



Subsystem Reconfiguration Procedures

This appendix contains procedures for updating your system after it has been installed.

VCO Subsystem

Increasing the Number of Licensed Time Slots

Systems at V5.1.4 and Higher

For systems at V5.1.4, enter “summ4” at the License Configuration screen to set the timeslot license to its maximum value. For more details consult the V5.1.4 Release Notes or the System Administrator’s Guide. Both are available at http://www.cisco.com/univercd/cc/td/doc/product/tel_pswt/.



Note

If SPC-TONE is used in place of Tone Generator (DTG-2), confusing output in the License Configuration screen may appear. This confusing output, if it appears, will be explained later but will have no operational effect on system performance.

SPC-TONE, although selectable in V5.1.4 is not usable or supported in that version. SPC-TONE is fully supported in V5.2.0 and higher.

To learn more about SPC-TONE, refer to the V5.2.0 Release Notes available at http://www.cisco.com/univercd/cc/td/doc/product/tel_pswt/.

Systems at V5.1.3 and Lower



Note

In releases prior to Generic release V5.1.4, the License Configuration screen may display 4096 ports available instead of the true maximum value of 4088. See bug report CSCdr05012.

You can manually increase the number of timeslot licenses on a CPU when you have any of the following conditions:

- You are replacing a defective 16-MB CPU with a new 16-MB CPU and the number of ports allocated in the system is more than 1024 time slots.
- You are replacing an 8-MB CPU with a new 16-MB CPU, during a V4.x to V5.x upgrade, and the number of ports allocated in the system is more than 1024 time slots.
- You are not replacing a CPU, but you need to update the license in order for the system to permit you to add more resources.

How the System Notifies the User that it is Underlicensed

New CPUs are shipped from Cisco prelicensed for 1024 time slots. When you install the new CPU, the following message appears in the lower right corner of the admin console. This will be at the Administrator Main menu if your system is licensed for more than 1024 time slots:

```
Exceeding Time-Slot capacity By <X>
```

Where $X = |(\text{Number of Time-Slots Allocated}) - (\text{Number of Time-Slots Available})|$

No log file message will appear. Only the message indicated above will appear.



Note

The System Configuration menu / License Configuration screen uses the terms Number of Time-Slots Allocated and Number of Time-Slots Available. These are defined below.

The message on the screen appears because a license of 1024 time slots was entered into the NVRAM of the new CPU at the Cisco factory. Your system is detecting this and comparing the size of this license with the number of ports allocated in the system.



Note

1024 has been the timeslot license applied to all CPUs shipped by Cisco after February 1999; before that time CPUs were licensed for 880 time slots.



Note

The system will run and process calls even if the system is underlicensed. If your system is not processing calls, then underlicensing is not the cause. Licensing restricts only the process of adding new resources to the Card Maintenance screen.

If you delete resources from the Card Maintenance screen while the system is underlicensed, then you will not be able to re-add or add new resources to this screen until you obtain the proper license from Cisco TAC.

Furthermore, standard problem isolation scenarios would never require you to delete (remove) resources from the Card Maintenance screen. The risk to a system while it is underlicensed is virtually nonexistent.

See the “License Update Procedure” section on page C-4 for the procedure for obtaining a new license number from Cisco TAC.

Example

Your system is licensed for $3960 + 128 = 4088$ timeslots (the maximum number of licensed time slots available) and you swapped out the B-side CPU. You will see the configuration displayed in the System Configuration Menu/License Configuration screen (Figure C-1). The number and letter callouts are defined below.

Figure C-1 License Configuration Screen

LICENSE CONFIGURATION		
	A - Side	B - Side
(A) Number of Time-Slots Allocated	2392	2392
(B) Number of Time-Slots Available	1152 (1)	1152 (1)
(C) Number of Time-Slots Licensed	4096	1024 (2)
(D) Serial Number	08003e123456	08003e654321
(E) License Number	xyz999xyz999	aaa123aaa123
(F) Enter License #:	_____	_____
<p>#A0 Mon Mar 6, 2000 17:28 A-ACT B-SBY</p>		

51495



Note Serial numbers and license numbers shown are fictitious and are used only for illustrative purposes.

Number and Letter Callouts for Figure C-1:

(A): Number of Time-Slots Allocated (a display-only field): The number of time slots currently in use that fall within the licensed range of time slots. The licensed range of time slots consists of a maximum of 4088 time slots ($3960 + 128 = 4088$). As resources are added to the system via the Card Maintenance screen, the Number of Time-Slots Allocated number typically increases.

Note the following general time slot characteristics:

- All resources (service circuit engines, network spans, and virtual ports) use time slots within the system, but not all resources use time slots within the licensed range of time slots.
- The time slots that are outside the licensed range of time slots are considered “free” time slots. SPC-DTMF, SPC-CPA, SPC-MFR1 (displays as SPC-MFRC), and Virtual Ports use “free” time slots.
- All network spans use time slots within the licensed range of time slots.
- The DTG-2 cards uses 128 time slots within the licensed range of time slots once the system detects that at least one DTG-2 card is active.

