At this point, the BCSUPDATE will run all required POSTSWACT steps and flag them as complete when they pass. If any failures occur, follow BCSUPDATE instructions and enter POSTSWACT when the failure is corrected.	SDE

—continued—

Procedure 1-10
Revert to old load, CM (continued)

Step	Node	Action	Responsibility
12	ACT	When POSTSWACT has completed, enter the following commands: >ABORT_PRESWACT {resets PRESWACT} >QUIT >TABXFR >CANCEL	SDE
13	ACT	Start journal file and verify it started as follows: **a.** >JF START >YES {for confirmation} **b.** >MAPCI;MTC;IOD;DIRP;QUERY JF ALL ***Note:*** QUERY JF should respond with "AVAIL." If a standby device is being used, both active and standby volumes should be marked "AVAIL." **c.** >QUIT ALL	BOTH
14	ACT	When site personnel and the SDE agree all tests pass, sync the CMs. **a.** >MAPCI;MTC **b.** >CM;SYNC >YES {for confirmation} **c.** >QUIT MAPCI	BOTH SDE
15	ACT	Clean up SFDEV by erasing any application-related files.	SDE
—end—			

Appendix A
Command Summaries

This appendix provides supplementary information about the major processes of the automated software upgrade. It describes the processes performed by the software programs that step you through the software upgrade.

CAUTION
Switch degradation
These commands are intended for application specific activities. Using these commands out of context can cause switch degradation. Contact Networks VO, ETAS, the SDE before using any of these commands.

The information provided in this appendix is presented in the order listed below:

- TABAUDIT
- TABXFR
- DARTEDIT
- DELTA
- BCSUPDATE
- CC Warm SWACT command and logs

TABAUDIT

The TABAUDIT increment is used to check tables for data inconsistencies prior to a software delivery. This is necessary to ensure that critical tables are free of data problems and that each table has valid data.

To verify data integrity on a DMS-500 switch, the Table Auditor is initialized and run by using the TABAUDIT CI command which runs with the DMS-500 switch in sync as a CI process. TABAUDIT allows only one session to be active at any one time.

TABAUDIT verifies data integrity without performing nil-writes, and performs the following checks on tables:

- generic table checks (performed on a per table basis; verifies that a table is not corrupt)
- syntax checks (performed on a per tuple basis; verifies that data contained within a tuple's fields is consistent syntactically)
- table specific checks (performed on a per tuple basis; verifies data consistency of the tuple)
- routing checks, if applicable

CAUTION
ONP problems
Review software delivery bulletins and all current warning bulletins concerning TABAUDIT. Failure to comply may result in problems during the ONP.

CAUTION
Never print SFDEV
Do not attempt to print Summary$File which resides in SFDEV until the file has been automatically copied to the destination device. Doing so results in loss of TABAUDIT information.

TABAUDIT subcommands

The TABAUDIT subcommands are: AUTO, INCLUDE, EXCLUDE, STATUS, REPORT, CLEAR, EXECUTE, HELP, INFO, and QUIT. If AUTO is used, the AUTOTABAUDIT increment level is achieved; at this level, the TIMEFRAME command can be used to schedule the time frame within which the verification of tables is to be performed.

Table 2-1 describes the different commands available for the TABAUDIT (standard and automated) increment.

Table 2-1
Using TABAUDIT

Command	Explanation
AUTO	Enters the AUTOTABAUDIT increment level of TABAUDIT. Only one user may occupy this level at a time. After entering the AUTOTABAUDIT increment, use the TIMEFRAME command to schedule the verification of tables, then use any of the standard TABAUDIT commands (such as INCLUDE). Once executed, AUTOTABAUDIT checks data integrity without external guidance. The data check results can be maintained and displayed via a report utility. ***Note:*** The commands described below the TIMEFRAME command description can be entered from within the standard TABAUDIT or automated AUTOTABAUDIT increment.
TIMEFRAME *Syntax:* TIMEFRAME <start_time> <start_date> <stop_time> <stop_date>	(Entered from within the automated AUTO-TABAUDIT increment.) Specifies the time frame within which the table verification is to be performed. Syntax indicates the start time (in the format hh:mm, based on a 24-hour clock) and start date (in the format dd:mm:yy), followed by the stop time and stop date (in the same formats).

—continued—

Table 2-1
Using TABAUDIT (continued)

Command	Explanation
INCLUDE *Syntax:*	Identifies the range of tables that are to be included in the TABAUDIT data integrity check. The results are stored and may be accessed by the REPORT command.
INCLUDE ALL	Includes all tables in table DART.
INCLUDE <table_name>	Includes a single specified table.
INCLUDE FROM <start_tbl> INCLUDE FROM <start_tbl> TO <end_tbl>	Includes all tables in table DART that follow and include the table <start_tbl>. When the FROM option is followed by the TO option, <end_tbl> specifies which table should be the last table included.
EXCLUDE <table_name>	Identifies a table to be excluded from being checked by TABAUDIT. This removes a table from the list of included tables.
STATUS *Syntax:*	Displays the current status of TABAUDIT, showing the included and excluded table ranges and other parameters.
STATUS STATUS ALL	***Note:*** For AUTOTABAUDIT, this command also displays TIMEFRAME information and the current table.
REPORT *Syntax:*	Initiates the report utility which generates data integrity reports.
REPORT NOTCHECKED REPORT NOTCHECKED <device> REPORT NOTCHECKED <device> <file>	The NOTCHECKED option generates a list of tables that have not been verified by TABAUDIT within the previous 30 days. The output can be redirected to a specified device and file.
REPORT CHECKED REPORT CHECKED <device> REPORT CHECKED <device> <file>	The CHECKED option generates a summary file of all tables that have been verified by TABAUDIT. The output can be redirected to a specified device and file.

