Critical Release Notice

Publication number: 297-8991-901
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The content of this customer NTP supports the SN06 (DMS) and ISN06 (TDM) software releases.

Bookmarks used in this NTP highlight the changes between the baseline NTP and the current release. The bookmarks provided are color-coded to identify release-specific content changes. NTP volumes that do not contain bookmarks indicate that the baseline NTP remains unchanged and is valid for the current release.

Bookmark Color Legend

Black: Applies to new or modified content for the baseline NTP that is valid through the current release.

Red: Applies to new or modified content for NA017/ISN04 (TDM) that is valid through the current release.

Blue: Applies to new or modified content for NA018 (SN05 DMS)/ISN05 (TDM) that is valid through the current release.

Green: Applies to new or modified content for SN06 (DMS)/ISN06 (TDM) that is valid through the current release.

Attention!
Adobe® Acrobat® Reader™ 5.0 is required to view bookmarks in color.

Publication History

March 2004

Standard release 09.03 for software release SN06 (DMS) and ISN06 (TDM).

Change of phone number from 1-800-684-2273 to 1-877-662-5669, Option 4 + 1.

297-8991-901

DMS-100 Family

Software Optionality Control

User Manual

BASE13 Standard 09.02 August 1999

NORTEL

NORTHERN TELECOM

DMS-100 Family

Software Optionality Control

User Manual

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August 1999

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Revised Chapter 4 for feature 59009996.

August 1998

BASE11 Standard 08.01

- removed STP chapter
- revisions to Chapter 4 (Changing the state of an option) for feature AU3246

February 1998

BASE10 Standard 07.01

- Added conditions for 8-bit SLS to Chapter 2 (feature AU2746)
- Added information on discontinuing and replacing SOC options.

August 1997

BASE09 Standard 06.01

- Revised Chapters 2 for feature SC0803
- Revised chapter 10 for features AR1966, AR1967, AR2002, and AR3036
- Added a new chapter 11 (feature AR4001)

March 1997

BASE08 Standard 05.01

The following chapters were revised to incorporate feature SC0702:

- Chapter 2, SOC quick reference guide
- Chapter 3, Processing options in a key code file
- Chapter 7, Creating a SOC report

SOC communication protocol (SOCCOM) information was added to Chapter 2.

November 1996

BASE07 Standard 04.02

- Reordered chapters.
- Added password file information to chapter 1.
- Added SOC quick reference guide after chapter 1.

August 1996

BASE07 04.01 Standard

- Added information for feature AR1827.
- Added chapter 11.

July 1996

BASE06 Standard 03.03

Added chapter identifying STP-specific features available as SOC options, and the method of activating each.

March 1996

BASE06 Standard 03.02

NTP status indicated on covers and title page changed from Draft to Standard.

September 1995

BASE06 Standard 03.01

Changed the software release applicability to BASE06, removing from SOC the potential for transition failures due to wait loops timing out on busy switches.

April 1995

BASE05 Standard 02.03

Changed the software release applicability from CSP04 to BASE05, and incorporated review comments.

April 1995

CSP04 Preliminary 02.02

Incorporated internal design review comments.

March 1995

CSP04 Draft 02.01

Added chapters about

- controlling the use of an option
- removing the right-to-use from an option
- assigning a warning threshold to an option

Updated chapter 1 and List of terms.

November 1994

CSP02 Preliminary 01.04

Incorporated editing comments.

Contents

About this document

Purpose of this document

This document is designed for operating company managers, engineers, planners and maintenance personnel who are activating, deactivating or defining parameters for software optionality control (SOC) options. This manual contains procedures for assigning and removing the right-to-use (RTU) for an option, changing the state of an option, assigning a usage limit or a warning threshold to an option, displaying information about options in a product computing module load (PCL) and performing an audit of the SOC database.

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 *next* 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 re-released in the *same* software release cycle. For example, the second release of a document in the same software release cycle is 01.02.

To determine which version of this document applies to the software in your office and how documentation for your product is organized, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

References in this document

The following documents are referred to in this document:

- *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.
- *DMS-100 Family Signaling Transfer Point Translations Guide,* 297-8101-350

- *DMS-100 Family Signaling Transfer Point Translations Guide*, 297-8111-350
- *DMS-100 Family Signaling Transfer Point Translations Guide*, 297-8121-350

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

The following excerpt from a procedure shows the command syntax used in this document:

1 Manually busy the CTRL on the inactive plane by typing

>BSY CTRL ctrl_no
and pressing the Enter key.

where

ctrl_no is the number of the CTRL (0 or 1)

Example of a MAP response:

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

Software optionality control overview

Introduction

In BASE05, the method Northern Telecom (Nortel) used to provide software options was changed. Prior to BASE05, operating companies used ordering codes (NTX software packages) to purchase DMS switch functionality. Nortel delivered customized batch change supplement (BCS) loads for each DMS switch. With DMS Evolution, all available software is provided in a product computing module load (PCL).

To provide the same level of customization that was available with BCS loads, Nortel has defined feature options that operating companies can purchase and has developed the software optionality control (SOC) utility to manage these options. SOC is part of the DMS Evolution product delivery process.

All functionality in a PCL is categorized as either base or optional. Base functionality is available for use immediately after installation of the software load. Optional functionality is grouped into commercial units called SOC options, that can be purchased by operating companies. Options can be ordered, activated and used without a software reload or restart.

The SOC utility provides a user interface for tracking and monitoring optional functions that have been licensed for use on a DMS switch. The SOC user interface consists of a group of command interpreter (CI) commands (in the SOC directory) that available at the maintenance and administration (MAP) terminal.

The SOC utility provides password protection for SOC controlled options. Nortel distributes passwords for options that are licensed by each operating company. A limited number of options are controlled by the SOC utility. For SOC controlled options, a password is required to change the option's right-to-use (RTU) state, which allows the options to be accessed and activated or deactivated. Other options are only tracked by the SOC utility.

Password files are transferred using the same methods that are used to deliver software patches, that is, drop boxes, network operations protocol (NOP) links (including X.25 and V.32), or dial-up modem communication.

More information on the use of SOC passwords is provided in the chapter "SOC quick reference" in this NTP.

Functional overview

SOC provides the following capabilities:

- provides an interface through which operating company personnel can activate and deactivate options
- maintains a database of option interdependencies to ensure that no option is activated or deactivated unless it is safe to do so
- tracks the state (on or idle) of SOC options
- tracks the RTU setting (Y or N) of SOC options
- generates reports containing status information on SOC options
- provides a mechanism for counting and limiting the usage of DMS services and resources
- defines and tracks options that are not controlled by SOC

Phases of operation

The three phases of operation: for SOC are

- software application
- restart
- normal

Software application

Software application is the phase during which the PCL is installed in the DMS switch. During a software application, SOC ensures that SOC options in the new software load inherit their settings from the previous software load. After a software application, all SOC options remain in their default states (on or idle) until a state change is requested through the SOC user interface.

Restart

During warm and cold restarts, SOC retains its database information, including the states, RTU settings, usage counts and usage limits of options. However, an option in an error condition that recovers by changing its state during the restart may not return to its original state. In this case, SOC generates a message indicating the new state of the option and why the option's state changed.

Normal

During normal operation, SOC periodically audits options to ensure that their current states and usage levels match the states and usage levels recorded for the options in the SOC data tables. During these audits, SOC also verifies that dependency requirements for options are being met. SOC also answers queries from other software about the state of options. In addition, operating company personnel can query the status of options on the switch during normal operation.

User requests include database information queries, RTU or usage limit assignments, and requests to change the usage threshold or state of options. Database information requests include queries about SOC option order codes, names, RTU settings, states, usage counts, and usage limits. SOC retrieves the information in the SOC database and formats the information for output. The user can view the information at the MAP terminal or route the information to a storage file.

SOC options

There are three types of SOC options:

- state
- usage
- dual

A state option has an RTU setting (yes or no) and a state (on or idle). The RTU setting must be yes for a user to change the state of the option. The initial RTU for state options can be NO, N/A (not applicable), or A/P (always provided). N/A is interpreted as RTU = NO and STATE = IDLE (locked). A/P is interpreted as RTU = YES (locked) and STATE = ON (locked).

A usage option has a usage limit (hard, soft or monitored) and a current usage. A usage option has no state and its RTU is determined by its usage limit. If the usage limit is zero, the RTU setting is no. If the usage limit is greater than zero, the RTU setting is yes.

A dual option has both a usage limit and a state, and its RTU is determined by its usage limit. LIMIT for a dual option can be any number from 0 to 9 999 999, either hard or soft, MONITORED, N/A, or A/P. RTU = N/A is interpreted as a hard limit of 0 (locked). A/P is interpreted as MONITORED (locked).

Usage limits apply to both resource usage counts and event counts. A hard usage limit is one that cannot be exceeded. A soft usage limit is one that can be exceeded. A monitored option has no usage limit.

SOC manages options in three ways. An option can be

- controlled
- tracked
- pending

SOC controls the state or usage of controlled options. Tracked options are not controlled by SOC. The RTU settings and usage limits of tracked options are only recorded by SOC. Tracking options allows SOC to provide a complete record of the RTU status of all options in a PCL.