(B): Number of Time-Slots Available (a display only field): The Number of Time-Slots Available equals the Number of Time-Slots Licensed [see (C)] plus 128 if at least one DTG-2 card is active in the system. (The active and standby DTG-2 card take up the same 128 time slots.) The maximum number of time slots available is $3960 + 128 = 4088$. If no DTG-2 card is active in the system, then the Number of Time-Slots Available equals the Number of Time-Slots Licensed.

(C): Number of Time-Slots Licensed (a display only field): The possible values for this field are 1024, 1560, 2096, 2632, 3168, 3704, and 3960 (3960 displays as 4096). This field changes as new license numbers [see (F)] are entered. Obtaining a new license number from Cisco TAC is explained in the “License Update Procedure” section on page C-4.



Note The value 3960 displaying as 4096 is a known display error scheduled to be corrected in a later release.

(D): Serial Number (a display only field): The Serial Number is the serial number of the CPU which is also the MAC-address of the CPU. The serial number is a 12-digit alphanumeric number whose first 6 digits are always 08003e. The serial number is also physically labeled on the CPU in the lower right corner of the component side of the CPU as ETHERNET ADDR 08003Exxxxxx, where xxxxxx is a 6-digit sequence number.

(E): License Number (a display only field): The License Number is the number that was entered into the Enter License #: field and which was issued by Cisco TAC. The license number is a 12-digit alphanumeric number. Obtaining a new license number from Cisco TAC is explained in the “License Update Procedure” section on page C-4.

(F): Enter License #: (a data entry field): Enter the license number that was issued to you by Cisco TAC. The license number is a 12-digit alphanumeric number. Obtaining a new license number from Cisco TAC is explained in the “License Update Procedure” section on page C-4.

(1): Number of Time-Slots Available = 1152. The Number of Time-Slots Licensed plus 128 (the 128 is to account for the active DTG-2 card). In this example a new CPU, prelicensed for only 1024 time slots, was installed on the B-side. ($1024 + 128 = 1152$).

(2): Number of Time-Slots Licensed = 1024. In this example, a new CPU, prelicensed for only 1024 time slots, was installed on the B-side.

License Update Procedure

The following procedures assume that the system has both A and B side control hardware, making it a redundant system.

If you have a nonredundant system, then it is assumed that the control hardware, i.e., the NBC3 and Combined Controller are installed in the A-side; slots 1, 3, and 4, of the system. You should be able to intuitively modify the following procedures to meet your needs.

Procedure #1 (the preferred procedure):

Follow these steps to apply the license(s):

Step 1 Make the state of the switch A-ACT/B-SBY.



Note If you cannot make the system A-ACT/B-SBY, then go to Procedure #2.

- Step 2** Log in to the A-side and go to the System Configuration menu / License Configuration screen. Select this screen from the Installation Utilities screen (see Figure C-2).
 - Step 3** From this A-side login, enter the new license of one of the CPUs and press **Enter**.
 - Step 4** If you must also license the second CPU in this system, then from this A-side login, enter the new license of the second CPU and press **Enter**.
 - Step 5** See Figure C-5, Figure C-6, and Figure C-7 for how the Administrator Main Menu, License Configuration, and Card Maintenance screens will appear after the new license is correctly applied.
-

Procedure #2:

Follow these steps to apply the license(s):

- Step 1** Make the state of the switch A-SBY/B-ACT.
 - Step 2** Log in to the B-side and go to the System Configuration menu / License Configuration screen.
 - Step 3** From this B-side log-in, enter the new license of one of the CPUs and press **Enter**.
 - Step 4** If you have to also license the second CPU in this system, then from this B-side log-in, enter the new license of the second CPU and press **Enter**.
 - Step 5** See Figure C-5, Figure C-6, and Figure C-7 showing the Administrator Main Menu, License Configuration, and Card Maintenance screens after the new license is correctly applied.
-

Procedure #3:

The only other way to install the new license number into the CPU is to boot from Generic floppy diskette #1, or any of the optional software diskettes: Ethernet and Telerouter (for V5.1(2) or lower) or the Optional Software diskette. This will bring you to the Installation Utilities screen (see Figure C-2).