—continued—

Table 2-1
Using TABAUDIT (continued)

Command	Explanation
REPORT ALL REPORT ALL <device>	The ALL option generates a complete report for all tables in table DART. For each table that has errors, a summary file and a detailed report file are produced. The output can be redirected to a specified device.
REPORT INCLUDED REPORT INCLUDED <device>	The INCLUDED option generates a report for all tables that have been included in an includes list. For each table that has errors, a summary file and a detailed report file are produced. The output can be redirected to a specified device. ***Note:*** If a table has errors, the errors will be reported even if the table was last checked more than 30 days ago.
REPORT ERRORS REPORT ERRORS <device>	The ERRORS option generates a complete report for only those tables that have known errors. A detailed report is produced for each table with errors. The output can be redirected to a specified device.
REPORT <table> REPORT <table> <device> REPORT <table> <device> <file>	This option generates a detailed report for a specified table. The output can be redirected to a specified device and filename. ***Note:*** AUTOTABAUDIT does not generate reports for each table as the table is being verified the way standard TABAUDIT does. Instead, all report data may be accessed via the report utility. TABAUDIT, in addition to generating reports as tables are being verified, is altered so that such data may be also accessed via the report utility.
CLEAR *Syntax:* CLEAR INCLUDED	Clears data associated with TABAUDIT. Clears the list of included tables.

—continued—

Table 2-1
Using TABAUDIT (continued)

Command	Explanation
EXECUTE *Syntax:* EXECUTE EXECUTE <device> EXECUTE <device> <file>	Begins verifying tables. The user can specify the filename if only one table is to be verified, and can specify a device to which all data is to be written.
HELP <subcommand>	Provides further help on the specified TABAUDIT subcommand.
INFO	Provides brief description of TABAUDIT and lists the TABAUDIT subcommands.
QUIT	Quits the TABAUDIT increment. When quitting a standard TABAUDIT session, the user loses that session's parameters. When quitting out of an AUTOTABAUDIT session, the user is placed back in the standard TABAUDIT increment and, as long as the automated session is active, the session parameters are preserved.
—end—	

Warning messages

In the warning messages described below, ## indicates an integer. Refer to the report utility to determine which tables caused the warnings.

TABXFR linking

If all data issues have not been resolved and rechecked by TABAUDIT before a data move is attempted with TABXFR, one of the following warning messages is displayed:

```
WARNING – ## tables have not been verified by TABAUDIT.

WARNING – ## errors encountered by TABAUDIT.

WARNING – ## tables not checked by TABAUDIT within the last
30 days.
```

PRECHECK step

A PRECHECK step is used to ensure that any tables that have not been checked or any errors that have not been fixed are brought to the applicator's attention. The number of all tables that did not pass TABAUDIT checks is displayed via one of the following warning messages.

```
WARNING – ## tables not checked by TABAUDIT.

WARNING – ## errors encountered by TABAUDIT.

WARNING – ## tables not checked by TABAUDIT within the last
30 days.
```

TABXFR

The TABXFR increment is used to perform the data move portion of a software upgrade. The increment consists of the following subcommands: SETUP, STARTXFR, XFRFROM, XFRONLY, HALT, CANCEL, LIMIT, STOPIF, STOPXFR, STATUS, REPORT, XREPORT, CLEAR, QUIT, DATASYNC, DUMP, TABXFR, HELP.

The TABXFR command is used to Dump and Restore tables. To control this process, there are options to interrupt and restart the process.

Interrupting the Dump and Restore process

During the restore of tables, the user can stop TABXFR process two different ways: HALT is to be used most of the time; whereas, CANCEL is to be used when a major problem occurs.

To halt TABXFR, enter the command HALT at the inactive terminal at the Mate> prompt.

> ***Note:*** TABXFR process will halt after the current table is completely moved. This will not interrupt tables in the process of being moved.

To cancel (abort) TABXFR, enter the command CANCEL at the active terminal at the > prompt.

Wait for a system response indicating completion before continuing.

> ***Note:*** The only time the CANCEL command should be used is to abort the TABXFR process. The command will stop the move process immediately.

If you perform a CANCEL inadvertently, enter the command STARTXFR; HALT at the Mate> prompt.

Restart the D/R using the FROM command. Start from the last table successfully completed.

Restarting the Dump and Restore process

To restart TABXFR, enter the command STARTXFR at the inactive terminal at the Mate> prompt.

TABXFR subcommands

Table 2-2 describes the different commands available for the TABXFR increment.

Table 2-3
Using TABXFR

Command	Explanation
SETUP *Syntax:* SETUP STANDARD	Sets up and initializes the type of platform to be used to perform the table transfers. Valid platforms are: STANDARD, ACTREST, DUMPONLY, NIL. An example of a platform is STANDARD if the data move is being performed on a standard configuration. The standard configuration consists of the core in split mode with the new load on the inactive unit and the old load on the active unit. ***Note:*** If this command is not issued, the transfer platform defaults to STANDARD.
SETUP ACTREST	A data move performed on the ACTREST platform performs the restore part of the dump and restore (data transfer). This restores data from tape to the active side (in other words, restores to split CM mode).
SETUP DUMPONLY	This is the setup to perform the dump part of the dump and restore. This is used for dumping data to tape.
SETUP NIL	
STARTXFR *Syntax:* STARTXFR <table_name>	Starts transferring tables after the last completed table. If no tables have yet been transferred, it starts at the first table in DART.
XFRFROM *Syntax:* XFRFROM <table_name>	Starts transferring tables at the specified table.
XFRONLY *Syntax:* XFRONLY <table_name>	Transfers only one table.