A pending option is a place holder for an option that does not exist in the current software load, but will exist in a future load. Pending options allow the operating company to preconfigure an upcoming option in the on state, or with a certain usage limit. The options in the new load are automatically set to the state or usage limit that was assigned to them as pending options. A pending option with an RTU setting of yes before the application of the new software load is configured in the on state; a pending option with an RTU setting of no is configured in the idle state.

SOC allows an option to be replaced with one or more options. SOC also allows two or more options to replace a single option. For an option that replaces another option that is discontinued, the code MD (manufacture discontinued) appears in the SOC option definition for the new option. An option is replaced during a software upgrade from a load that contains the option to a load that does not contain the option.

SOC also allows options to be discontinued. If an option is discontinued, the option does not exist in the load after a software upgrade. In the new load, there is no indication that the option ever existed, that is, that the option is manufacture discontinued.

After a software upgrade in which an option is replaced, SOC assigns the attributes for the replaced option to the new option. After a software upgrade in which an option is removed and not replaced, SOC loses all knowledge of the option.

Key codes

A key code is an alphanumeric password that Nortel gives to the operating company. The key code allows the operating company to assign RTU to an option (granting key code), remove RTU from an option (removal key code), or assign a new usage limit to an option. A unique key code is used for each option in a DMS office.

What you can do with SOC

The user interface for SOC consists of CI commands in the SOC directory at the MAP terminal. The ASSIGN, SELECT, DBAUDIT and REMOVE commands allow you to

- assign the RTU state to an option
- remove the RTU state from an option
- assign a usage limit to an option
- assign RTU or usage limits to a group of options using a key code file
- assign the on or idle state to an option
- assign a warning threshold to a usage option
- generate a report about one or more options in a PCL
- perform an audit of the SOC database

Chapter 2, ”Assigning right to use an option,” contains a quick reference guide for the most commonly used SOC functions and commands.

Chapters 3 to 9, 11, and 12 contain step-action procedures for the activities listed above. Each procedure is self-contained and provides instructions for logging in and out of SOC. Multiple commands can be entered in the same SOC session, allowing you to perform more than one procedure without logging in and out of SOC between each procedure.

SOC quick reference

SOC overview

Software optionality control (SOC) options can be controlled, tracked, or pending. SOC controls the state of controlled options. SOC only monitors and provides reports for tracked options. A pending option is a place holder for an option that does not exist in the current software load, but is planned for a future load.

SOC options are delivered in product computing module loads (PCL). SOC options are software controlled and require passwords to assign right-to-use (RTU) to the option and to activate the option (change the state from idle to on). Tracked options are not software controlled, but require passwords for visibility of RTU in the SOC utility and accurate tracking of licensed software.

SOC options

There are three types of SOC options:

- state option
  - — RTU setting is yes or no
  - — State is on or idle
  - — RTU must be set to yes to change state
- usage option
  - — has a usage limit of soft, hard, or monitored
  - — has a current usage
  - — has no state
  - — RTU setting is determined by usage limit (RTU is yes for usage limit >0, RTU is no for usage limit = 0)
- dual option
  - — has both a usage limit and a state
  - — RTU setting is determined by usage limit

The initial RTU setting for SOC options can be no, yes, N/A (not applicable), or A/P (always provided). N/A and A/P are locked settings.

For state options, the following applies:

- N/A is interpreted as an RTU setting of no and a state of idle.
- A/P is interpreted as an RTU setting of yes and a state of on.

The initial usage limit for a dual option is 0 to 9 999 999, either soft or hard, monitored, N/A, or A/P. N/A and A/P are locked settings. For dual options, the following applies:

- An RTU setting of N/A is interpreted as a hard usage limit of 0.
- An RTU setting of A/P is interpreted as a usage limit of monitored.

The RTU for ordered options is delivered in the SOC control files, also known as key codes, or password files.

SOC options can be discontinued or replaced. For more information, refer to the SOC option description in Chapter 1, ”Software Optionality Control Overview.”

SOC password files

All the passwords that are required to implement an option are assembled into a single SOC control file. Each SOC control file consists of a file name and one or more password files.

SOC control file format

The following is the format for the SOC control file name:
<switch_id>$<sequence_no>$SCF

where

switch_id	is the switch identifier, an alphanumeric character string of up to 11 characters, starting with an alphabetic character.
sequence_no	is the four digit sequence number. If more than one $SCF file exists, the files must be processsed in the order of their sequence number.

The suffix $SCF, which must be present, indicates that the file is a SOC control file.

The SOC control file name must not exceed 20 characters in length.

The NORTEL_ID

- is the first record in the SOC control file

- is a unique identifier assigned to every DMS office, based on the office common language location identifier (CLLI)
- consists of up to 16 uppercase alphanumeric characters
- is set by the initial SOC control file delivery or password-protected SOC CI command
- requires a patch to change
- transfers during a one-night process (ONP)

Each password in a SOC control file for a state option includes the following:

- a tag for each option that indicates whether to grant (+) or revoke (–) the RTU for the option
- a number from 0 to 9 999 999 or UNLIMITED, to indicate the usage limit setting
- an order code for the option consisting of eight uppercase alphanumeric characters
- a 20-character password that is used to grant RTU for the option

Each password in a SOC control file for a usage option includes the following, in the order the items are listed:

- a tag for each option that indicates whether to grant (+) or revoke (–) the RTU for the option
- a number from 0 to 9 999 999 to indicate a hard usage limit setting, that is, a usage limit that is not to be exceeded
- a number from 0 to 9 999 999 followed by an S, to indicate a soft usage limit setting, that is, a usage limit that can be exceeded
- MONITORED to indicate an unlimited usage option
- an order code for the option consisting of eight uppercase alphanumeric characters
- a 20-character password that is used to grant RTU for the option

SOC Communication Protocol

The SOC Communication Protocol (SOCCOM) feature provides the capability for remote access to the SOC application on the DMS switch. SOCCOM allows Nortel and operating company personnel at the remote network operations system (NOS) to apply SOC key codes and collect SOC option reports for the DMS switch.

SOCCOM is a network operations protocol (NOP) application that acts as an interface between the DMS SOC application and the remote application on the NOS. SOCCOM provides the following functionality:

- version control, to ensure that the corresponding releases of the remote SOC and SOC applications are being used
- the capability to query and set the NORTEL_ID office parameter
- interactive communication between the remote user and the SOC application for the following commands:
  - — ASSIGN KEYS (used to turn features on or off)
  - — SELECT ALL PACK (used to display information about SOC options)

Activating the SOC Communication Protocol feature

The SOC Communication Protocol feature is activated in table NOPAPPLN by changing the appropriate tuple, indexed by the directory number address (DNA) key (field DNAKEY), so that the SOCCOM application is enabled for the DNA. If the value of refinement CHOICE in field APPLNS is ALL, then all applications are valid and no datafill change is required. If the value of refinement CHOICE in field APPLNS is ONLY, then the SOCCOM feature must be added to the tuple.

Use the following procedure to activate the SOC Communication Protocol feature.

1 Access table NOPAPPLN by typing

>TABLE NOPAPPLN

and pressing the Enter key.

MAP response example:

```
TABLE: NOPAPPLN
```

2 List all the tuples in the table by typing

>LIS ALL

and pressing the Enter key.

MAP response example:

```
          DNAKEY
                                                                    APPLNS
------------------------------------------------------------------------
      9040001105                                                      ALL

      9040001106
      ONLY  (FTRAN)  (PTAE_APPL)  $
```

3 Activate SOCCOM for the DNA by typing

>CHA APPLNS ONLY appln1 appln2 SOCCOM $

and pressing the Enter key.

where

appln1 is the first application associated with the DNA
appln2 is the second application associated with the DNA

Note: The values appln1 and appln2 represent the applications that are associated with the DNA. One or more applications can be entered in the command string.

Example input:

>CHA APPLNS ONLY FTRAN PTAE_APPL SOCCOM $

MAP response example:

```
TUPLE TO BE CHANGED:
904001106
ONLY   (FTRAN)    (PTAE_APPL)  (SOCCOM)  $

ENTER Y TO CONFIRM, N TO REJECT, E TO EDIT.
```

4 Confirm the command by typing

>Y

and pressing the Enter key.

MAP response example:

```
TUPLE CHANGED:
JOURNAL FILE INACTIVE.
```

5 Quit from table NOPAPPLN by typing

>QUIT

and pressing the Enter key.

SOC commands

The following table contains a brief description of the SOC commands. For each command, the description identifies the chapter in this NTP that contains detailed instructions on the use of the command.