- Step 1** Insert Generic floppy diskette #1, or any of the optional software diskettes into the side of the system that has the CPU license update. Press the appropriate button on the AAC card to reset that side. The following output appears on the local console screen:

```

Copyright Motorola Inc. 1988 - 1997 All Rights Reserved

MVME147 Monitor/Debugger Release 2.44 - 8/7/97
CPU running at 33 MHz

FPC passed test
MMU passed test

COLD Start

Onboard RAM start = $00000000, stop = $00FFFFFF

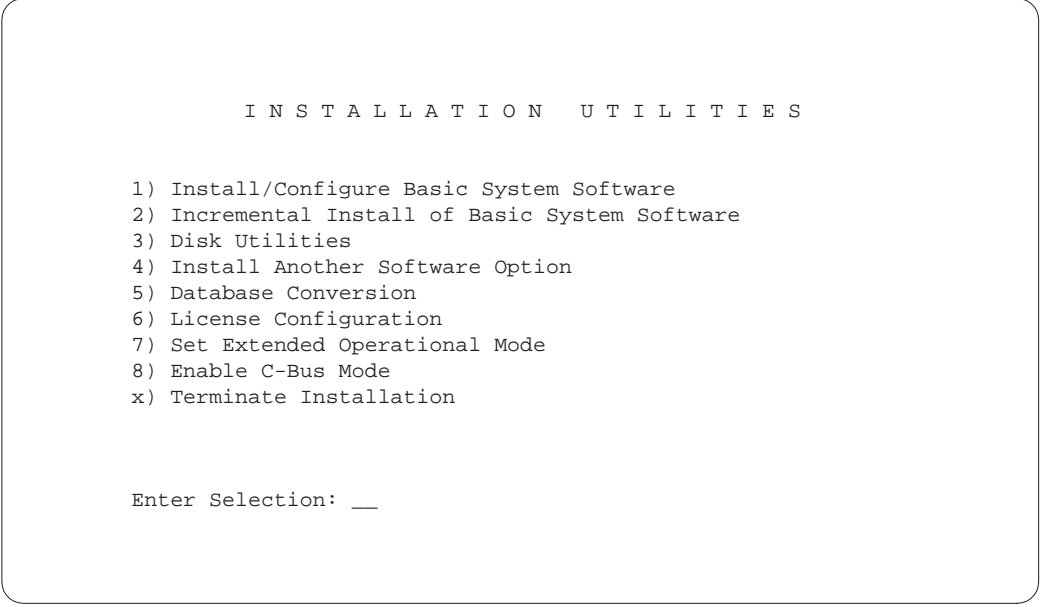
147-Bug> Searching for ROM Boot

147-Bug>G FFA0002C
Effective address: FFA0002C

SDS Initializing...
Hard disk mounted successfully
Hard disk dismounted successfully
Reading boot file from disk device A:/boot/boot.sds
Loading file A:/boot/install.exe
Hard disk mounted successfully
Hard disk dismounted successfully

```

Figure C-2 Installation Utilities Screen



```

                I N S T A L L A T I O N   U T I L I T I E S

1) Install/Configure Basic System Software
2) Incremental Install of Basic System Software
3) Disk Utilities
4) Install Another Software Option
5) Database Conversion
6) License Configuration
7) Set Extended Operational Mode
8) Enable C-Bus Mode
x) Terminate Installation

Enter Selection: __

```

51496



Note Line (4) appears as “Install Optional Software Package” for Generic V5.1(3) and higher.

Step 2 Type **6** and press **Return** to get to the License Configuration screen (see Figure C-3).

Figure C-3 License Configuration Screen, 1024 Time Slots

```
LICENSE CONFIGURATION

Number of Time-Slots Licensed          1024

Serial Number                          08003e654321
Time-Slot License Number              aaa123aaa123

Enter License #:                       _____
```

51497



Note Serial numbers and license numbers shown are fictitious and are used only for illustrative purposes.

Step 3 Type the new license number.

Example

If you entered a license number for 3960 time slots (the email from Cisco TAC would say that this is a license number for 4088 time slots), then you would see the output shown in Figure C-4.

Figure C-4 License Configuration Screen, 1936 Time Slots

LICENSE CONFIGURATION	
Number of Time-Slots Licensed	1936
Serial Number	08003e654321
Time-Slot License Number	xyz888xyz888
Enter License #:	_____

51498



Note Serial numbers and license numbers shown are fictitious and are used only for illustrative purposes.

There is a display bug in the Installation Utilities / License Configuration screen. When you enter a license number that equates to 2096, 2632, 3168, 3704, or 3960 time slots (the email from Cisco TAC would say that the license number for 3960 time slots is a license number for 4088 time slots), the “Number of Time-Slots Licensed” field always displays 1936. When you enter a license number that equates to 1024, or 1560 time slots, the “Number of Time-Slots Licensed” field displays correctly.

Step 4 To return to the Installation Utilities screen after entering the license number, press **Return**. Type **x** to terminate the Installation Utilities screen, then press **Return**. The following prompt appears:

```
Terminate Installation Utility (Y/N) =N?
```

Step 5 Type **Y** and press **Return**.

```
Remove Installation Diskette NOW!
Suspending Installation Process...
Rebooting.....
Reset System NOW!
```



Note The message Reset System NOW! may not appear. If it does, press the appropriate button on the ACC card.