—continued—

Table 2-3
Using TABXFR (continued)

Command	Explanation
HALT *Syntax:* HALT HALT NOW	Halts the transfer of tables. HALT halts the transferring of tables after the current table is complete. HALT NOW halts immediately after the current tuple.
CANCEL	Cancels the data transfer. Entered on active side after any type of ABORT. Turns on AUTODUMP and AUTOPATCH. The data transfer cannot be restarted without rebooting the new load image.
LIMIT *Syntax:* LIMIT <failure_limit>	Limits the number of failures (0–4294967295) accepted for one table. If the given limit is reached, the transfer halts immediately. If no limit is specified, an unlimited amount of errors is allowed. The initial LIMIT default is unlimited.
STOPIF *Syntax:* STOPIF <stopif_limit>	Sets the acceptable number of failures (0–4294967295) for one table. If the limit is reached, the transfer halts after the current table is finished. If no STOPIF parameter is specified, an unlimited amount is accepted. The initial STOPIF default is 1.
STOPXFR *Syntax:* STOPXFR BEFORE <table_name> STOPXFR AFTER <table_name> STOPXFR CLEAR BEFORE <table_name> STOPXFR CLEAR AFTER <table_name> STOPXFR QUERY	This command is used to manipulate the STOP information of the table transfer. The parameters are described below: Sets a stop before a given table. Sets a stop after a given table. Clears a stop before a given table. Clears a stop after a given table. Lists all current stops.

—continued—

Table 2-3
Using TABXFR (continued)

Command	Explanation
STATUS	Displays setup and status information about the data transfer process.
REPORT	Generates a final table transfer report. This includes the table exception report.
XREPORT	Creates a table exception report.
CLEAR *Syntax:* CLEAR <table_name>	Clears the specified table. This only works with tables that have a transfer type of PHYSICAL in table DART.
QUIT	Quits the TABXFR process.
DUMP *Syntax:* DUMP DUMP FROM <table_name> DUMP ONLY <table_name>	Performs the dump part of the data move with the dumped data being put to the specified device. This command is only valid with the DUMPONLY platform (see SETUP). The parameters are described below: Does a complete dump. Dumps starting from specified table. Dumps a specific table only.
TABXFR	Performs the data move portion of an application.
HELP	Provides a list of TABXFR subcommands.
—end—	

DARTEDIT

The DARTEDIT command is used to enter the DARTEDIT increment. In the DARTEDIT increment, the DARTEDIT command enables the PRINTDART, SORT, LISTDART, and COUNTIT commands. These commands have the options shown in Table 2-4.

Table 2-4
Using DARTEDIT

Command	Action and explanation
PRINTDART	Lists tables in DART.
Syntax:	
PRINTDART LONG	The LONG option lists tables in DART in a single column format.
PRINTDART SHORT	(Default.) The SHORT option prints a compact listing of tables in DART.
SORT	Sorts the table DART after modifying the USES LIST.
LISTDART	Lists tables in DART and displays sequence numbers.
COUNTIT	Displays table DART statistics.
Syntax:	
COUNTIT BRIEF	The BRIEF option includes entries in USES_INFO_TABLE and DART table counts.
COUNTIT FULL	The FULL option includes “OLD” and “NEW” statistics for USES_INFO_TABLE and DART table.

Examples of PRINTDART SHORT and PRINTDART LONG are shown in Figures 2-1 and 2-2, respectively.

Figure 2-3
Example of PRINTDART SHORT

```
>PRINTDART SHORT
Table DART:
 000 N DART 001 N OKPARMS 002 E DATASIZE 003 N SYSDATA 004 E OCCNAME
 005 E OCCINFO            006 E HNPACONT 007 N OFCSTD  008 N OFCOPT
 009 OFCENG 010 E CRSFMT  011 E CLLI     012 E NNASST  013 E SITE
  014 E CMSHELF...
```

Figure 2-4
Example of PRINTDART LONG

```
>PRINTDART LONG
Table DART:
 000 N DART
 001 N OKPARMS
 002 E DATA SIZE
 003 N SYSDATA
 004 E OCCNAME
 005 E OCCINFO...
```

DELTA

The DELTA command displays the differences (delta) between a given table on the active and inactive sides. To display these differences, the command DELTA <table> <delta level> <file option> is entered.

The command component <table> is the name of the table to be checked. For a subtable, enter the command <table> SUB <subtable>.

The command component <delta level> can be any of the following:

- COUNT, which checks the number of tuples in both tables
- KEYS, which does a checksum on the keys of the tuples
- CHECKSUM, which does a checksum on the tuples (default)

The command component <file option> can be either of the following:

- FILE, which sends the results to a file on SFDEV called DELTA$REPORT (default)
- NOFILE, which displays the terminal without creating a file

Figure 2-5 is an example of a DELTA command screen.

Figure 2-5
Example of DELTA

```
>DELTA OFCENG NOFILE
Table OFCENG
   Tuples do not match.  Old Count = 209,  New Count = 206.
**OLD  AMA_EBCDIC_CONVERT N

**OLD  PPMBUFFS 79
**NEW  PPMBUFFS 82
```

BCSUPDATE

The BCSUPDATE increment enables the commands for the application.

BCSUPDATE level commands do the actual work of applying the new load. BCSUPDATE includes the application functions formerly performed either manually or by automated processes.

BCSUPDATE increments

The primary increments of BCSUPDATE which assist in switching activity from one software load to another and in recovering from the activity switch are

- PRECHECK FIRST
- PRECHECK FINAL
- PRESWACT
- SWACTCI
- POSTSWACT

Table 3-4 lists the processes or increments available to BCSUPDATE.

Table 3-5
Using BCSUPDATE

Command	Action and explanation
DATADUMP	Display office information.
OVERRIDE	Set a failed PRESWACT or POSTSWACT procedure to COMPLETED. This should be used with *caution*. Only those steps that have been investigated and pose no threat to the current application should be set completed by this command.
POSTSWACT	Recovery functions following the SWACT.
PRECHECK FIRST/FINAL	A series of pre-application checks (prechecks) used to verify that an office is ready for the software upgrade.
PRESWACT	Perform the application by invoking the application driver. The command may be used repeatedly.
QUIT	EXIT the BCSUPDATE level.
RESET	Reset all completed procedures to their initial state of NEEDED so BCSUPDATE can be executed again.

—continued—

Table 3-5
Using BCSUPDATE (continued)

Command	Action and explanation
RUNSTEP	Execute individual procedures in the process.
STATUS	Display the current status of the application. It displays what critical steps have been completed (and the execution time), those still needed, and whether or not the system is ready to perform the switch of activity.
SWACTCI	Enables CC Warm SWACT commands. Refer to the next section, *CC Warm SWACT*, for details of SWACT commands.
—end—	

The following pages describe the procedures for the PRESWACT interrupt, PRECHECK FIRST/FINAL steps, PRESWACT steps, and POSTSWACT steps. For easier reference, these procedures each begin at the top of a new page.