SOC commands

Command	Description	Related chapter
ASSIGN	used to	
	• assign option order codes from a file	Chapter 3, “Processing options in a key code file”
	• assign a key code to a SOC option	
	• assign a new state to a state or dual option	Chapter 4, “Changing the state of an option”
	• assign a usage limit to a usage or dual option	Chapter 5, “Assigning a usage limit to an option”
	• assign a warning threshold to a usage or dual option	Chapter 6, “Assigning a warning threshold to an option”
	• assign RTU to an option	Chapter 11, “Assigning right to use to an option”
	• remove RTU from an option	
DBAUDIT	used to audit SOC data and report any inconsistencies.	Chapter 8, “Auditing the SOC database”
HELP	used to display information on SOC commands	none
Q	used to display information on SOC commands	none
QUIT	used to quit from the SOC utility	none
REMOVE	used to remove RTU from an option	Chapter 12, “Removing RTU from an option”
SELECT	used to display information on SOC options	Chapter 7, “Creating a SOC report”
SOC	used to access the SOC utility	none

—continued—

SOC commands (continued)

Command	Description	Related chapter
SOCDEBUG	used to access the SOC debug utility. The SOC debug utility is only for use by NORTEL field support.	none
VALIDATE	This command is designed to determine whether an attempted SOC option state transition would be successful. ***Note:*** If the VALIDATE command returns a pass result, there is a possibility that the indicated state transition can still fail. Likewise, if the VALIDATE command returns a fail result, there is a possibility that the indicated state transition would be successful.	none
	—end—	

Verifying the content of SOC control files

SOC control files can contain more SOC option order codes than are ordered. Additional (unordered) SOC options are primarily the result of dependencies for ordered options.

Printing the SOC control file

Use the following procedure to print a SOC control file.

Note 1: SOC control files are delivered by one of the following methods:

- downloading by Nortel to the store file device (SFDEV)
- distribution by the telephone company

Note 2: Check your company procedures to determine your distribution method and the device into which the SOC control file is deposited.

Note 3: In the examples in the following procedure, SOC control file A12DS0$0001$SCF has been deposited in system load module disk volume s00dasoc.

1 Access the disk utility by typing

>DISKUT

and pressing the Enter key.

2 List the files in the volume that contains the SOC control file by typing

>LF volume_name

and pressing the Enter key.

where

volume_name — is the name of the volume that contains the SOC control file

Example input:

>LF SOODASOC$

MAP response example:

```
File information for volume S00DIMAGE1:
{NOTE:  1 BLOCK = 512 BYTES }
------------------------------------------------------------------------
FILE NAME       O   R    I    O    O    O  FILE MAX  NUM OF   FILE   LAST
                R   E    T    P    L    L  CODE REC RECORDS   SIZE MOFIFY
                G   C    O    E    D    D       LEN      IN     IN   DATE
                         C    N                      FILE BLOCKS
------------------------------------------------------------------------
DOLIST          O   V                         0 128      60     15 950811
A12DS0$0001$SCF O   V                         0 128      33     15 950811
KWH16IB5$PATCH  O   V                         0 128      31     15 950728
AUTOSCHED       0   V                         0 128      32     15 950802
```

3 Quit the disk utility by typing

>QUIT

and pressing the Enter key.

4 Print the contents of the volume by typing

>RECORD START ONTO printer_name
and pressing the Enter key.

where

volume_name — is the name of the volume that contains the SOC control file

Example input:

>RECORD START ONTO MPS26D13C

MAP response example:

```
DONE
```

5 Print the SOC control file by typing

>PRINT file_name
and pressing the Enter key.

where

file_name — is the name of the SOC control file (A12DS0$0001$SCF in the example)

MAP response example:

```
AD12DS0$0001$
+ RES00012    DQW9X3UZ9VEAK4A2851R
```

6 Compare the contents of the SOC controle file to your order.

Note 1: The SOC control file contains the switch identifier (AD12DS0 in the example) in the first record and the SOC order codes in each of the records that follow (RES00012 in the example).

Note 2: Each record has the format <+, –> <soc_order_code> <soc_key>. The first field usually has the value +, indicating that the RTU is to be set to Y (yes). If this field has the value –, the RTU is to be set to N (no).

7 Reconcile any differences. If you find any differences between your order and the SOC control file, contact your Nortel customer service representative.

Assigning RTU and activating SOC options

ATTENTION

When the SOC control file is the first delivered to an office, the operating company must establish the NORTEL_ID by using the control file and the ASSIGN KEYS comand. If the SOC control file is not used to establish the NORTEL_ID, the NORTEL_ID is undefined, and the operating company is not able to install or activate SOC.

Use the following procedure to assign RTU to and activate SOC options.

1 Enter the SOC utility by typing

>SOC

and pressing the Enter key.

2 Assign RTU and usage limits to options in the SOC control file by typing

>ASSIGN KEYS FROM FILE

and pressing the Enter key.

Note: The system searches for all files with the $SCF suffix. All devices found in tables PADNEV and SFDEV are searched. If a single $SCF file is found, the file is processed. If more than one $SCF file is found, the response is as shown in the following example.

MAP response example:

```
Failed: No keys were assigned.
More than one SCF file was found.
You may assign keys from one or more of these files by
typing

ASSIGN KEYS FROM <filename>

Please note that the four digits enclosed by the $ signs
in a filename represent a sequence number.  The files
should be processed in order of their sequence number.
```

Note: The password file is deleted after the command is executed. For a detailed decription of this step, refer to Chapter 3, Processing options in a key code file.

If the ASSIGN KEYS command	Do
passes	step 7
fails	step 3

3 Assign RTU and usage limits to the options in the SOC control file with the lowest sequence number by typing

>ASSIGN KEYS FROM switch_id$sequence_no$SCF

and pressing the Enter key.

where

switch_id is the switch identifier (OTWAONXBD50 in the example below)

sequence_no is the sequence number of the SOC control file (0034 in the example below)

Example input:

>ASSIGN KEYS FROM OTWAONXBD50$0034$SCF

4 Repeat step 3 for each of the remaining $SCF files.

Note: The files must be processed in order of their sequence number.

5 Activate the first option by typing

>ASSIGN STATE TO ON option1

and pressing the Enter key.

Example input:

>ASSIGN STATE TO ON CTX0001

6 Repeat step 5 for each of the remaining options.

7 Quit from the SOC utility by typing

>QUIT

and pressing the Enter key.

SOC status reports

The following types of SOC reports can be generated:

- brief
  - — shows the basic RTU, state, usage, last change date, and type information for options
- pack
  - — same content as the brief report, but all extra spaces are deleted

- verbose
  - — In addition to the content of the brief report, the verbose report also shows option dependencies (needed options and mutually exclusive options), options replaced, thresholds, feature usage counts for usage and dual options, and high water marks.
- full
  - — In addition to the content of the verbose report, the full report contains the feature identifiers, feature names, feature states, and the last change dates for included features.

Feature usage counts are are not set to zero during restarts.

For detailed information and instructions on SOC reports, refer to Chapter 7, “Creating a SOC report”.

Processing options in a key code file

A key code file is set up by Nortel and contains a list of order codes and key codes. This file allows the operating company to assign the right-to-use (RTU) settings and usage limits to a group of options, instead of processing each option individually.

The following step-action procedure explains how to apply key codes in a file to a set of options. Software optionality control (SOC) generates a SOC504 log for each successful key code application and a SOC505 log for each unsuccessful one.

Procedure for processing options in a key code file

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate SOC command directory...SOC not started`	step 2
`Couldn't allocate mailboxes...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 31.

3 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 31 .

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete and then go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 The response means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 31.

9 You have successfully started a SOC session. Your next step depends on whether you are specifying a file name or device other than the default.

Note: We recommend that you use the default file name and device; however, SOC capability enables you to specify your own file name and device.

If you are	Do
accepting the default file name and default device	step 10
specifying a file name and device	step 13
specifying a file name and accepting the default device	step 14

10 To assign RTU and usage limits to options in a file with the default file name and default device, enter the ASSIGN KEYS command by typing

>ASSIGN KEYS FROM FILE

and pressing the Enter key.

If the response is	Do
`Failed: No KEYS were assigned.` `More than one $SCF file was found.`	step 11
anything else	step 15

11 Assign RTU and usage limits to the file with the lowest sequence number by typing

>ASSIGN KEYS FROM filename

and pressing the Enter key.

Note: The default file name has the format <switch_id>$<sequence_no>$SCF, where switch_id is the switch identifier, sequence_no is the $SCF file sequence number, and the file is located on one of the volumes in table PADNDEV or on table SFDEV.

12 Repeat step 11 for each of the remaining $SCF files.

Note: The $SCF files must be processed in order of their sequence number.

Go to step 15.

13 To assign RTU and usage limits to options in a file whose name and device you are specifying, enter the ASSIGN KEYS command by typing

>ASSIGN KEYS FROM filename device

and pressing the Enter key.

where

filename — is an alphanumeric name of a file, supplied by Nortel, that lists order codes and corresponding key codes

device — is the alphanumeric name of the device that contains the volume that contains the file

Example input:

>ASSIGN KEYS FROM OTWAONXBD50 SFDEV

Go to step 15.

14 To assign RTU and usage limits to options in a file when you are specifying the file name and accepting the default device, enter the ASSIGN KEYS command by typing

>ASSIGN KEYS FROM filename

and pressing the Enter key.

where

filename — is an alphanumeric name of a file, supplied by Nortel, that lists order codes and corresponding key codes

Example input:

>ASSIGN KEYS FROM OTWAONXBD50

15 Your next step depends on the system response to the ASSIGN KEYS command.

If the system response is	Do
`Done`	step 16
`<error summary> Done <n> errors detected.  File not erased`	step 17

16 The ASSIGN KEYS command was successful. The RTU and usage limit requests for all options in the file have been processed, and the file was deleted.