Step 6 Remove the Installation Diskette. The following will display:

```
Copyright Motorola Inc. 1988 - 1997 All Rights Reserved

MVME147 Monitor/Debugger Release 2.44 - 8/7/97
CPU running at 33 MHz

FPC passed test
MMU passed test

COLD Start

Onboard RAM start = $00000000, stop = $00FFFFFF

147-Bug> Searching for ROM Boot

147-Bug>G FFA0002C
Effective address: FFA0002C

SDS Initializing...
Hard disk mounted successfully
Hard disk dismounted successfully

A: drive has no floppy or Unreadable/Unformatted Floppy
Trying C drive
Reading boot file from disk device C:/boot/boot.sds
Loading file C:/boot/globals.exe
Loading file C:/boot/syswd.exe
Loading file C:/boot/hostmgr.exe
Loading file C:/boot/redmgr.exe
Loading file C:/boot/netmgr.exe
Loading file C:/boot/permgr.exe
Loading file C:/boot/snmp.exe
SW version loaded - Ver.Rev FSR : 5.1 001
Hard disk mounted successfully
Hard disk dismounted successfully

Loading File < syscnfg.TBL > ...
Loading File < card.TBL > ...
Loading File < port.TBL > ...
Loading File < hostcnfg.TBL > ...
Loading File < resgroup.TBL > ...
Loading File < supvtmpl.TBL > ...
Loading File < iprule.TBL > ...
Loading File < oprule.TBL > ...
Loading File < isdnsvpv.TBL > ...
Loading File < isdnmsg.TBL > ...
Loading File < routesum.TBL > ...
Loading File < routetbl.TBL > ...
Loading File < exroute.TBL > ...
Loading File < nfacnfg.TBL > ...
Loading File < promptlb.TBL > ...
Loading File < subrate.TBL > ...
Loading File < motomap.TBL > ...
Loading File < license.TBL > ...
```

Step 7 The login screen appears. Log in.

License Update Procedure Output

Applying Procedure #1, #2, or #3 will produce the results shown in Figure C-5, Figure C-6, or Figure C-7. The results shown are for licensing a CPU to 3960 time slots on a system with 2392 time slots allocated.

Figure C-5 Administrator Main Menu—After License Application

```

A D M I N I S T R A T O R   M A I N   M E N U

Generic VER. REV FSR PUN: 5.1 001

A)  Data Base Administration Menu
B)  System Configuration Menu
C)  Maintenance Menu
D)  Diagnostics Menu

Enter Selection: ____

C-Bus Enabled

2392 Out Of 4096 Time-Slots Allocated

```

51501



Note

“2392 Out Of 4096 Time-Slots Allocated” should display as “2392 Time-Slots Allocated Out Of 4088 Time-slots Available” (3960 + 128 for the active DTG-2 card = 4088). This is a known display error scheduled for correction in a later release.

Figure C-6 License Configuration—A- and B-Side Allocations After License Application

LICENSE CONFIGURATION		
	A - Side	B - Side
Number of Time-Slots Allocated	2392	2392
Number of Time-Slots Available	4096 (1)	4096 (1)
Number of Time-Slots Licensed	4096 (2)	4096 (2)
Serial Number	08003e123456	08003e654321
License Number	xyz999xyz999	xyz888xyz888
Enter License #:	_____	_____
#A0 Mon Mar 6, 2000 18:04 A-ACT B-SBY		

51489



Note Serial numbers and license numbers shown are fictitious and are used only for illustrative purposes.

- (1) The correct number is 4088, the true maximum available for use.**
- (2) The correct number is 3960**

These are known display errors scheduled for correction in a later release.

Figure C-7 Card Maintenance—ICC-E1 Cards

```

                                C A R D   M A I N T E N A N C E

R L S      CARD TYPE              V.RV  S
-----
1 1 1-1    Network Bus            1.02  A
1 1 1-2    Tone Generator         1.25  A
1 1 2-1    Network Bus            1.02  S
1 1 2-2    Tone Generator         1.25  S
1 1 7-1-1  ICC-E1                 5.08  A
1 1 7-1-2  ICC-E1                 5.08  A
1 1 7-1-3  ICC-E1                 5.08  A
1 1 7-1-4  ICC-E1                 5.08  A
1 1 7-2-1  ICC-E1                 5.08  A
1 1 7-2-2  ICC-E1                 5.08  A
1 1 7-2-4  ICC-E1                 5.08  A

ADD, DELETE, CHANGE STATUS (A,D,C,P): _ _ _ _ _
AND PORT DEFINITION:                2392 Out Of 4088 Time-Slots Allocated
1- 64 _____
65-128 _____

#A0 Tues Mar 14, 2000 1:35 A-ACT B-SBY

```

51503



Note Card layouts shown are fictitious and are used only for illustrative purposes.

“2392 Out Of 4088 Time-Slots Allocated” should display as “2392 Time-Slots Allocated Out Of 4088 Time-slots Available” (3960 + 128 for the active DTG-2 card = 4088).