PRESWACT interrupt

It may be necessary to STOP (and reschedule) the application after PRESWACT has been implemented but before the switch of activity. If this is the case, perform Procedure 2-1 to restore the active side to the original configuration.

Procedure 2-1
PRESWACT interrupt

Step	Action
1	>ABORT_PRESWACT

PRECHECK FIRST/FINAL steps

Unless otherwise noted, each of the steps in Procedure 2-2 are run during the execution of both the PRECHECK FIRST and PRECHECK FINAL commands.

Procedure 2-2
PRECHECK FIRST/FINAL steps

Step	Command	Action
1	DISPLAY_DEVICE_AND_USER	This step displays information on the IOC device and username the PRESWACT is being run on. This includes the COMCLASS, PRIVCLASS, PRIORITY, LOGINCONTROL, STACKSIZE, and PRIVCLASS. This information can also be displayed through the use of the DEVICE command in the BCSUPDATE level.
2	TABLE_COUNTS	This step displays the counts of some of the larger system tables (TRKMEM, etc). This information helps determine how long the TABXFR takes. This step runs only during PRECHECK FIRST.
3	CHECK_MEMORY	This step determines the amount of physical and logical memory and verifies that the amounts are equal. The amounts display in 1M equivalents so they can be compared to the NT-determined required memory specifications.
4	CHECK_DSLIMIT	The step checks table DSLIMIT to ensure that there is enough space in SFDEV to complete the precheck, dump and restore, and the application. If this amount is not available, a message displays.
5	CHECK_CRSFMT_AND _CRSMAP	This step checks table CRSFMT and CRSMAP to ensure SMDR data is not being sent to the AMA stream if the AMA format is BCFMT. This arrangement should not be used except for those sites that handle their data in a special way. If this datafill arrangement is present, a message displays.
6	E911SRDB_CHECK	This step checks the data dictionary range for DIGIT and SERVING_NUMBERING_PLAN_AREA. If these ranges do not line up, there will be difficulties transferring the data.

—continued—

Procedure 2-2
PRECHECK FIRST/FINAL steps (continued)

Step	Command	Action
7	CHECK_LTCINV	This step checks table LTCINV to ensure that field OPTATTR is datafilled with “CCS7” only when a DTC is running CCS7 traffic such as if the load name for the DTC (see LOAD field) begins with “DC7.”
8	CHECK_LCMINV	This step checks table LCMINV to ensure that field MEMSIZE is set to 256K when using an XLCM load and set to 64K when using an LCM load. If this condition is not met, a message displays.
9	DISPLAY_SLM_DEVICE	This step determines and displays if the office is equipped with a SLM I or SLM II type drive. This step runs only during PRECHECK FIRST.
10	DISPLAY_PEC_INFO	This step displays the PEC and release numbers for both the CM and MS. This information verifies that hardware is at the correct level. The correct levels are given in the Baseline report. This step runs only during the PRECHECK FIRST.
11	DEVICE_CHECK	This step displays any SYSB or MANB devices. Devices in either of these states can cause delays on the night of the application.
12	DISPLAY_DNC_USERS	This step displays all DNC/MPC users and their status.
13	CHECK_LOGS	This step verifies the front end stability by checking traps and critical system logs. The log output is in the following order: TRAP, INIT, SWER, NET and PM. The step will then scan the CC, CMC, MISM CM, MS, SLM, and MM log buffers for indications of stability problems.
14	DISPLAY_PERIPHERAL_LOAD _NAMES	This step displays the name and load name of loadable peripherals. This step runs only during PRECHECK FIRST.
15	DISPLAY_MPC_LOAD_NAMES	This step displays the load names for each equipped MPC. This step runs only during PRECHECK FIRST.

—continued—

Procedure 2-2
PRECHECK FIRST/FINAL steps (continued)

Step	Command	Action
16	DISPLAY_ST_LOAD_NAMES	This step displays the load names for each of the equipped ST (Signalling Terminal) devices, including DCHs. This step runs only during PRECHECK FIRST.
17	C7LINK_CHECK	This step checks table C7LINK for a mixture of MSB7-based and LPP-based CCS7 links. A mixture is not supported over an application, and the datafill should be changed to show either all MSB7-based or LPP-based CCS7 links.

—end—

PRESWACT steps

The steps in Procedure 2-3 are executed in sequence to set up the environment for the SWACT. This may not be a complete list of processes run by PRESWACT; the steps will be different depending on the load level and on certain features being present in the office.

