Upgrading the Communication Server 2000

Nortel Networks offers service providers leading edge, carrier grade technologies that support packet network telephony and multimedia services. Upgrades are a necessary component of this commitment because they extend efficiencies, improve performance, and expand feature sets.

Strategy

CS 2000 uses sync-matched architecture for reliability purposes. Sync-matched architecture duplicates active CS 2000 functionality with an inactive counterpart that runs in hot-standby mode. This duplication makes a phased approach to upgrades possible. Phased upgrades begin on the inactive side and, after a switch of activity (SWACT) between the active and inactive sides, continue with the upgrade of the previously active, now inactive side. This technique minimize the likelihood of service interruptions.

Hardware Upgrades

Wherever possible, CS 2000 automatically detects and provisions upgraded hardware.

Software Upgrades

CS 2000 software upgrade procedures use the term “from-side” to refer to the product computing module load (PCL) software undergoing an upgrade; “to-side” to the new PCL software.

Tools and Utilities

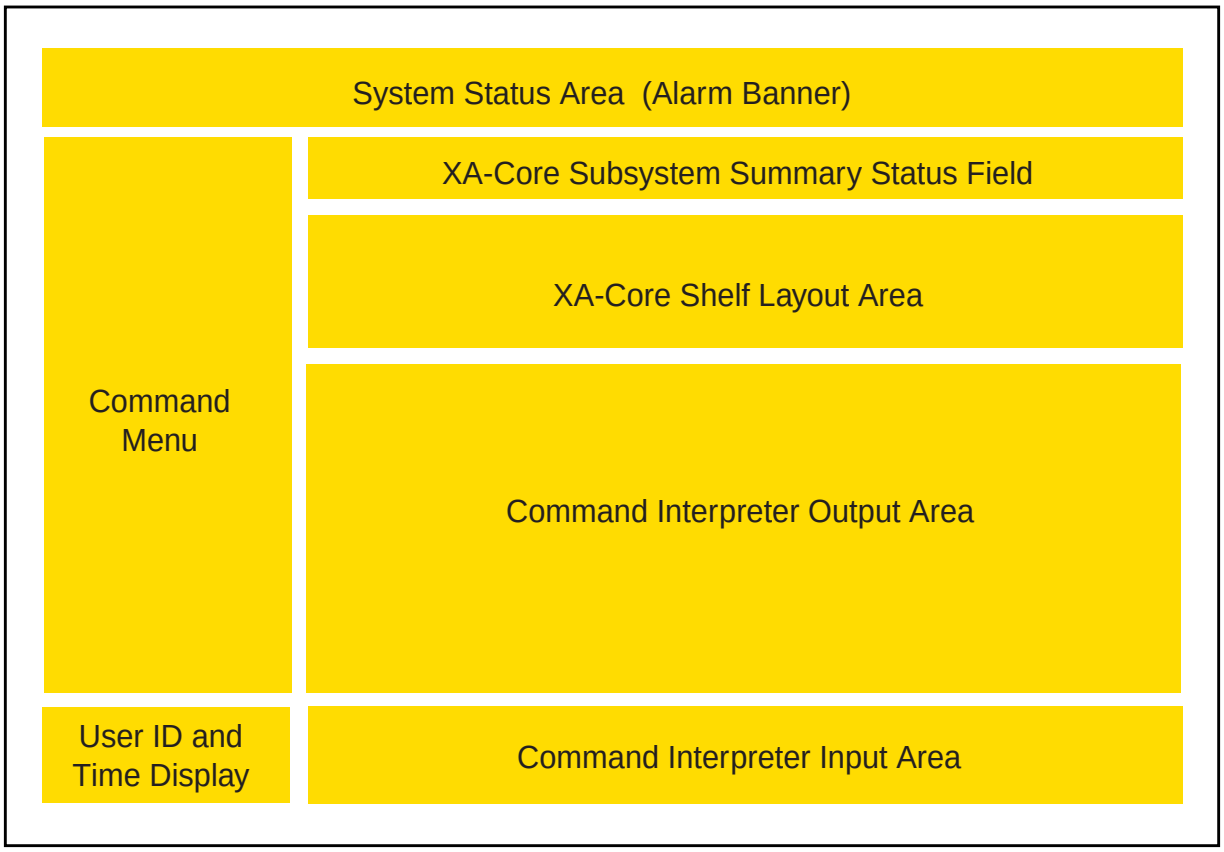
Upgrades to CS 2000 hardware require the use of tools available in a standard tool kit. No special tools are necessary to complete hardware upgrades. The XA-Core MAP Command Interface and the CS 2000 Management Tools support upgrade procedures.