Go to step 33.

17 The response is a summary of the errors SOC found while processing the key code file. Order codes associated with an error may not have been processed. Review the key code file to determine the errors. Your next step depends on the error messages that precede the summary message.

Note: More than one of these messages may appear.

If the system response is	Do
`Cannot find file <filename> on any device in table PADNDEV`	step 18
`Cannot find file <filename> on device <device>`	step 19
`Cannot revoke RTU in file state is not IDLE in file <file> at line <line number>`	step 20
`File processing error: couldn't close <filename>`	step 21
`File processing error: couldn't erase <filename>(but key codes were applied successfully)`	step 22
`File processing error: couldn't open <filename>`	step 23
`File processing error: couldn't read <filename>`	step 24
`Incorrect CLLI in <filename> at line 1`	step 25
`Incorrect key code for option in file <file name> at line <line number>`	step 26

—continued—

If the system response is	Do
`Illegal order code <code> in file <file> at line <line number>`	step 27
`Syntax error in <file name> at <line number>`	step 28
`Unknown key code tag (should be +,– or a limit) in <filename> at line <linenum>`	step 29
`Unknown order code <code> (or wrong key code for new option) in file <file> at line <line number>`	step 30
—end—	

18 SOC could not find the key code file on any devices listed in table PADNDEV. Ensure that the file name is correct and that the file resides on the specified device. If the file and device name are incorrect, try the ASSIGN KEYS command with the correct names and then go to step 15.

If the problem persists, go to step 32.

19 SOC could not find the key code file on the device displayed in the error message. Ensure that the file name is correct and that the file resides on the specified device. If the file and device name are incorrect, try the ASSIGN KEYS command with the correct names and then go to step 15.

If the problem persists, go to step 32.

20 SOC found an option in the on state in the key code file and, therefore, the RTU for that option cannot be removed. Change the state of the option to idle by following the procedure in Chapter 4, ”Changing the state of an option,” and remove the RTU for that option following the procedure in Chapter 12, and then return to this point.

If there are other error messages, take appropriate action; otherwise, go to step 33.

21 SOC processed the key code file but could not close it. The message shows the name of the file. SOC exits the file without deleting it. If no other error conditions exist, the RTU and usage limit requests for all options in the file have been processed.

If there are other error messages, take appropriate action; otherwise, go to step 33.

22 SOC processed the key code file but could not delete it. The message shows the name of the file. If no other error conditions exist, the RTU and usage limit requests for all options in the file have been processed.

If there are other error messages, take appropriate action; otherwise, delete the file if you can and then go to step 33.

23 SOC could not open the key code file. Either the file is open for another process or there is a file system failure.

Go to step 32.

24 SOC found an error while reading the key code file. If at least one line has been read by SOC, the message displays the number of the line with the error. Either the file is incorrectly formatted or the physical device has a problem.

Go to step 32.

25 The NORTEL_ID on the first line of the file does not match the NORTEL_ID for your office as specified in table OFCSTD.

Go to step 32.

26 SOC found an incorrect key code in the key code file. The file name and line number of the incorrect key code, and its corresponding order code, are displayed in the error message.

Go to step 32.

27 SOC found an order code with invalid syntax in the key code file. The file name and line number of the invalid order code are displayed in the error message.

Go to step 32.

28 The system cannot interpret one of the lines in the file. The file name and line number are provided in the error message.

Go to step 32.

29 SOC found an incorrect grant character, revoke character or limit in the key code file. The option with the order code associated with that key code is not processed and the file is not deleted. All options without errors in the key code file are processed.

Go to step 32.

30 Either the key code is not valid for creating a pending option or SOC does not have a record of the order code. The file name and line number of the unknown order code are displayed in the error message.

Go to step 32.

31 For assistance starting a SOC session, contact the personnel responsible for the next level of support.

32 For assistance fixing errors that SOC found while processing the ASSIGN KEYS command, contact the personnel responsible for the next level of support.

When you have corrected the problem in the error message that sent you to this step, address the next error message. When all problems have been corrected, go to step 33.

33 Quit the SOC directory by typing

>QUIT

and pressing the Enter key.

34 You have completed this procedure.

Changing the state of an option

Option states

Software optionality control (SOC) allows you to activate an option (assign the on state) and to deactivate an option (assign the idle state). In the on state, an option is fully operational; in the idle state, an option cannot be used. Some options retain datafill in the idle state. Other options can have datafill in the on state only; for these options, datafill must be removed before the option can be set to idle. Usage options do not have a SOC state.

Once an operating company purchases an option, receives the key code for the option and assigns the right-to-use (RTU) to the option, the option can be activated and deactivated without Nortel involvement. When you activate an option, SOC verifies that the RTU setting is yes before allowing the option to change states. When you deactivate an option, SOC displays messages, if there are any, describing the impact of deactivating the option, and prompts you either to confirm or to cancel the request. After the option is deactivated, it is not operational.

The following step-action procedure provides instructions on how to change the state of an option. SOC generates a SOC501 log if the option successfully changes state. SOC generates a SOC503 log, and possibly a SOC502 log, if the option does not change state. A SOC502 log indicates which feature in the option caused the failure.

Procedure for assigning a state to an option

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 29.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 29.

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete and then go to step 1.

5 This message means that your CI session already has a SOC session running.

Go to step 9.

6 This message means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 29.

9 You have successfully started a SOC session. To change the state of an option, enter the ASSIGN STATE command by typing

>ASSIGN STATE state TO order_code

and pressing the Enter key.

where

state — is the state to which you want to change the option (IDLE or ON)

order_code — is the order code (8 alphanumeric characters), assigned by Nortel

Example input:

>ASSIGN STATE ON TO CTX00001

10 Your next step depends on the system response to the ASSIGN STATE command.

If the system response is	Do
`Done`	step 11
`<failure reasons> Transition failed. Option is in state <state>`	step 12
`Illegal order code <code>`	step 13
`Illegal to assign state to tracked or pending option`	step 14
`Illegal to assign state to usage-only option`	step 15
`<impact statement> Confirm change of option <order code> to state <state> by entering the textual option name`	step 16
`Right-to-use not granted`	step 22
`Unknown order code <code>`	step 23
`<validation errors> Transition refused, because of validation errors`	step 24
`ERROR: MLIU links exist in table C7LINK, this is not supported. STP SOC Validation failed. MLIU links exists.`	step 25

—continued—

If the system response is	Do
This office has not been defined as an MPC-compliant office. Order code TEL00012 remains in the IDLE state.	step 27
There are still multiple SSP nodes per Network Indicator (NI) entries in table C7NETWRK. Please remove any multiple SSP nodes from table C7NETWRK before attempting to set order code TEL00012 to IDLE state. Order code TEL00012 remains in ON state.	step 28
—end—	

11 The ASSIGN STATE command was successful. The option has been changed to the specified state.

12 The attempt to change the state of the option failed. The response displays the reason for the failure, how to fix the problem, and the current state of the option. The current state of the option will be one of on, idle, on-to-idle and idle-to-on. On-to-idle and idle-to-on are transitional states; if an error occurs during the state transition and the option can neither revert to its previous state nor change to the new one, the option will be in either the on-to-idle or the idle-to-on state.

Correct the problem identified in the error messages and then go to step 9.

If the problem persists, go to step 29.

Go to step 30.

13 The string you entered is not a valid order code. Try the ASSIGN STATE command with the correct order code and then go to step 10.

If the problem persists, go to step 29.

14 The state change cannot be processed because the option is a tracked or pending option. Check that you have entered the correct order code; if you have not, try the ASSIGN STATE command with the correct order code and go to step 10.

If the problem persists, go to step 29.

15 The state change for the option cannot be processed because the option is a usage option. Check that you have entered the correct order code; if you have not, try the ASSIGN STATE command with the correct order code and go to step 10.

If the problem persists, go to step 29.

16 The response describes the impact of changing the state of the option to IDLE and displays a prompt for the textual name of the option. Read the messages about the impact of the state change.

17 Determine whether or not you want to proceed with the request to change the state of the option.

If you	Do
want to change the state of the option	step 18
do not want to change the state of the option	step 21

18 Respond to the prompt by typing the textual name of the option and pressing the Enter key.

If the system response is	Do
`Too many tries. Command cancelled`	step 19
`Done`	step 30

19 The system terminated processing because you entered an incorrect textual name three times. To determine the correct textual name for the option, generate a brief report for the option by typing

>SELECT OPTION order_code

and pressing the Enter key.

where

order_code is the order code (8 alphanumeric characters) assigned by Nortel

20 Record the textual name for the option shown under the NAME heading and then go to step 9.

If the problem persists, go to step 29.

21 To stop processing of the ASSIGN STATE command, press the Enter key. The system response *Command cancelled*. indicates the command has been cancelled.

Go to step 30.

22 The RTU state has not been set to YES for this option. If the option is a state option, follow the procedure for assigning RTU in Chapter 11. If the option is a dual option, follow the procedure for assigning a usage limit in Chapter 5. When you have completed the procedure, go to step 1.