Procedure 2-3
PRESWACT steps

Step	Command	Action
1	CHECK_ISN_PMS	This command checks to be sure the Series 3 ISN peripherals, including MS, are loaded with the compatible load from the core.
2	CMIC_LINKHITS_CHECK	On the active CPU, this command verifies that neither of the MC links have experienced more than 3 link hits. Counters are cleared every 24 hours.
3	VERIFY_ACTIVE_DSLIMIT	On the active CPU, this command checks to see that there is at least 100K of available SFDEV. If not, it adds another 100K to the STOREFS tuple in DSLIMIT.
4	DISABLE_AUTOIMAGE	On the active CPU, this command disables the auto-image feature. It stops any auto-image that maybe running or is scheduled to run during the application. It is rescheduled in POSTSWACT by ENABLE_AUTOIMAGE.
5	VERIFY_DSLIMIT	On the inactive CPU, this command checks to see that there is at least 100K of available SFDEV. If not, it adds another 100K to the STOREFS tuple in DSLIMIT.
6	TRACE_ON	On the active CPU, turn TRACECI on for upcoming transfer of dynamic tables. This allows error messages from TABXFR during PRESWACT to display on the terminal.
7	DISABLE_PATCH_AUDIT_ACT	On the active CPU, this command disables the patch audit during the ONP.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
8	SET_OFFICE_TUPLES	On the active CPU, this command sets the office parm values of NODEREXCONTROL and LCDREX_CONTROL so that REX tests are effectively turned off during PRESWACT. The old values are stored in REX$FILE and sent to the inactive CPU. Original values are restored in POSTSWACT RESET_OFFICE_TUPLES.
9	SET_CPU_SHARE	On the active CPU, this command sets GUARANTEED_TERMINAL_CPU_SHARE to 16 for PRESWACT. Original values are restored in POSTSWACT RESET_OFFICE_TUPLES.
10	SET_MATE_TUPLES	On the inactive CPU, this command turns DUMP_ RESTORE_IN_PROGRESS on and checks to see that the REX$FILE arrived. It contains the original tuple values for office parms NODEREXCONTROL and LCDREX_CONTROL. It stores the original values in protected store and turns off the REX parms. It sets GUARANTEED_TERMINAL_CPU_ SHARE to 16 for PRESWACT. Original values are restored in POSTSWACT RESET_OFFICE_ TUPLES.
11	SEND_PATCHES	On the active CPU, this command scans SFDEV and all devices listed in table PADNDEV for patch files matching the inactive side's software load release number and sends the patch files to the inactive side's SFDEV.
12	APPLY_PATCHES	On the inactive CPU, this command applies the patches on the INACTIVE.
13	MATE_RESTART_COLD	On the inactive CPU, this command sends a message to the inactive CPU to perform a COLD RESTART and waits up to ten minutes for it to return A1.
14	MATE_RESTART_WARM	On the inactive CPU, this command sends a message to the inactive CPU to perform a WARM RESTART and waits up to ten minutes for it to return A1.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
15	VERIFY_DUMP_RESTORE	On the inactive CPU, this command checks table DART to ensure that all tables have been transferred successfully by the TABXFR process. Otherwise, the step fails and the names of all tables that have not been completed are sent to SFDEV file TABSTATES.
16	SWACT_MODULE_CHECK	On the active and inactive CPUs, this command checks for the existence of specified SWACT modules.
17	FRAME_RELAY_BILLING_ GENERATION	On the active CPU, this command creates a process that will aggregate all of the frame relay billing data into AMA records and ship them off to be formatted and to close off billing before the activity switch occurs.
18	DISABLE_PATCH_AUDIT_ INACT	On the inactive CPU, this command disables the patch audit during the ONP. It is enabled during POSTSWACT step ENABLE_PATCH_AUDIT_ POSTSWACT.
19	HALT_ACTIVE_ATT	On the active CPU, this command halts Automatic Trunk Testing because ATT may cause some trunks' states to be incorrectly transferred during the step TRANSFER_TRUNK_STATES.
20	HALT_ATT	On the inactive CPU, this command halts Automatic Trunk Testing because ATT may cause some trunks' states to be incorrectly set during the TRUNK_RESTORE step.
21	STATUSUPDATE	On the active CPU, this command checks all nodes in the office to ensure that none are SYSBUSY or MANBUSY. It tells the inactive CPU which ones are OK and to MANBUSY them.
22	FOCUSED_MAINT_XFER	On the active CPU, this command transfers line and trunk trouble information to the inactive CPU so Focused Maintenance info is not lost during SWACT.
23	CORRECT_DRWR_STATES	On the inactive CPU, this command corrects the status of line drawers for all line module types.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
24	TRANSFER_STABLE_PRI_ DCHS	On the active CPU, this command creates store files INB$DCH and MB$DCH that contain the ISDN D–Channel circuits in the indicated states. It then transfers the files to the inactive CPU.
25	TRANSFER_TRUNK_STATES	On the active CPU, this command creates files for trunk states, INB, MB, and RES, and sends them to the inactive CPU. RESTORE_INB is done during PRESWACT but TRUNK_RESTORE for MB and RES trunks must wait until POSTSWACT because they would come up idle after the restart.
26	RESTORE_INB	On the inactive CPU, this command MANBUSYs INB trunks (readies all trunks after initial datafill), then uses INB$TRKS file to set the INB trunks back to INB. The MATE_RESTART will set all MB trunks to CBSY. Also, it puts the MB and RES trunks INB so they will not be available to call processing after SWACT.
27	OVERLAP_CHECK	On the inactive CPU, make sure that OVERLAP OUTPULSING is turned off in new Equal Access offices as it is incompatible with the Equal Access overlap outpulsing.
28	TABLE_DELTA	On the active CPU, this command performs a delta on each of the tables in the hard-coded list found in DELTALST.
29	RESTORE_STABLE_PRI_DCHS	On the inactive CPU, this command puts all ISDN D-Channel circuits in the LO state–these circuits should be in the LO state to recover properly–then processes the files created in step TRANSFER_ STABLE_PRI_DCHS by putting the listed circuits in either the MB or INB state, based on the name of the file.
30	SET_SWCT_AMA	On the active CPU, this command sets office parameter SWCT_AMA_PREBILLING boolean to Y (true) so the SWACT prebilling feature gets run during SWACT. This allows for partial billing of active calls during SWACT.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
31	MATE_RESTART_RELOAD	On the inactive CPU, this command performs a RESTART RELOAD and waits up to ten minutes for it to return A1.
32	STATUSCHECK	On the active CPU, this command sends messages to the inactive CPU, getting the status for all nodes in the office. It ensures that the states match the active side and that all states are either OK, OFFLINE, or UNEQUIPPED.
33	VERIFY_STORE	On the inactive CPU, this command verifies that the available data store is at least 5% of the total Data Store.
34	PRELOAD_EXECS	On the active CPU, this command loads the XPMs for the new EXEC lineups. The pointers to the EXEC lineups are switched from old to new during the WARMSWACT process.
35	UNMASK_CUSTFLDS	On the active CPU, this command adds tuples to table CUSTFLDS that will allow hidden fields for the dynamic tables to be transferred.
36	MATE_UNMASK_CUSTFLDS	On the inactive CPU, this command adds tuples to table CUSTFLDS that will allow hidden fields for the dynamic tables to be transferred.
37	MASK_CUSTFLDS	On the active CPU, this command deletes the previously added CUSTFLDS tuples.
38	MATE_MASK_CUSTFLDS	On the inactive CPU, this command deletes the previously added CUSTFLDS tuples.
39	TRACE_OFF	On the active CPU, this command halts the TRACECI output that was needed for transferring dynamic table data.
40	MATE_TRACE_OFF	On the inactive CPU, this command halts the TRACECI output that was needed for transferring dynamic table data.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
41	PM_EXEC_DELTA	On the active CPU, this command builds a table of PM node numbers and their EXEC lineups, and sends it to the inactive CPU where a comparison is made between it and a similar table built on the inactive side.
42	CHECK_DISK_VOLS	On the active CPU, this command scans the volumes on all ONLINE disk drives and checks that any open files are critical files. It lists all non-critical files that are open and tells the user to close them.
43	DUMP_DIRPPOOL	On the active CPU, this command dumps table DIRPPOOL into file DIRP_INAC. The file is sent to the inactive side's SFDEV for use by subsequent DIRP steps.
44	CHECK_DIRPPOOL	On the active CPU, this command displays the active side datafill and advises the user to close regular TAPEX and parallel/regular TAPES. This command also displays inactive side datafill and advises the craftsperson to mount any TAPE volumes (parallel/regular) to be recovered after the SWACT. If desired, this command also advises that datafill should be adjusted for DISK or DPP volumes.
45	CHECK_DIRPSSYS	On the inactive CPU, this command checks that all resident DIRP subsystems have associated entries in table DIRPSSYS. If not, it checks table DIRPPOOL to see that both a REGULAR and PARALLEL pool for the subsystem exist. If not, it automatically adds them, then adds the DIRPSSYS entry for the subsystem.
46	AUTOLD_TRANSFER	On the active CPU, this command transfers the latest AUTLOAD ROUTE information to the inactive CPU. This determines what device the CPU will choose if it decides to reboot itself.
47	STOP_BILL_SERVER	Not supported on DMS-500. On the active CPU, some DMS-500 offices have a special node for billing purposes. This command shuts the billing server down during SWACT.