Obtaining a New License from Cisco TAC

To obtain a new license, send email to nh-tech_sup@cisco.com as follows:

- Step 1** Obtain the system serial number from the label on the rear of the chassis of the VCO/4K.
- Step 2** Obtain the system serial number from the License Configuration screen. Log in to the active side of the system (record exactly what you see).



Note If you are replacing a CPU, first replace the CPU before recording this information.

If you are not replacing a CPU, then simply record the information that you see.

Number of Time-Slots Allocated, A-side:

Number of Time-Slots Allocated, B-side:

Number of Time-Slots Available, A-side:

Number of Time-Slots Available, B-side:

Number of Time-Slots Licensed, A-side:

Number of Time-Slots Licensed, B-side:

Serial Number, A-side:

Serial Number, B-side:

License Number, A-side:

License Number, B-side:

Step 3 Obtain the following information from your engineers:

How many time slots does the system need to be licensed for?

Number of time slots to increase to:

Increase the A-side (Y/N)?

Increase the B-side (Y/N)?

Reason for the time slot license:

Swapped out defective CPUs (Y/N)?

Upgraded from V4.x to V5.x (Y/N)?

Need to add more resources to the system (Y/N)?

If you answered yes to “need to add more resources to the system”, then first contact your Cisco Systems sales representative and purchase the additional time slots. Obtain the Cisco purchase order number from the sales representative and include it in this email along with the sales person’s name, and email address.

Step 4 Obtain the following information from the Administrator Main Menu:

Generic VER.REV FSR PUN:

Time Slots Used by Each VCO/4K Resource

Table C-1 shows the number of time slots, within the licensed range of time slots or “licensed time slot pool,” each VCO/4K resource uses.

Table C-1 Time Slot Use

Hardware Name	Card Maintenance Screen Name	Licensed Time Slots Used
DTG-2	Tone Generator	128 ⁽¹⁾⁽⁶⁾
IPRC8	8 Port Prompt/Record	008
IPRC64	64 Port Prompt/Record	064
IPRC128	128 Port Prompt/Record	128
SSC	Subrate Switch Card	varies/ programmable ⁽²⁾
D+I	Drop and Insert Card	008
ICC	ICC-T1	024
ICC	ICC-E1	032

Table C-1 Time Slot Use (continued)

Hardware Name	Card Maintenance Screen Name	Licensed Time Slots Used
LTC-8	8-Line Test Card	008
ICC	ICC-T1 PRI/NI2	024
ICC	ICC-T1 PRI/5ESS	024
ICC	ICC-T1 PRI/4ESS	024
ICC	ICC-T1 PRI/NTI	024
ICC	ICC-T1 PRI/NTT	024
ICC	ICC-E1 PRI/NET5	032
ICC	ICC-E1 PRI/QSIG	032
ICC	ICC-E1 PRI/TS014	032
SPC	SPC-DTMF	none ⁽³⁾
SPC	SPC-CPA	none ⁽³⁾
SPC	SPC-MFR1	none ⁽³⁾⁽⁴⁾
SPC	SPC-MFCR2	024
SPC	SPC-OUTP	064
SPC	SPC-CONF	032
-	virtual ports	none ⁽³⁾⁽⁵⁾

¹⁾ Whether or not one or two DTG-2 cards are active, only 128 ports will be allocated by the system.

²⁾ Allocated by the system in increments of 8, depending how you first configure the Substrate Configuration screen. All increments allocated fall within the “licensed time slot pool”, not the “free time slot pool”.

³⁾ The resource indicated uses time slots from the “free time slot pool”, not the “licensed time-slot pool”.

⁴⁾ SPC-MFR1 is displayed to the user as SPC-MFRC.

⁵⁾ Virtual ports are an integral part of the system but are not displayed from the Card Maintenance screen nor can the user allocate them. Virtual ports can be viewed from the Diagnostic menu / Port Display screen.

⁶⁾ All resources listed below the DTG-2 card in this table, and which fall within the “licensed time slot pool”, can be added to the system provided that the total number of time slots added does not exceed 3960.

Table C-2 Summary of Time Slot Increments Available

Time Slot Increment Number	Time Slot Increment Increase	Number of Time Slots Licensed	Number of Time Slots Available ⁽¹⁾	Number of Time Slots Allocated ⁽²⁾
0	–	1024	1152	–
1	536	1560	1688	–
2	536	2096 ⁽³⁾	2224	–
3 ⁽⁶⁾	536	2632	2760	–
4 ⁽⁶⁾	536	3168	3296	–

Table C-2 Summary of Time Slot Increments Available (continued)

Time Slot Increment Number	Time Slot Increment Increase	Number of Time Slots Licensed	Number of Time Slots Available ⁽¹⁾	Number of Time Slots Allocated ⁽²⁾
5 ⁽⁶⁾	536	3704	3832	-
6 ⁽⁶⁾	256	3960 ⁽⁴⁾	4088 ⁽⁵⁾	-

⁽¹⁾The Number of Time-Slots Available equals the Number of Time-Slots Licensed plus 128 time slots. The 128 time slots are for the active DTG-2 (Tone Generator).