23 SOC does not have a record of the specified order code. Check that you have entered the correct order code; if you have not, try the ASSIGN STATE command with the correct order code and then go to step 10.

If the problem persists, go to step 29.

24 The state change for the option has not been allowed because all or part of the option is unable to change state.

Read the reasons for the validation errors in the error message. Follow the solutions suggested in the error message and try the ASSIGN STATE command again for this option.

If the problem persists, go to step 29.

25 SOC integrated node (INode) functionality cannot be activated if multiple link interface unit (MLIU)-based links exist in table C7LINK.

If you	Do
require INode functionality	step 26
do not require INode functionality	step 30

26 Remove the MLIU-based links from table C7LINK. Refer to the *DMS Translations Guide*. Return to step 1.

27 The service switching point (SSP) multiple point code (MPC) software required to activate SOC option TEL00012 does not exist in the office. Contact your next level of support to request the appropriate software.

Go to step 30.

28 Multiple SSP nodes exist for a network indicator (NI) entry in Table C7NETWRK. Remove the additional SSP nodes from Table C7NETWRK. For more information, refer to the *DMS Translations Guide*.

Go to step 30.

29 For assistance, contact the personnel responsible for the next level of support.

30 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

31 You have completed this procedure.

Assigning a usage limit to an option

Usage limits allow the operating company and Nortel to control the amount of resources or services used. Defining usage limits is part of the contractual arrangement between Nortel and the operating company and is controlled by key codes, which are passwords distributed by Nortel. Software optionality control (SOC) records a current usage and a high water mark in units defined by the option for each usage option and dual option. This information is available to the operating company in SOC reports and is used as input to Nortel for billing purposes.

Assigning usage limits to options

When setting usage limits, you can set a soft limit or a hard limit, or you can specify that the option be monitored. When a hard limit of an option is reached, no more of the option's resources can be allocated; SOC generates a log stating that a hard limit has been reached. When a soft limit for an option is reached SOC generates a log, but the option's resources can still be allocated. SOC records the usage level but does not limit the usage of a monitored option.

Controlling the RTU of usage options

Setting the usage limit controls the right-to-use (RTU) for usage and dual options. The RTU is yes if you assign a usage limit greater than zero. The RTU is no if you assign a usage limit of zero.

The following step-action procedure explains how to assign a usage limit to an option. SOC generates a SOC504 log if the procedure is successful and a SOC505 log if the procedure is not successful.

Procedure for assigning a usage limit to an option

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 23.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 23.

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete and then go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 This message means that SOC is already running on the DMS switch. Only one session at one time can be run. The user ID of the user running the other session is shown in the message.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 23.

9 You have successfully started a SOC session. To assign a usage limit to an option or to create a pending option, enter the ASSIGN LIMIT command by typing

>ASSIGN LIMIT limit key_code TO order_code

and pressing the Enter key.

where

limit — is the new limit value for the option (number between 0 and 9 999 999 or MONITORED)

key_code — is the key code assigned by Nortel (20 alphanumeric characters), for setting a usage limit for the option

order_code — is the order code (8 alphanumeric characters) assigned by Nortel

Note: MONITORED in the limit field specifies that SOC does not restrict the usage of the option.

Example input:

>ASSIGN LIMIT 1945 ABCDABCDABCDABCDABCD TO CTX00001

10 Your next step depends on the system response to the ASSIGN LIMIT command.

If the system response is	Do
`Done<Warnings>`	step 11
`Cannot set limit for state option`	step 12
`Cannot set limit to zero because option state is not IDLE`	step 13
`Illegal limit (must be 0<=limit<=9999999)`	step 14
`Illegal order code <code>`	step 15
`Incorrect key code for option`	step 16
`Maximum supported SSP routeset limit is 255 tuples.`	step 17
`Maximum supported SSP routeset limit is 2047 tuples.`	step 18
`Option <order code> is N/A (not applicable|A/P (always provided). Its <RTU|limit|state> cannot be changed.`	step 19
`SSP routeset limit must be 1 less than a multiple of 256.`	step 22
`Unknown order code <code> (or wrong key code for new option)`	step 24

11 The ASSIGN LIMIT command was successful. You have assigned a usage limit to the option, have set the usage limit of the option to monitored, or have created a pending option. The response may include information messages.

Go to step 25.

12 You have tried to assign a usage limit to a state option. Check that you have entered the correct order code; if you have not, try the ASSIGN LIMIT command with the correct order code and then go to step 10.

If the problem persists, go to step 23.

13 The state of a dual option must be idle before you can set the limit for that option to zero. Follow the procedure in Chapter 4, ”Changing the state of an option,” to change the state of the option to idle and then go to step 9.

If the problem persists, go to step 23.

14 You have entered an incorrect usage limit. The usage limit must be a number between 0 and 9 999 999 or the word MONITORED. Try the ASSIGN LIMIT command with a correct usage limit and then go to step 10.

If the problem persists, go to step 23.

15 The string you entered is not a valid order code. Try the ASSIGN LIMIT command with the correct order code and then go to step 10.

If the problem persists, go to step 23.

16 You have specified an incorrect key code for assigning a usage limit to the option. Check that you have entered the correct key code and order code. If you have not, try the ASSIGN LIMIT command with the correct key code and order code and then go to step 10.

If the problem persists, go to step 23.

17 If the tuple is added, the limit for routesets with external routing off will be exceeded.

Go to step 23.

18 If the tuple is added, the limit for routesets with external routing on will be exceeded.

Go to step 23.

19 Ensure that the order code for the option is correct.

If the order code is	Do
correct	step 20
incorrect	step 21

20 The option is designated as not applicable (N/A) or always provided (A/P). You cannot change the option's RTU state.

Go to step 25.

21 Try the ASSIGN RTU command with the correct order code and then go to step 10.

22 The routeset limit must be one less than a multiple of 256 (that is, 255, 511, 767, 1023, 1279, 1535, 1791, or 2047)

Go to step 23.

23 For assistance, contact the personnel responsible for your next level of support.

24 If you are trying to create a pending option, this response indicates that the key code is not valid for the option. If you are trying to assign a usage limit to an existing option, this response indicates that SOC does not have a record of the specified order code.

Check that you have entered the correct order code; if you have not, try the ASSIGN LIMIT command with the correct order code and then go to step 10.

If the problem persists, go to step 23.

25 Exit the SOC directory by typing

>QUIT
and pressing the Enter key.

26 You have completed this procedure.

Assigning a warning threshold to an option

Warning thresholds allow the operating company to set a usage level for an option at which software optionality control (SOC) generates a log (SOC800). The warning threshold is for the operating company's convenience. For example, an operating company may set a warning threshold to 90% of the purchased usage limit to alert the company that more resources should be purchased. This threshold can be either a percentage of a usage limit or an absolute number. A warning threshold, unlike the usage limit, is not password-controlled.

The following step-action procedure describes how to assign a warning threshold to an option. SOC generates a SOC507 log if a warning threshold is successfully assigned to an option. A SOC508 log is generated if problems are encountered.

Procedure for assigning a warning threshold to an option

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 This message indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 16.

3 This message indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 16.

4 This message indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete.

Go to step 1.

5 This message means that your CI session already has a SOC session running.

Go to step 9.

6 This message means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 16.

9 You have successfully started a SOC session. To assign a warning threshold to an option, enter the ASSIGN THRESHOLD command by typing

>ASSIGN THRESHOLD threshold thresh_type TO order_code

and pressing the Enter key.

where

threshold — is the new threshold value for the option (see notes)

thresh_type — specifies whether the threshold is a number or a percentage (PERCENT or ABSOLUTE; ABSOLUTE is the default)

order_code — is the order code (8 alphanumeric characters), assigned to the option by Nortel

Note 1: If the threshold type (thresh_typ) is PERCENT, the threshold must be a number between 0 and 100. If the threshold type is ABSOLUTE, the threshold must be a number between 0 and 9 999 999.

Note 2: If the limit for the option is monitored and the threshold type is PERCENT, you must specify 100 in the threshold field.

Example input:

>ASSIGN THRESHOLD 90 PERCENT TO CTX00001

10 Your next step depends on the system response to the ASSIGN THRESHOLD command.

If the system response is	Do
`Cannot set threshold on state-only option`	step 11
`Illegal order code <code>`	step 12
`Illegal threshold`	step 13
`Unknown order code`	step 14
`Usage warning threshold set to <threshold> for option <option> <Warnings>`	step 15

11 You have tried to assign a usage threshold to a state option. Check that you have entered the correct order code; if you have not, try the ASSIGN THRESHOLD command with the correct order code and then go to step 10.

If the problem persists, go to step 16.

12 The string you entered is not a valid order code. Try the ASSIGN THRESHOLD command with the correct order code and go to step 10.

If the problem persists, go to step 16.

13 You have typed an incorrect value for threshold. If the threshold type (thresh_typ) is PERCENT, the threshold must be a number between 0 and 100. If the threshold type is PERCENT and the limit is monitored, the threshold must be 100. If the threshold type is ABSOLUTE, the threshold must be a number between 0 and 9 999 999. Try the ASSIGN THRESHOLD command with a correct threshold value and then go to step 10.