—continued—

Procedure 2-3
PRESWACT steps (continued)

Step	Command	Action
48	MS_CHECK	On the active CPU, this command verifies that one of the MS units is loaded with the new compatible load. Load versions for both units are displayed. A message that contains the inactive CM load version is also displayed with the result of the comparison (passed/failed).
49	MATE_MEM_CHECK	On the inactive CPU, this command tests the memory before allowing SWACT. PRESWACT waits 30 minutes for a response.

—end—

POSTSWACT steps

The steps in Procedure 2-4 are executed in sequence to clean up the environment after the SWACT. This may not be a complete list of processes run by POSTSWACT; the steps will be different depending on the load level and on certain features being present in the office.

Procedure 2-4
POSTSWACT steps

Step	Command	Action
1	DIRP_RECOVERY	This command reads the DIRP_REC file to recover the OCC billing devices.
2	DIRP_AUDIT	This command audits all DIRP subsystems to clear alarms.
3	HARDWARE_CHECK	This command scans all hardware that is addressed by STATUSUPDATE/STATUSCHECK to ensure no hardware is MANB, SYSB or CBSY.
4	CHECK_BILL_SERVER	Not supported on DMS-500. This command sets internal boolean value (used to track whether or not billing server was active) to false.
5	SNIX_HSDF_STARTUP	This command starts the HSDF file system server.
6	PROCESS_ONP_TIME	This command reads timing data from a file that contains information about the processes that the old load executed.
7	OMMASTER_RESTORE	This command verifies that OMMASTER has been set to EIOC.
8	TRUNK_RESTORE	This command sets trunks which were MB or RES back to their original states.
9	RTS_INI_TRUNKS	This command RTSs all trunks which are INI after the SWACT.
10	SET_AMA_RPT	This command sets office parameter SPECIAL_ AMA_REPORT to “Y BOTH 32767.”
11	DEVICE_SCAN	This command scans all DDUs to verify operation, and lists all DDU volumes and SFDEV to find all patches.

—continued—

Procedure 2-4
POSTSWACT steps (continued)

Step	Command	Action
12	SLM_DISK_SCAN	This command is the same as DEVICE_SCAN except this command scans SLM disk volumes.
13	MATCH_ALL_UPD	This command performs the equivalent of a MATCHALL UPDATE from the PRSM level.
14	BEGIN_TESTING	This command informs site that testing should begin. POSTSWACT should stop after this step.
15	ENABLE_PATCH_AUDIT_ POSTSWACT	This command enables the patch audit during the ONP.
16	POST_MS_CHECK	This command verifies that one of the MS units is loaded with the new compatible load. Load versions for both units are displayed. A message that contains the inactive CM load version is also displayed with the result of the comparison (passed/failed).
17	RESET_OFFICE_TUPLES	This command resets the following office parameters to their original values: NODEREXCONTROL GUARANTEED_TERMINAL_CPU_SHARE
18	RESET_AMA_RPT	This command resets the office parameter SPECIAL_AMA_REPORT to its original value.
19	ENABLE_AUTOIMAGE	This command enables the Auto Image feature again.
20	RESUME_ATT	This command resumes scheduled ATT testing.
21	CLEANUP_SFDEV_FILES	This command erases files used by the ONP and erases patches from SFDEV.
22	DISPLAY_SWACT_TIME	This command displays the total CC Warm Swact time in minutes and seconds.
23	RESET_TABXFR_TARGET	This command resets the TABXFR platform to the default STANDARD setup (for other setups, see the TABXFR description earlier in this appendix).

—end—

CC Warm SWACT command and logs

SWACT is the process where an activity switch between CCs occurs. CC Warm SWACT is a SWACT where special software is run to ensure that certain calls stay up. A description of the CC Warm SWACT process can give the SDE a better understanding of how the new software load is activated.