⁽²⁾The minimum value for The Number of Time-Slots Allocated is 128 if one DTG-2 card is active and no resources (other than SPC-DTMF, SPC-CPA, and SPC-MFR1 (displays as SPC=MFRC)) are added to the system by the user. The Number of Time-Slots Allocated increases from 128, up to a maximum value of 4088, as resources are added to system from the Card Maintenance screen.

⁽³⁾The Number of Time-Slots Licensed value of 2096 is for systems with C-bus enabled (4K-mode systems). For systems with C-bus not enabled (2K-mode systems), the value for this time slot Increment is 1808. For systems with C-bus not enabled (2K-mode systems), the maximum value for Number of Time-Slots Available is 1936 (= 1808 + 128).

⁽⁴⁾3960 displays as 4096 in the License Configuration screen.

⁽⁵⁾4088 displays as 4096 in the License Configuration screen.

⁽⁶⁾These time slot Increments are not available for systems with C-bus not enabled (2K-mode systems).

SS7 Subsystem

Reinstalling EBS Drivers

If ECPT modules are not seen as loaded on EBS software installation or no blank line is seen for ecpt devices on EBS startup, then the ECPT drivers were not installed properly.

SS7 signaling links will not align even though EBS and cktint configured properly and started.

There are two instances described here:

Case 1: ECPT drivers are not installed during EBS software installation

Case 2: ECPT drivers are not loaded during ebs_start or start-ss7.sh

Case 1

When a system is upgraded to new software, a script, install_ebs.sh, installs EBS software. This script replaces previous AccessManager modules with new modules. During the loading of new modules, you must see ECPT drivers loaded, i.e., you must see the following lines:

```
CCTC module is now installed.
Installing TRMOD module ...
TRMOD module is now installed.
Installing ECPT module ...
ECPT module is now installed.
Installation of AccessMANAGER modules is now complete.
```

Case 2

When executing `ebs_start` or `start-ss7.sh` scripts, EBS is started first and you must see a blank line for ECPT drivers loaded. See `ecpt 1` in the following example:

```
start-ss7.sh

This script will assist you in bringing up your Integrated
SS7 system in a controlled fashion.

Would you like to start the EBS stack [y/n]?y
Starting Signaling Point 0
Starting ebs_start...
Signalling Point Manager - Version 3.5.3
Copyright (c) 1991-1995, EBS
All Rights Reserved

Loading /dev/ecp0 - device does not exist
Loading /dev/ecp1 - device does not exist
Loading /dev/ecp2 - device does not exist
Loading /dev/ecp3 - device does not exist
Loading /dev/ecp4 - device does not exist
Loading /dev/ecp5 - device does not exist
Loading /dev/ecp6 - device does not exist
Loading /dev/ecp7 - device does not exist
Loading /dev/ecpt0 - device does not exist
*****
***** AccessALARM is in service *****
***** Console Output is DISABLED *****
*****
Loading /dev/ecpt1
Loading /dev/ecpt2 - device does not exist
Loading /dev/ecpt3 - device does not exist
Loading /dev/ecpt4 - device does not exist
Loading /dev/ecpt5 - device does not exist
Loading /dev/ecpt6 - device does not exist
Loading /dev/ecpt7 - device does not exist
AccessMANAGER Ready
Starting upmd...
```



Note In an 8-link SS7 system, you must see two blank lines for loaded drivers. Usually, `ecpt0` and `ecpt 1` represent 4-Link (SBUS ports) each.

Solution:

The following procedure describes how to reinstall ECPT drivers:

Step 1 Stop the SS7 stack completely and verify that no process is running. Type the following:

```
ebs_ps
```

Step 2 Type the following to change directories:

```
cd $EBSHOME/access/install
```

Step 3 Change user to SU (superuser).

Step 4 Type the following command to remove EBS drivers:

```
./rmEBSdrv
```


You will see all drivers and modules being removed one by one. Make sure everything is removed successfully. Focus on ECPT modules specifically.