If the problem persists, go to step 16.

14 SOC does not have a record of the specified order code. Check that you have entered the correct order code; if you have not, try the ASSIGN THRESHOLD command with the correct order code and then go to step 10.

If the problem persists, go to step 16.

15 The usage warning threshold for the option has been set. SOC has updated the SOC database with the new threshold value. The response may contain a message stating that the new threshold is not reachable because it is above the hard usage limit of the option or that the current usage of the option already exceeds the new threshold.

Go to step 17.

16 For assistance, contact the personnel responsible for your next level of support.

17 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

18 You have completed this procedure.

Creating a SOC report

Software optionality control (SOC) reports provide information about the SOC options in the operating company's product computing module load (PCL).

Types of SOC reports

You can request four types of reports on SOC options: brief, pack, verbose, and full. You can generate a report for all options or a report for a specific subset of options.

Reports can be generated for

- a specific option, by order code or by name
- all options with an order code or a name that contains a specified substring
- all options in a specific group
- all state-based options, including dual
- all options in a specified state
- all options with a specific right-to-use (RTU) setting
- all usage-based options, including dual options
- all options with a current usage over the warning threshold
- all options with a current usage of zero
- all options with a current usage other than zero
- all options

The step-action procedure in this chapter provides instructions for requesting a SOC report.

Brief report

The brief report is the default report. It contains one line for each option, with the order code, name, RTU status, state, current usage, usage limit, units of usage and the date of the last change for the RTU setting or usage limit of that option. If there is an error in the status of an option, an

in-service trouble (ISTB) status indicator appears in the report beside the affected option entry.

The brief report also indicates whether each option is

- tracked (TRAK)
- pending (PEND)
- usage, with a current usage over the warning threshold (>THR)
- usage, with a current usage over the limit (>LIM)
- usage, with a current usage over the maximum SOC can record (>MAX)

Note: If more than one of THR, LIM and MAX apply to the option, only one will appear in the report. The order of priority from highest to lowest is MAX, LIM and THR.

Figure 7-1 shows an example of a brief report for all options in a PCL, and Figure 7-2 shows a brief report for one option.

Pack report

The pack report is a compressed version of the brief report for all options in a PCL. The pack report is periodically sent by the operating company to Nortel. For every state option, the pack report indicates the option's order code, RTU status, current state, and the date of its last RTU change. For every usage option, the pack report indicates the option's order code, current usage, usage limit, high water mark, and the date of the last limit change. For dual options, both state and usage information are provided. Pending and tracked options are flagged. Figure 7-3 is an example of a pack report.

Verbose report

The verbose report contains the one-line option descriptions in the brief report. The verbose report also contains the following:.

- dependency information for state and dual options
- feature usage counts for usage and dual options,
- the high water mark and threshold for usage and dual options
- options replaced by an option or options

Figures 7-4 and 7-5 contain examples of a verbose report.

Full report

In addition to the verbose report content, the full report contains the feature identifiers, feature names, feature states, and the last change dates for included features.

Report terminology

The following terms are used in the reports:

- GROUP is the 3- or 4-character functional group code.
- OPTION is the 8-character option order code.
- NAME is the 20-character name of the option (without the group code).
- RTU indicates the right-to-use setting, either Y (yes) or N (no).
- STATE indicates the state of the option, either IDLE, ON, ITO (idle to on) or OTI (on to idle).
- USAGE indicates the current usage of the option.
- LIMIT shows the usage limit of the option; an S follows a soft limit.
- UNITS indicates the unit of usage.
- LAST CHG for options is the date of the last RTU change or limit change.
- OPTIONS NEEDED lists the option order codes the option depends on. NONE indicates that the option has no dependencies. NO INFO means that the option is a pending option. SOC does not keep a record of dependencies for pending options.
- OPTIONS NOT PERMITTED lists the option order codes that cannot be in the on state when the option is in the on state. If the option can be in the on state at the same time as any other option, NONE is specified. NO INFO means that the option is a pending option.
- REPLACES OPTIONS lists the option order codes that the option replaces.
- THRESHOLD indicates the usage warning threshold.
- HIGHWATER indicates the usage high water mark.

Note: In the reports, dashes are used in fields that are not relevant to the option. For state options, for example, the usage, limit and units fields are filled with dashes.

Figures 7-1 to 7-3 contain examples of SOC reports.

Report examples

Figure 7-1
Example of a brief report for all options

```
CLLI:OTWANOX14B2    SOC OPTION STATUS SUMMARY          DATE:95/09/30
PCL NAME:NA006

GROUP:SOC
OPTION      NAME            RTU STATE  USAGE  LIMIT   UNITS  LAST_CHG
------      ----            --- -----  -----  -----   -----  --------
SOCOPT10    Option 10       N/A IDLE       –      –       –  95/09/26
SOCOPT11    Option 11       A/P   ON       –      –       –  95/09/26
SOCOPT12    Option 12         Y    –       0    100 UNIT_12  95/09/26
SOCOPT13    Option 13         N IDLE       –      –       –  95/09/26
SOCOPT14    Option 14       N/A    –       0      0 UNIT_15  95/09/26
SOCOPT15    Option 15         N IDLE       0      0 UNIT_15  95/09/26
SOCOPT16    Option 16         N IDLE       –      0 UNIT_16  95/09/26 TRAK
```

Figure 7-2
Example of a brief report for one option

```
GROUP:ABS
OPTION      NAME                RTU STATE  USAGE  LIMIT  UNITS  LAST_CHG
------      ----                --- -----  -----  -----  -----  --------
ABS00008    TOPS Comm Cred Card   Y  IDLE      –      –      –  94/07/06
```

Figure 7-3
Example of a pack report

```
SOC OPTION STATUS SUMMARY
OTWAONXBDS0
TOPS03.1
940406
CTX00128 N I 930818
CTX00130 Y O 930508
CTX00131 Y I 931024
CTX00140 102 200 143 930523
CTX00141 203 200S 203 930523
CTX00173 N I 930508
OSDA0011 Y O 2342340 MONITORED
2342340 940101
OSDA0012 Y – 940404 TRAK
USDA0013 Y – 960606 PEND
USDA0014 – 200 – 931010 TRAK
USDA0015 Y – – 1000 – 931212 TRAK
0AFC24B1021845645AD4
```

Figure 7-4
Example of a verbose report for a state option

```
GROUP:ABC
OPTION   NAME                   RTU  STATE  USAGE  LIMIT  UNITS  LAST_CHG
------   ----                   ---  -----  -----  -----  -----  --------
ABCOPT17 Option 17                Y   IDLE      0   1000  ZORKMID 96/08/14
           options needed             NONE
           options not permitted      NONE
           replaces options: ABCD0005, EFGH0006, TEST0007, XYZ0008
           threshold       75%        high water mark        0

           FEATURE   STATE   USAGE    UNITS
           -------   -----   -----    -----
           ABCFT170   IDLE   0        ZORKMID
             NAME:   ABC Sample Usage Feature 0 with ZORKMID
           ABCFT171   IDLE   0        UNIT_AB
             NAME:   ABC Sample Usage Feature 1 with ZORKMID
           ABCFT172   IDLE   0        UNIT_AB
             NAME:   ABC Sample Usage Feature 2 with ZORKMID
```

Figure 7-5
Example of a verbose report for a usage option

```
GROUP:SOC
OPTION    NAME          RTU   STATE  USAGE  LIMIT   UNITS   LAST_CHG
------    ----          ---   -----  -----  -----   -----   --------
SOCOPT12  Option 12       Y       – 1.0E06 2.7E06 UNIT_12   95/03/14
          threshold:    90   high water mark:   1.0E06
          limit:    275000
          usage:   1000000

          FEATURE   STATE   USAGE     UNITS
          -------   -----   -----     -----
          SOCFTR12      –   1.0E06    UNSPECIFIED
            NAME:  Forward Reporting Feature
```

Procedure for creating a SOC report

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress.  Soc not started.`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 21.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 21.

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete.

Go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 The response means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to be terminated.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 21.

9 You have started a SOC session. Your next step depends on whether you want a report about all options in your PCL or about specific option or options.

If you want a report about	Do
a specific option	step 10
a specific subset of options	step 11
all options	step 12

10 To request a report about a specific option, enter the SELECT command by typing

>SELECT OPTION option_code report_type

and pressing the Enter key.

where

option_code	is the option order code
report_type	is the type of report (BRIEF or VERBOSE) This parameter is optional. The default is BRIEF. If the VERBOSE parameter is used, feature usage counts for usage and dual options are shown in the report.

Example input:

>SELECT OPTION SOCOPT14 VERBOSE

Go to step 13.

11 To request a report about a specific subset of options, enter the SELECT command by typing

>SELECT select_type value report_type

and pressing the Enter key.

where

select_type	defines the criteria for selecting the option or set of options for display. The choices are OPTION, STATE, RTU, NAME, GROUP, or USAGE.
value	is the value that corresponds to the select_type parameter (see notes)
report_type	is the type of report (BRIEF or VERBOSE) This parameter is optional. The default is BRIEF. If the VERBOSE parameter is used, feature usage counts for usage and dual options are shown in the report.