The four parts in this CC Warm SWACT section do the following:

- Explain what CC Warm SWACT is actually doing.
- Describe the steps involved in the CC Warm SWACT process.
- Provide additional commands that can be used should any problems arise with the activity switch.
- Explain the system logs related to CC Warm SWACT.

For easier reference, the description of each of these four parts begins at the top of a new page.

What CC Warm SWACT does

SWitch of ACTivity (SWACT) is a generic DMS term referring to a process by which activity is switched between two processors. CC Warm SWACT is a SWACT where special software is executed to ensure the degradation in service provided by a switch is minimized when switching activity between the CPUs in the core of the switch (for example, CM in SuperNode).

CC Warm SWACT is traditionally used as a way of efficiently activating a new software load in a DMS-500 switch. With recent enhancements, the NORESTARTSWACT utility has come into place where the system outage resulting from a software upgrade is reduced from several minutes to under 30 seconds. This reduction in outage time achieved with NORESTARTSWACT makes it a viable tool to be used for minimizing all system degradation time due to restarts, not only those relating to a software upgrade.

The following steps achieve a successful NORESTARTSWACT:

- Precheck to ensure the environment is right for the procedure (such as the DMS-500 switch is not in sync and inactive side is not jammed).
- Establish communication between the two CPUs.
- Obtain required semi-dynamic data from the active CPU and transfer it to the inactive CPU.
- Set up and allocate required resources to transfer dynamic data (such as originating and terminating party of calls being supported).
- Stop call processing. Freeze the switch so nothing can change while activity is being switched.
- Obtain and transfer all dynamic data.
- SWitch ACTivity from the active CPU to the inactive CPU.
- Perform additional checking to ensure sanity of new CPU and initiate recovery.
- Insert the dynamic data that was transferred before SWACT.
- Resume call processing.
- Cleanup and deallocate any resources used to execute the CC Warm SWACT.

CC Warm SWACT steps

The commands supported by CC Warm SWACT are as follows:

- ABORTSWACT
- DISPLAY
- FORCESWACT
- MODCHECK
- NORESTARTSWACT
- QUERYSTATUS
- QUIT
- RESTARTSWACT
- RESTOREXECS
- RESUMEPM
- STATUSCHECK
- SWACTCI

Table 2-6 explains the SWACT commands in alphabetic order, as listed above.

Table 2-6
Using SWACT

Command	Explanation
ABORTSWACT	This command performs all necessary PRESWACT checks to be sure all devices are OK, and then starts the CC Warm SWACT process.
ABORTSWACT NOMATCH	The NOMATCH option disables the matching of device status between the active and inactive sides of the switch. ***CAUTION:*** Do not use this option unless there is no other choice. Device status after the CC Warm SWACT is not guaranteed and several devices may be out of service after the CC Warm SWACT.
ABORTSWACT NOCHECK	The NOCHECK option overrides the requirement for all devices to be OK before a CC Warm SWACT. Therefore, a device can be CBSY, for instance, and the CC WarmSWACT is still allowed. ***CAUTION:*** Use this option only as a last choice after exploring other options. *System response:* The steps executed as part of the CC Warm SWACT are displayed to the terminal and SWCT102 logs are generated. SWACT occurs, followed by a COLD restart.
DISPLAY	The DISPLAY command displays information resulting from the activity switch. One parameter is required.
DISPLAY BADNODES	The BADNODES option displays all hardware devices whose status is NOT OK or OFFLINE on the active side of the switch.
DISPLAY MISMATCH	The MISMATCH option displays mismatches found from comparing device status between the active and inactive side of the switch. (STATUSCHECK must be done prior to using this option.) If a mismatch is found, a table listing the node, device name, and the status on both sides are printed. If no mismatch is found, the response is NO MISMATCH FOUND.
DISPLAY SWACTTIME	The SWACTTIME option displays the overall time taken for CC Warm SWACT (SWCT101 time, EXECTIME, RECVTIME). *System response:* Information is displayed to the terminal.

—continued—

Table 2-6
Using SWACT (continued)

Command	Explanation
FORCESWACT	This command displays, enables, or disables the ability for the newly active CPU to switch activity back to the previously active CPU if an abnormal condition exists (more than 10% of PMs on the newly active side are not acceptable). One parameter is optional. No parameter queries the status of FORCESWACT (IN EFFECT or NOT IN EFFECT).
FORCESWACT OFF	The OFF parameter allows activity to switch back if the abnormal condition exists. This should not be used unless the user definitely does *not* want to stay on the newly active CPU to correct problems.
FORCESWACT ON	The ON parameter forces activity to stay on the newly active side even if an abnormal condition exists (the default setting). *System response:* A SWCT104 log is produced when the ON or OFF optional parameter is used.
MODCHECK	This command checks for necessary CC Warm SWACT application modules on the inactive side and outputs any modules that are missing. Missing modules cause the CC Warm SWACT to fail and, therefore, must be investigated or overridden via the OVERRIDE option to this command. If no parameter is given, checking is invoked for all CC Warm SWACT application modules.
MODCHECK OVERRIDE	The OVERRIDE option disables the checking for requested missing modules and, hence, disables the functions performed by those CC Warm SWACT applications.
MODCHECK RESET	The RESET option enables checking for requested missing modules and, hence, enables the functions performed by those CC Warm SWACT applications. *System response:* If MODCHECK is successful, a SWCT113 log is output. If MODCHECK fails, a SWCT114 log is output. For each missing module, a SWCT115 log is output. For every module for which the OVERRIDE or RESET option is used, a SWCT116 log is output.