For example:

```
# ./rmEBSdrv
You are about to remove the AccessMANAGER modules.
Do you wish to continue [y/n]? y
Unloading CCTC module ...
CCTC module is now unloaded.
Unloading ANTC module ...
ANTC module is now unloaded.
Unloading SCCP module ...
SCCP module is now unloaded.
Unloading SNM module ...
SNM module is now unloaded.
Unloading UPM module ...
UPM module is now unloaded.
Unloading TRMOD module ...
TRMOD module is now unloaded.
Unloading ECPT module ...
ECPT module is now unloaded.
Unloading SPM module ...
SPM module is now unloaded.
Removing CCTC module ...
CCTC module is now removed.
Removing ANTC module ...
ANTC module is now removed.
Removing SCCP module ...
SCCP module is now removed.
Removing SNM module ...
SNM module is now removed.
Removing UPM module ...
UPM module is now removed.
Removing ECPT module ...
ECPT module is now removed.
Removing SPM module ...
SPM module is now removed.
Removing TRMOD module ...
TRMOD module is now removed.
All AccessMANAGER modules are now removed.
#
```

- Step 5** Type **sync** a couple of times for files to synchronize the file system.
- Step 6** Reboot the Sparc with the **reboot** command while you are in **SU** (superuser) mode.
- Step 7** When the system is ready, log in as **cktint** and confirm that no process is running.
- Step 8** Type the following to change directories:

```
cd $EBSHOME/access/install
```
- Step 9** Change user to **SU** (superuser).
- Step 10** Type the following command to set up EBS drivers:

```
./setupEBSdrv
```

You will see all drivers and modules loading one by one. Make sure everything is loaded successfully without any error. Focus on ECPT.

```
# ./setupEBSdrv
You are about to install the AccessMANAGER modules.
Do you wish to continue [y/n]?
Installing SPM module ...
SPM module is now installed.
Installing UPM module ...
UPM module is now installed.
Installing SNM module ...
SNM module is now installed.
Installing SCCP module ...
SCCP module is now installed.
Installing ANTC module ...
ANTC module is now installed.
Installing CCTC module ...
CCTC module is now installed.
Installing TRMOD module ...
TRMOD module is now installed.
Installing ECPT module ...
ECPT module is now installed.
Installation of AccessMANAGER modules is now complete.
#
```

If you don't see the message "ECPT module is now installed" or you still find difficulty in loading of ecpt drivers on startup, follow Steps 1 to 5. Then, instead of rebooting in Step 6, type **halt** or **shutdown**.

Power down the SS7. (On a redundant platform, only the side that is being upgraded).

Step 11 After powering down, wait for 30 seconds and power up the side again.

Once the system is ready, follow Steps 7 to 10.

4-link to 8-link Upgrade Procedure

Use the following procedure to upgrade existing Sparc 5 CPU with 4-link SBUS to 8-link SBUS to support a total of eight SS7 signaling links:

-
- Step 1** Verify that the current /export/home/EBSkeyfile.dat is licensed for the support of eight SS7 links. (Or that it is a new EBS license diskette included with an upgrade package.)
 - Step 2** If the system is redundant, manually make the A-side active (via the Fallback/Selector/AB switch-box and VCO AAC) to start with an upgrade of the B-side (standby) first.
 - Step 3** Rename the existing EBSkeyfile.dat to (for example) EBSkeyfile.dat.old. This saves the existing file for possible later use or recovery.
 - Step 4** Ensure that you are using the correct diskette for the B-side license file.
Verify that the host ID on the diskette label is for the B-side Sparc. License files are different for A and B side Sparc systems.
 - Step 5** Copy the EBS license file, EBSkeyfile.dat (support for 8-links) from the diskette to the B-side /export/home directory.
The procedure for copying the files from diskette is given in the appropriate *VCO/4K Integrated SS7 System Supplement*.
 - Step 6** Stop the SS7 on the B-side and change the directory to \$EBSHOME/access/install.

- Step 7** Change user to SU (superuser).
- Step 8** Type the following command to remove EBS drivers:
- ```
./rmEBSdrv
```
- Step 9** Once drivers are removed, type:
- ```
halt
```
- Step 10** If you are using a separate SS7 VME shelf with your VCO/4K system, power off the B-side SS7.
- Step 11** Add the additional 4-link SBUS next to the existing SBUS on the Sparc CPU card.
Remove the serial/parallel card and put the new 4-link SBUS card in its place.
- Step 12** Remove the power cable from the fallback switch.
Since fallback/selector/AB switch-box was manually selected to make the A-side active, all the links should stay aligned.
- Step 13** Remove one of the existing slave cards.
- Step 14** Set the dip switches on each new slave card to match the dip-switch settings of the card you removed.
- Step 15** Exchange the existing slave cards with the new slave cards.
- Step 16** Power up the fallback switch.
- Step 17** Ensure that the system boots properly after the B-side SS7 is powered up.
- Step 18** Log in as cktint.
- Step 19** Change user to SU (superuser):
- ```
cd $EBSHOME/access/install
```
- Step 20** Install the new drivers with the command:
- ```
./setupEBSdrv
```
- Step 21** Modify the mtpmml file to include ports 5,6,7, and 8 for the additional 4-links.
- Step 22** Recompile to update the database.
Any change in mml files requires re-creating or modifying the database files. Refer to the *Integrated SS7 Supplement* for help on mtp mml file configuration and re-creating or modifying the database.
- Step 23** Start the SS7 stack and verify that the operation is normal.
- Step 24** Initiate a switchover (manually select the B-side to be active) and ensure that the links are aligned and call processing is resumed.
- Step 25** Upgrade the A-side.
Repeat the same procedure used for B-side except that you do not need to add or modify hardware (cards etc.).