Note 1: You can enter up to 8 characters if the select_type is OPTION. SOC will generate a report for every option with an order code containing the character string you enter.

Note 2: You can enter ON, IDLE, ERR, or ALL if the select_type is STATE. ALL selects all state options.

Note 3: You can enter either Y (yes) or N (no) if the select_type is RTU.

Note 4: You can enter up to 25 characters if the select_type is NAME. SOC will generate a report for every option with the character string you enter in its name.

Note 5: If the select_type is GROUP, a 3- or 4-character group code is entered.

Note 6: You can enter ALL, NONZERO, ZERO, or OVER_THRESHOLD if the select_type is USAGE. ALL selects all usage options, including dual. NONZERO selects options with usage values of greater than 0. ZERO selects options with a current usage of 0. OVER_THRESHOLD selects options whose current usage exceeds its warning threshold.

Example input:

>SELECT STATE ON

Go to step 13.

12 To request a report about all options, enter the SELECT command by typing

>SELECT ALL report_type

and pressing the Enter key.

where

report_type is the type of report (BRIEF, VERBOSE, or PACK) BRIEF is the default.

Example input:

>SELECT ALL VERBOSE

13 Your next step depends on the system's response to the SELECT command.

If the system response is	Do
`Illegal order code <order code>`	step 14
`Internal error accessing SOC database. Report not generated.`	step 15
`Memory allocation failure while trying to generate report. Report not generated.`	step 16
`No options in table; nothing to report`	step 17
`No options match the selection criteria`	step 18
`Packed report written to file <file> on device <device>`	step 19
`Target file exists. Replace?`	step 20

14 The string you entered is not a valid order code. Try the SELECT command with a correct order code or with a different selection criteria and then go to step 13.

If the problem persists, go to step 21.

15 SOC has experienced an internal failure. An incomplete report may be generated. Check to see if any SWER logs have been generated.

Go to step 21.

16 The memory required to generate the report could not be allocated. The DMS office may have insufficient memory. If so, wait until the office traffic levels are lower, try to generate the report again and then go to step 13.

If the problem persists, go to step 21.

17 There are no options in the table. A report is generated.

Go to step 22.

18 SOC could not find any options that match the selection criteria you requested. The report is not generated. To enter the SELECT command with a different selection criteria, return to step 11.

If the problem persists, go to step 21.

19 The report you requested with the SELECT ALL PACK command was successfully generated. The response indicates the file to which the report was written and the device that the file is on.

Go to step 22.

20 SOC found a file with the same name as the report file you requested with the SELECT ALL PACK command.

To create the new report and delete the existing one, enter YES in response to the prompt. If you do not want to replace the old file with a new one, enter NO. If you enter NO, the report is not generated.

Go to step 22.

21 For assistance, contact the personnel responsible for your next level of support.

22 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

23 You have completed this procedure.

Auditing the SOC database

You can request a software optionality control (SOC) database audit. The audit reports any inconsistencies in the SOC data structures. It also checks for any discrepancies between the state recorded for an option in the SOC database and the state for the option in the software.

The SOC system automatically performs this daily audit at the time specified in the SOC_AUDIT_SCHEDULE parameter in the SOCVAR table described in Chapter 9. The following step-action procedure provides instructions on how to request a SOC audit in addition to the regularly scheduled audit. SOC generates a SOC400 log when the audit is finished. For each error found during the audit, SOC generates a log in the range of SOC300 to SOC326. For conditions that are significant but are not errors, SOC generates a log in the range of SOC402 to SOC404.

Procedure for auditing the SOC database

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 13.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 13.

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete.

Go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 The response means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to be terminated.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 13.

9 To request an audit of the SOC database, enter the DBAUDIT command by typing

>DBAUDIT

and pressing the Enter key.

10 Your next step depends on the system response to the DBAUDIT command.

If the system response is	Do
`SOC audit completed. No errors found`	step 11
`<trouble details> SOC audit completed <n> errors found`	step 12

11 An audit was performed, and no inconsistencies in the SOC database were found.

Go to step 14.

12 Errors were discovered during the audit. For assistance, contact the personnel responsible for the next level of support.

13 For assistance starting a SOC session, contact the personnel responsible for the next level of support.

14 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

15 You have completed this procedure.

Defining SOC variables

The SOCVAR table allows the operating company to change some software optionality control (SOC) variables. This chapter describes the fields in the SOC table.

Note: The default values in the SOCVAR table are recommended by Nortel.

SOCVAR table

The following table contains the name of the fields in the SOCVAR table, the acceptable values for these fields and the default values.

Table 9-1
SOCVAR field descriptions

Field name	Value range	Default value
SOC_AUDIT_SCHEDULE	time of day	06:30
SOC_REPORT_DEVICE	vector up to 12 characters	SFDEV
SOC_RTU_FILE_DEVICE	vector up to 12 characters	ALL

SOC_AUDIT_SCHEDULE

The SOC_AUDIT_SCHEDULE field specifies the time of day when the audit begins. The default value starts the daily audit at 06:30.

SOC_REPORT_DEVICE

The SOC_REPORT_DEVICE field specifies the name of the device to which the SOC report generated by the audit is sent. SFDEV is the default.

SOC_RTU_DEVICE

The SOC_RTU_DEVICE field specifies the name of the device from which the key code file is read. ALL is the default and specifies that all devices listed in table PADNDEV be searched. Device SFDEV is also searched whether or not it is listed in table PADNDEV.

INode software optionality control option

In addition to the typical software optionality control (SOC) commands that are identified in this document, specific procedures must be performed to activate integrated node (INode) functionality. This chapter provides the required INode procedures.

STP integration

STP SOC on INode is included in SOC option STPE0300. To activate STP SOC on INode, the state of STPE0300 must be ON. Refer to "Changing the state of an option" in this document.

Activating STP SOC on INode

Before activating STP SOC on INode, perform the following steps:

- Ensure table C7TRKMEM contains fewer than 20 000 tuples.
- Set 8-bit SLS to OFF.
- Reduce CPU occupation to account for an increase from 4% to 20% CPU time reserved for CCS7 network management.

Deactivating STP SOC on INode

Before deactivating STP SOC on INode, perform the following steps:

- Ensure table C7GTT contains fewer than 25 000 tuples.
- Ensure no STP links are active.

Assigning right to use to an option

When an operating company purchases a state option, Nortel gives the company a password called a key code for the option. Once the key code is known, the ASSIGN RTU command can be used to grant the operating company permission to change the state of the option.

You can assign the right-to-use (RTU) state to a group of options by applying the ASSIGN KEYS command to a key code file. This file, supplied by Nortel, contains a list of order codes and key codes for the options. Chapter 3 describes how to assign the RTU state and usage limits to, or remove the RTU state from, a group of options in a key code file.

The ASSIGN RTU command can be used with state options only. The RTU state of usage and dual options is controlled by assigning a usage limit to the option. Chapter 5 describes how to assign a usage limit to an option.

The following step-action procedure describes how to assign the RTU state to a single option. Software optionality control generates a SOC504 log if the RTU application is successful and a SOC505 log if the RTU application is not successful.

Procedure for assigning the RTU state to an option

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 The response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 21.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 21.

4 The response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete and then go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 The response means that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate and then go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 21.

9 You have successfully started a SOC session. To set the right-to-use (RTU) to YES for an option or to create a pending option, enter the ASSIGN RTU command by typing

>ASSIGN RTU key_code TO order_code

and pressing the Enter key.

where

key_code is the granting key code (20 alphanumeric characters), supplied by Nortel

order_code is the order code (8 alphanumeric characters), assigned by Nortel

Example input:

>ASSIGN RTU KDLAS43895JFKDNWMKCM TO CTX00001

10 Your next step depends on the system response to the ASSIGN RTU command.

If the system response is	Do
`Done`	step 18
`Cannot set RTU for usage or dual option`	step 11
`Illegal order code <code>`	step 12
`Incorrect key code for option but the right-to-use was already set, so changes are allowed`	step 13
`Incorrect key code for option`	step 14
`Option <order code> is N/A (not applicable|A/P (always provided). Its <RTU|limit|state> cannot be changed.`	step 15
`Pending option <order code> created`	step 19
`Unknown order code <code> (or wrong key code for new option)`	step 20

11 The RTU for this option cannot be set because the option is a usage or dual option, not a state option. Check that you have entered the correct order code; if you have not, try the ASSIGN RTU command with the correct order code and then go to step 10.

If the problem persists, go to step 21.

12 The string you entered is not a valid order code. Try the ASSIGN RTU command with the correct order code and then go to step 10.

If the problem persists, go to step 21.

13 You have entered an incorrect key code for the option; the RTU, however, was already set to YES for the specified option.

Go to step 22.

14 The key code you entered is incorrect for the option. Ensure that you have entered the correct key code and order code. If you have not, try the ASSIGN RTU command with the correct key code and order code and then go to step 10.

If the problem persists, go to step 21.

15 Ensure that the order code for the option is correct.

If the order code is	Do
correct	step 16
incorrect	step 17

16 The option is designated as not applicable (N/A) or always provided (A/P). You cannot change the option's RTU state.

Go to step 22.