—continued—

Table 2-6
Using SWACT (continued)

Command	Explanation
NORESTARTSWACT	This command executes the CC Warm SWACT process and performs all the necessary prechecks to activate the CC Warm SWACT. LIMITED_PRESWACT steps of BCSUPDATE must all be executed successfully before a NORESTARTSWACT will be allowed.
NORESTARTSWACT NOMATCH	The NOMATCH option disables the matching of device status between the active and inactive sides of the switch. ***CAUTION:*** Do not use this option unless there is no other choice. Device status after the CC Warm SWACT is not guaranteed and devices may be out of service after the CC Warm SWACT. *System response*: The steps being executed as part of the CC Warm SWACT are displayed to the terminal and SWCT102 logs are generated. SWACT occurs. If a NORESTARTSWACT cannot be executed in this office, the following message is displayed: "RESTARTSWACT should be used instead of NORESTARTSWACT. NORESTARTSWACT command aborted."
QUERYSTATUS	This command checks the office configuration to determine which CC Warm SWACT command should be used. *System response*: RESTARTSWACT must be used for initiating a CC Warm SWACT.
QUIT	This command gracefully exits the SWACTCI increment. *System response:* The system prompt returns to the previous state.

—continued—

Table 2-6
Using SWACT (continued)

Command	Explanation
RESTARTSWACT	These commands perform all necessary PRESWACT checks and then starts the CC Warm SWACT process. One parameter, NOMATCH, is optional. If the parameter is omitted, the check is done on all nodes. In addition, the device status check between sides is invoked. All PRESWACT (BCSUPDATE) steps must be successfully completed before a RESTARTSWACT is allowed. There are numerous responses and prompts available to this command. Most are self-explanatory and will prompt the user for action.
RESTARTSWACT NOMATCH	The NOMATCH option disables the matching of device status between the active and inactive sides of the switch. ***CAUTION:*** Do not use this option unless there is no other choice. Device status after the CC Warm SWACT is not guaranteed and several devices may be out of service after the CC Warm SWACT. *System response:* Steps executed as part of the CC Warm SWACT are displayed to the terminal and SWCT102 logs are generated. SWACT occurs, followed by a COLD restart.
RESTOREXECS <pm_type>	***CAUTION: For emergency use by qualified personnel only.*** This command loads execs to any or all PM types. Parameter is PM_TYPE: TM, LM, DCM, RLM, XPM, or ALL. *System response:* PM type(s) chosen will have execs loaded. No response at the terminal.
RESUMEPM	***CAUTION: For emergency use by qualified personnel only.*** This is a high-risk command and should be used only by qualified personnel. *Do not use this command.* *System response:* Some PMs may go SYSB.

—continued—

Table 2-6
Using SWACT (continued)

Command	Explanation
STATUSCHECK	This command matches device status between the active and inactive sides of the switch. It verifies if the STATUSUPDATE step executed in PRESWACT was successful. *System response:* A SWCT109 log is generated for each type of device that passes the STATUSCHECK process. A SWCT110 log is generated for each type of device that fails the STATUSCHECK process. Each device of the failed type that mismatches is displayed to the terminal.
SWACTCI	This command enters the SWACTCI (switch activity) increment and provides access to all CC Warm SWACT commands. To access the SWACTCI directory you must first be in the BCSUPDATE CI directory. *System response:* The SWACTCI: prompt is returned until the user leaves the SWACTCI increment (see QUIT).
—end—	

CC Warm SWACT logs and system alarm

Logs related to CC Warm SWACT are of type SWCT. These logs are generated by the CC Warm SWACT control process and indicate the status (PASS, FAIL) of the CC Warm SWACT steps. Many times the SWCT logs require no action by site personnel because they are information logs only. However, the logs may prompt the user for action.

The SWCT logs are briefly described in the following paragraphs.

SWCT101

This is an information log that displays the WARM SWACT time. This log does not indicate a service affecting problem.

SWCT102

This is an information log that indicates which CC Warm SWACT step successfully completed. This log does not indicate a service affecting problem.

SWCT103

This is a trouble log that indicates which CC Warm SWACT step failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT104

This is an information log that indicates a condition or state of the CC Warm SWACT process. This log does not indicate a service affecting problem.

SWCT105

This is a trouble log that indicates why a CC Warm SWACT step failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT106

This is a trouble log that indicates the underlying problem of why a CC Warm SWACT step failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT109

This is an information log that indicates a STATUSCHECK application passed. This log does not indicate a service affecting problem.

SWCT110

This is a trouble log that indicates a STATUSCHECK application failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT111

This is an information log that indicates that the PRELOAD_EXECS step of PRESWACT completed successfully. This log does not indicate a service affecting problem.

SWCT112

This is a trouble log that indicates that PRELOAD_EXECS failed for an XPM; one log will be reported for every XPM failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT113

This is an information log that indicates that the MODCHECK command passed successfully. This log does not indicate a service affecting problem.

SWCT114

This is a trouble log that indicates that the MODCHECK command failed. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT115

This is a trouble log that indicates which modules are missing on the inactive side, according to the MODCHECK command; one log will be reported for every missing module. This log indicates a service affecting problem and must be investigated so the CC Warm SWACT can complete successfully.

SWCT116

This is an information log that indicates that a module has been OVERRIDDEN/RESET for checking by the MODCHECK command. This log does not indicate a service affecting problem.

SWCT117

This is an information log that displays information about the CC Warm SWACT process. This log does not indicate a service affecting problem.

Appendix B
Ordering information

Use the following table for ordering Nortel Networks Technical Publications (NTPs) and PCLs (Product Content Loads):

Type of product	Source	Phone	Cost
Technical documents (paper or CD-ROM)	Nortel Networks Product Documentation	1-877-662-5669	Yes
Individual NTPs (paper)	Merchandising Order Service	1-877-662-5669	Yes
Marketing documents	Sales and Marketing Information Center (SMIC)	1-800-4NORTEL (1-800-466-7835 * ESN 444-5930) * Employee	No

When ordering publications on CD

Please have the CD number and software version available, for example, **HLM-2663-ENCDRPDF 09.02**.

When ordering individual paper documents

Please have the document name and number available, for example, **297-2663-001 DMS-500, Master Index of Publications**.

When ordering software

Please have the eight-digit ordering code, for example, **LLT00012**, as well as the ordering codes for the features you wish to purchase. Contact your Nortel Networks representative for assistance.

Digital Switching Systems

DMS-500

One Night Process Procedures Guide

Product Documentation–Dept 3423
Nortel Networks
P.O. Box 13010
RTP, NC 27709–3010
1–877–662–5669

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