Note For a nonredundant system, you need to power off the SS7 for hardware (SBUS) upgrade, therefore you can power off the fallback as well at the same time. The traffic/calls will drop because with a nonredundant system, powering off the SS7 will stop all traffic. This limitation for a nonredundant system must be clearly understood prior to the upgrade. The customer needs to provide a maintenance window for upgrade.

Recovering from Loss of Root Shell

All SS7 systems display a “#” prompt when you have logged in as root or have changed to superuser (su) with the root password. When you log in as cktint, the SS7 system displays a “%” prompt.

Occasionally (particularly during a new install or an upgrade) both the root and cktint logins have the “%” as prompt. As a result, users actually log in as root.

Thinking that they were logged in as cktint, users have deleted system files that have affected operations of the system.

It looks as if root has been defined or has been modified as for UNIX C-shell (csh) instead of standard shell (sh) /etc/passwd file.

Solution:

Step 1 Change to superuser. Type **su** and enter **abc123** as the password.

```
vi /etc/passwd
```

Step 2 The first line in the file might be like one below:

```
root:x:0:1:Super-User:/:/bin/csh
```

Step 3 If that is what you find, edit the file and correct it as follows:

```
root:x:0:1:Super-User:/:/sbin/sh
```

Step 4 Save the file.

The change will set the root prompt to “#.”

Partitioning Hard Drives

Use this information to partition 1-GB (MSM-1000), 2-GB (MSM-2000), 4-GB (MSM-4000), and 9-GB (MSM-4000 Replacement) hard drives. Use this when reinstalling Solaris 2.6 and/or troubleshooting problems involving writing entries to SS7 log files.

During troubleshooting, this information can be verified by typing **df -k** and then pressing **Return**.

1-Gigabyte Drives:

Partitioning information for 1-Gigabyte drives is in Table C-3.

Table C-3 %df -k Output for 1-Gigabyte Drives

Slice	Partition (Mount)	Size (MB)
0	/	28
1	–	–
2	swap	85
3	/usr/openwin	260

Table C-3 %df -k Output for 1-Gigabyte Drives (continued)

Slice	Partition (Mount)	Size (MB)
4	/var	55
5	/opt	65
6	/usr	260
7	/export/home	256

2-Gigabyte Drives:

Partitioning information for 2-Gigabyte drives is in Table C-4.

Table C-4 %df -k Output for 2-Gigabyte Drives

File System	Size (MB)	Mount
/dev/dsk/cot3d0s0	24923	/
/dev/dsk/cot3d0s6	203415	/usr
.proc	0	/proc
fd	0	/dev/fd
/dev/dsk/cot3d0s4	480586	/var
/dev/dsk/cot3d0s7	871413	/export/home
/dev/dsk/cot3d0s5	166007	/opt
/dev/dsk/cot3d03	228707	/usr/openwin
swap	107104	/tmp

4-Gigabyte Drives:

Partitioning information for 4-Gigabyte drives is in Table C-5.

Table C-5 %df -k Output for 4-Gigabyte Drives

File System	Size (MB)	Mount
/dev/dsk/cot3d0s0	30859	/
/dev/dsk/cot3d0s3	480799	/usr
.proc	0	/proc
fd	0	/dev/fd
/dev/dsk/cot3d0s4	480799	/var
/dev/dsk/cot3d0s7	2430349	/export/home
/dev/dsk/cot3d0s5	480799	/opt
/dev/dsk/cot3d06	268897	/usr/openwin
swap	107868	/tmp

9-Gigabyte Drives (Replacements for 4-Gigabyte Drives):

Partitioning information for 9-Gigabyte drives is in Table C-6.

Table C-6 %df -k Output for 9-Gigabyte Drives

File System	Size (MB)	Mount
/dev/dsk/cot3d0s0	385007	/
/dev/dsk/cot3d0s6	481263	/usr
.proc	0	/proc
fd	0	/dev/fd
/dev/dsk/cot3d0s4	481263	/var
/dev/dsk/cot3d0s7	6494301	/export/home
/dev/dsk/cot3d0s5	481263	/opt
/dev/dsk/cot3d03	288751	/usr/openwin
swap	77204	/tmp

Dip Switch Settings for Master and Slave Cards

The following are the dip switch settings for Master and Slave Cards used for SS7 signaling links in Fallback/Selector/AB switch Selector Shelf Cards.

Slave Card

- REV h - 4 closed, the rest open
- REV g - 4 closed, the rest open
- REV e - 4 closed, the rest open
- REV f - 1 open, the rest closed

Master Card

- REV g - 6 closed, the rest open
- REV e - all closed
- REV f - all closed