XA-Core MAP Command Interface

The XA-Core MAP user interface displays real-time information about the CS 2000.

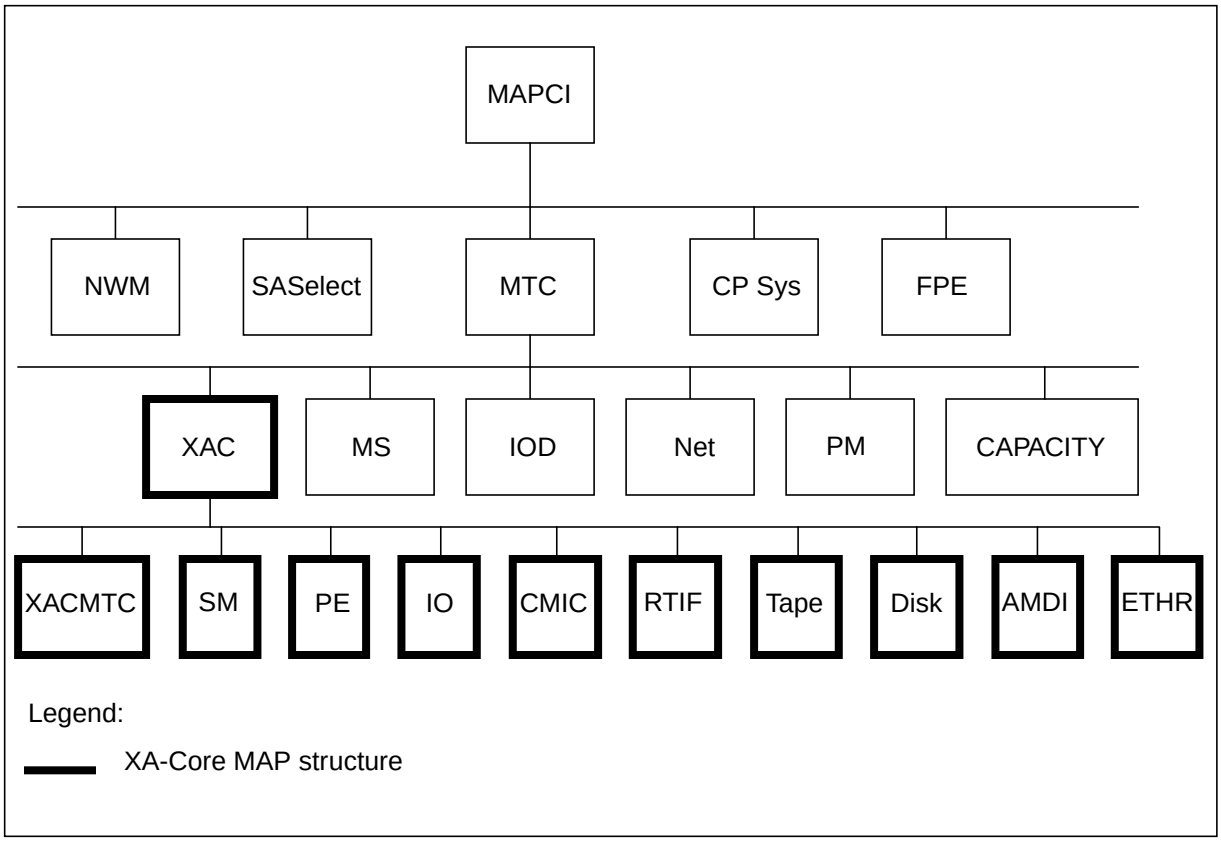
The command menu, command interpreter output, and command interpreter input areas of the MAP display support software upgrade procedures. The figure that follows shows the layout this display.

Layout of an XA-Core MAP display



Access to the XA-Core MAP levels starts from the command interpreter (CI) of the MAP display and, for upgrade purposes, continues through the MAPCI, MTC, and XAC hierarchy. The figure that follows shows the XA-Core MAP level hierarchy.

XA-Core MAP hierarchy



CS 2000 Management Tools

CS 2000 Management Tools is a collection (configuration) of products supporting Succession solutions that use the CS 2000. This set of tools runs on single or multiple servers, or is split to run on different servers. The actual deployment depends on the size of the network and individual customer needs and preferences.