17 Try the ASSIGN RTU command with the correct order code and then go to step 10.

18 The ASSIGN RTU command was successful. Either the RTU for the option has been set to YES or a pending option has been created.

Go to step 22.

19 A pending option has been created and the RTU for that option has been set to YES.

Go to step 22.

20 If you are trying to create a pending option, this message indicates that the key code is not valid for the option. If you are trying to assign RTU to an existing option, this message indicates that SOC does not have a record of the specified order code.

Check that you have entered the correct order code; if you have not, try the ASSIGN RTU command with the correct order code and then go to step 10.

If the problem persists, go to step 21.

21 For assistance, contact the personnel responsible for your next level of support.

22 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

23 You have completed this procedure.

Removing right to use from an option

The ASSIGN RTU command allows operating company personnel to remove the right-to-use (RTU) state from a state option. The REMOVE RTU command also allows operating company personnel to remove the RTU state from a state option. Removing the RTU state from an option prevents subsequent state changes for that option.

The REMOVE RTU command is redundant. The ASSIGN RTU command should be used to remove the RTU state from an option.

An option that is controlled by software optionality control must be in the idle state before you can remove its RTU state. You can remove the RTU for a tracked option or a pending option at any time.

The ASSIGN RTU and REMOVE RTU commands applies to state options only. To achieve the same functionality for a usage or dual option, you assign a usage limit of zero, as described in Chapter 5.

The following step-action procedure explains how to remove the RTU from a state option. If the procedure is successful, a SOC504 log is generated. If the procedure is not successful, a SOC505 log is generated.

Procedure for removing the RTU state from an option

1 Access the SOC directory by typing

>SOC

and pressing the Enter key.

If the system response is	Do
the SOC prompt	step 9
`Couldn't allocate mailboxes...SOC not started`	step 2
`Couldn't allocate SOC command directory...SOC not started`	step 3
`SOC cannot be used while a dump is in progress. SOC not started`	step 4
`SOC is already running`	step 5
`User count exceeded; SOC in use by <user>`	step 6

2 This response indicates that SOC cannot allocate its mailboxes because the DMS office has a resource problem.

Go to step 20.

3 The response indicates that SOC cannot allocate the SOC directory because the DMS office has a resource problem.

Go to step 20.

4 This response indicates that SOC cannot start because the system is performing an image dump. Wait for the image dump to complete.

Go to step 1.

5 The response means that your CI session already has a SOC session running.

Go to step 9.

6 The response indicates that SOC is already running on the DMS switch. Only one session at a time can be active. The user ID of the user running the other session is shown in the response.

If another SOC session is	Do
running	step 7
not running	step 8

7 Wait for the other SOC session to terminate.

Go to step 1.

8 The usage counter for the SOC session should be reset.

Go to step 20.

9 You have successfully started a SOC session. To remove the RTU from an option, enter the ASSIGN RTU command by typing

>ASSIGN RTU key_code TO order_code

and pressing the Enter key.

where

key_code is the removal key code (20 alphanumeric characters) supplied by Nortel

order_code is the order code (8 alphanumeric characters) assigned by Nortel

Example input:

>ASSIGN RTU KDLAS43895JFKDNWMKCM TO CTX00001

10 Your next step depends on the system response to the ASSIGN RTU command.

If the system response is	Do
`Done`	step 19
`Cannot revoke RTU when state is not IDLE`	step 11
`Cannot set RTU for usage or dual option`	step 12
`Illegal order code <code>`	step 13
`Incorrect key code for option`	step 14
`Option <order code> is N/A (not applicable|A/P (always provided). Its <RTU|limit|state> cannot be changed.`	step 15
`Unknown order code <code>`	step 18

11 The option is in the ON state and, therefore, the RTU state for that option cannot be removed. Follow the procedure in Chapter 4, ”Changing the state of an option,” to change the state of the option to idle, and then go to step 10.

If the problem persists, go to step 20.

12 You have tried to remove the RTU for a usage or dual option. To remove the RTU for these types of options, you must set the usage limit to 0. Follow the procedure in Chapter 5 to set the usage limit to 0 and then return to this point.

Go to step 21.

13 The string you entered is not a valid order code. Try the ASSIGN RTU command with the correct order code and then go to step 10.

If the problem persists, go to step 20.

14 The key code you entered is incorrect. Check that you have entered the correct key code and order code. If you have not, try the ASSIGN RTU command with the correct key code and order code and then go to step 10.

If the problem persists, go to step 20.

15 Ensure that the order code for the option is correct.

If the order code is	Do
correct	step 16
incorrect	step 17

16 The option is designated as not applicable (N/A) or always provided (A/P). You cannot change the option's RTU state.

Go to step 21.

17 Try the ASSIGN RTU command with the correct order code and then go to step 10.

18 SOC does not have a record of the specified order code. Check that you have entered the correct order code; if you have not, try the ASSIGN RTU command with the correct order code and then go to step 10.

If the problem persists, go to step 20.

19 The ASSIGN RTU command was successful. The RTU state for the option has been removed.

Go to step 21.

20 For assistance, contact the personnel responsible for your next level of support.

21 Exit the SOC directory by typing

>QUIT

and pressing the Enter key.

22 You have completed this procedure.

List of terms

ASSIGN command
The ASSIGN command provides the operating company with the capability to enable the right-to-use for an option, to assign a usage limit to an option, to change the state of an option or to assign a warning threshold to an option.

brief report
The brief report contains one line of information for each option in the operating company's software load.

CI
Command interface

dual option
A combo option is usage-controlled and can also be set to on or idle.

DBAUDIT command
The DBAUDIT command provides the user the capability to tell the system to perform an audit of the SOC database. SOC does regular audits automatically; the audit requested by the DBAUDIT command provides the user with the information at the MAP terminal, in addition to the logs generated by the audit.

deactivation
When an option is deactivated, it is turned to the idle state. Before deactivating an option, SOC displays messages describing the impact of the deactivation and requests either confirmation or cancellation of the state change.

IDLE state
An option in the idle state is not operational.

idle-to-on state
Idle-to-on is a transitional state. If an error occurs during the state transition and the option can neither revert to the idle state nor change to the on state, then the option is in the idle-to-on state.

ITO
See idle-to-on state.

high water mark
The high water mark is the highest level of usage of the option since either the option was created or the high water mark for the option was reset.

key code
A key code is an alphanumeric password that Nortel gives to the operating company for every option that a customer is entitled to use. Every operation for every option in a DMS office requires a unique key code.

NORTEL_ID
The NORTEL_ID is the unique identifier Nortel assigns to every DMS office.

ON state
An option in the ON state is fully operational.

on-to-idle state
On-to-idle is a transitional state. If an error occurs during the state transition and the option can neither revert to the on state nor change to the idle state, then the option is in the on-to-idle state.

option
An option is any optional capability that can be purchased by an operating company in a PCL.

order code
An order code is the alphanumeric identifier Nortel assigns to an option.

OTI
See on-to-idle state.

pack report
The pack report is a compressed version of the brief report for all options. It is used to provide status about options to Nortel.

PADNDEV
Patch administration and downloading device (PADNDEV) is a table that specifies a list of devices that are used for reading and writing files.

PCL
See product computing module load.

pending option

A pending option is a placeholder for an option that will be downloaded at a later date.

product computing module load

A product computing module load is the computing module software load that is delivered to the customer.

right-to-use

Right-to-use (RTU) for an option must be granted to the operating company in order for the operating company to be able to change the state of the option with a password for the option supplied by Nortel.

RTU

See right-to-use.

SELECT command

The SELECT command enables the user to display information about or generate a report with information about SOC options.

SOC

See software optionality control.

SOC option

Optional capabilities are grouped into commercial units called SOC options. A SOC option can be ordered by the operating company and is managed by the SOC utility.

software application

A software application is the process by which new software is loaded into the switch.

software optionality control

Software optionality control (SOC) is the utility that provides the operating company with the capability to enable or disable SOC options. SOC is part of the DMS Evolution product delivery process.

state option

A state option is in on or idle state and the RTU for the option is set to yes or no.

tracked option

A tracked option is not controlled by SOC but is tracked by the SOC database. SOC can generate a complete record of the purchase status of all options in an operating company's load.

usage limits

A usage limit can be hard, soft, or monitored. A hard usage limit cannot be exceeded, whereas a soft usage limit can be exceeded. A log is generated when a hard or soft limit is reached. Monitored usage specifies the usage of the option is recorded but not limited by SOC.

usage option

SOC tracks and controls the use of a usage option. A usage option has a limit (hard, soft or monitored) and a current usage. The usage limit of the option determines the RTU; if the limit is zero, the RTU is no and if the limit is greater than zero, the RTU is yes.

verbose report

The verbose report contains several lines of information for each option in the operating company's software load.

warning threshold

The warning threshold of an option is that level of usage at which SOC generates a log to inform the operating company that the usage of a resource is nearing its limit. The warning threshold can be set at a percentage of the usage limit or to an absolute number, and is assigned to the option by the operating company.

DMS-100 Family

Software Optionality Control

User Manual

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