The following software packages deliver these tools:

- CS 2000 Management Components
- Audio Provisioning Server
- Succession Server Platform Foundation Software

CS 2000 Management Components
CS 2000 Management Components (CS2M) refers to a Non-Compute Module Load (NCL) software package used on the CS 2000 Management Tools server. This package runs on SUN workstations and includes the following:

- Succession Element and Sub-element Manager
- Network Patch Manager
- CS 2000 SAM21 Manager
- QoS Collector Application

Succession Element and Sub-element Manager The Succession Element and Sub-element Manager (SESM) refers to the NCL software package that includes the following applications:

- GWC Manager
- UAS Manager
- APS Manager
- Nodes Configuration
- Trunks Configuration
- Carrier Endpoint Configuration
- Lines Configuration

Note: Lines Configuration uses SERVORD+

- Trunk Maintenance Manager
- Lines Maintenance Manager
- Line Test Manager
- V5.2 Configuration
- V5.2 Maintenance

Network Patch Manager The Network Patch Manager (NPM) refers to the software package that contains the patch management application for the Gateway Controller (GWC) and Media Gateway 9000 (MG 9000) network elements.

Note: The term Local Patch Manager refers to each client side target.

CS 2000 SAM21 Manager The CS 2000 SAM21 Manager (SAM21EM) refers to the software package that contains the manager application for the SAM21 Shelf COntroller.

QoS Collector Application The QoS Collector Application (QCA) refers to the software package that contains the collector application for QoS records sent from the Gateway Controller (GWC).

Audio Provisioning Server
The Audio Provisioning Server (APS) refers to the NCL software package that contains the APS application. This software supports the provisioning of announcements on the Universal Audio Server (UAS).

Succession Server Platform Foundation Software
The Succession Server Platform Foundation Software (SSPFS) refers to the NCL software package that contains the base operating system, common tools, software libraries, and server functions that the element management layer (EML) uses.

Note: The common tools include the performance monitoring (PM) poller and element management system (EMS) proxy services.

Upgrade Procedure Conventions

Communication Server 2000 (CS 2000) upgrades affect hardware or software or both. When necessary, upgrade procedures use the following conventions to identify the person or group responsible for the execution of a particular step:

- **SP** - the service provider using the CS 2000
- **SITE** - service provider personnel responsible for CS 2000 maintenance
- **SDE** - the software delivery engineer responsible to perform CS 2000 upgrades

In the procedures that follow, ACT refers to the active side CS 2000 processor elements (PE), INACT to the inactive side PEs.

MAP terminal commands, parameters, and responses conform to the conventions described in the sections that follow.

Commands, Parameters, and Responses

The following input prompts indicate that the MAP terminal is ready for a command entry:

> for the active (ACT) side device

MATE>for the inactive (INACT) side device

> **ATTENTION**
>
> When entering commands that apply to the inactive terminal make sure that the string **MATE>** precedes the cursor.

Letters typed to the right of the input prompt are MAP terminal commands or fixed parameters. These letters are not case sensitive. Always press the Enter key to complete the entry.

Commands and fixed parameters that appear inside angled brackets represent variables whose actual value is determined by the context. Commands and fixed parameters that appear inside square brackets are optional.

Example
> ldmate <filename> [verbose]

Note: Replace variables located inside angled brackets with the alphanumeric value that the variable represents. When necessary for clarity, a list of valid values for the variable follows the command string.

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

```
FP 3 Busy CTRL 0: Command request has been submitted.
FP 3 Busy CTRL 0: Command passed.
```

Precautionary Messages

Nortel Networks uses attention, danger, warning and caution messages. An attention precautionary message 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.

Sample Precautionary Messages

ATTENTION - Information needed to perform a task

ATTENTION

An attention precautionary message identifies information that is necessary for the proper performance of a procedure or task or the correct interpretation of information or data.

DANGER - Risk of electrocution or major personal injury including death

DANGER
Risk of electrocution

There is a risk of electrocution if the fuses are not removed.

WARNING - Risk of minor or moderate personal injury

WARNING
Sharp Edges

Exercise care when handling shelf guide pins. Guide pin edges are sharp and can cause cuts.

CAUTION - Risk of damage to equipment, service interruption or degradation, or electrostatic discharge

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.

Upgrade Procedures

For information about the overall office upgrade sequence, refer to *ATM Solutions Upgrades*, NN10261-450, or to *IP Solutions Upgrades*, NN10344-450.

Refer to the appropriate release of the *One Night Process Software Delivery Procedures*, 297-8991-303, for stepwise procedures to do the following:

- site preparation
- auditing and validating Data Schema table information
- restoring computing module and message switch load files
- upgrading software using the automated One Night Process (ONP)
- protecting billing information
- reverting to older software loads
- aborting the One Night Process
- supplementary procedures

Refer to the appropriate release of the *XA-Core Maintenance Manual*, 297-8991-510, for stepwise procedures to do the following:

- routine maintenance including:
  - upgrading XA-Core firmware
  - loading firmware on an upgraded circuit pack
- upgrading circuit packs
- recovering the XA-Core by:
  - booting
  - cold restart
  - reload restart