



# Cisco VCO/4K SS7 ISUP, ITU V5.2, Release Notes

---

## October 2000

These release notes describe new features and caveats in ITU SS7 ISUP system software release 5.2 for use with the Cisco VCO/4K switch and SS7 subsystem ITU software. Use these release notes in conjunction with the *Cisco VCO/4K SS7 Subsystem, ITU V5.2, Manual*.

## Contents

These release notes contain the following sections:

- System Requirements, page 2
- New and Changed Information, page 3
- Installation Notes, page 5
- Limitations and Restrictions, page 7
- Important Notes, page 9
- Caveats, page 13
- Checksums, page 17
- Related Documentation, page 17
- Obtaining Documentation, page 18
- Obtaining Technical Assistance, page 18



# System Requirements

This section provides a list of system requirements for running the SS7 subsystem ITU software. These requirements are categorized by hardware, firmware, and software. Contact Cisco Systems TAC (Technical Assistance Center) for any site-specific information.

## Hardware Requirements

In addition to the SS7 subsystem software, ITU Version 5.2 requires the following hardware:

- One of the following systems:
  - VCO/80
  - VCO/20 with an SS7 VME shelf
  - VCO/4K with an SS7 VME shelf
- A SPARC CPU5V card
- 32 MB RAM (2K Mode) or 64 MB RAM (4K Mode and/or Multi-SP Mode) available on the system

## Firmware Requirements

There are no special firmware requirements for ITU V5.2. However, the firmware in the VCO must have the appropriate revision level required by the system software. For information, refer to the *Cisco VCO/4K System Software Version 5.x Release Notes*.

## Software Requirements

ITU Version 5.2 requires the following software:

- VCO/4K System Software V5.x or higher
- Solaris Release V2.6
- AccessManager V3.5.5

New SS7 subsystems have Solaris V2.6 and AccessManager V3.5.5 installed at the factory.

# New and Changed Information

## New Features in SS7 ISUP, ITU V5.2

The following are enhancements in the Cisco SS7 subsystem software, ITU V5.2.

### Four New CktInt.cfg Feature Flags

There are four new feature flags available in the CktInt.cfg file:

- **FEATURE\_FLAG14**—Enables Advice of Charge (AOC) functionality.




---

**Note** NOTE: Variant must be set to “Generic” in ISUP Level Provisioning.

---

- **FEATURE\_FLAG15**—When the load sharing mode is set to BROADCAST, allows cktint to broadcast a \$C0 05 relenquish control command acknowledgement from the VCO to all connected hosts.
- **FEATURE\_FLAG16**—Generates \$D3/\$D9 reports for maintenance messages like Circuit Group Blocking Acknowledgement (CGBA) or Blocking Acknowledgement (BLA) from the network.
- **FEATURE\_FLAG17**—Informs the host that an outgoing call is being cleared for dual seizure conditions. An \$EA report with cause value 0x7E is sent to the host from cktint for a Release (REL) during dual seizure conditions.

See the “Cktint Configuration File: CktInt.cfg” section in the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual* for details on configuring the CktInt.cfg file.

### Hardware State of Circuit Displayed

The “s” command in the **isup\_console** program has been changed to include the hardware state of a circuit. Both “Circuit State” and “Hardware State” can now have transient states.

The **isup\_console** program is located in the `~/sys/CktIntAnEnv ($XNV)` directory. For detailed information on the `isup_console`, see the “Managing Circuits and Circuit Groups (`isup_console`)” section in the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual*.

### New States and Originator Codes Added to Host Reports

New hardware-related states have been added to the \$B0 01 report. Likewise, new hardware-related originator codes have been added to the \$D3 and \$D9 reports. For detailed information on the new states and originator codes, see the “Circuit Interworking Commands and Reports” section(s) in the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual*.

## Three New Return Codes Added to SS7 \$49 Command

Three new Network Status Bytes have been added to the list of possible NSBs returned by the SS7 Network Message Generation (\$49) Command.

- NSBxD4—Circuit in transient state. When a circuit is in maintenance transient state, no messages are allowed on that circuit.




---

**Note** This return code has been added for hardware-related or maintenance-related failures.

---

- NSBxD5—Invalid SLR (Segmentation Local Reference). Indicates the host application sent charging information segmented into two or more \$49 commands and there was a mismatch in the outgoing SLR between the segments. Thus, the host command(s) were rejected by cktint.
- NSBxD6—Invalid host cktint SI (Segment Indicator). Indicates the host application sent charging information segmented into two or more \$49 commands and there was a mismatch in the outgoing SI between the segments. Thus, the host command(s) were rejected by cktint.




---

**Note** These return codes were added for the Advice of Charge (AOC) feature.

---

## Advice of Charge (AOC) Support

Ckint now supports the Advice of Charge (AOC) feature that allows a host AOC application to exchange charge-related information with AOC applications in other exchanges through Charging Tariff (CRGT), Charging Acknowledgement (CRGA), and Add On Charging (AOCRG) messages. These messages enable the exchanges belonging to different networks involved in the path of the call to understand the charging related information and use it for subscriber billing or AOC purposes.

To use the AOC feature in cktint:

- Feature Flag 14 must be enabled in the **CktInt.cfg** file.
- Variant must be set to “Generic” in ISUP Level Provisioning.
- If the exchange is a transit exchange for AOC, the following line must be added in the **CktInt.cfg** file.

-AOCTRANSIT

Otherwise, the exchange will be considered an originating or terminating exchange for AOC.

- The \$49 Command parameter code must be specified as APP (Application Transport Parameter—0x78). This code will also be returned in \$EA reports.

The AOC feature messages (CRGT/CRGA/AOCRG) require additional API definitions in the SS7 Network Message Generation (\$49) Command and SS7 Network Message Reception (\$EA) Report. For detailed information on these API definitions, see the “Advice of Charge (AOC) API Definition” section in the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual*.

## Debug Flag Added to CktInt.cfg File

One new debug flag is available in the **CktInt.cfg** file:

- **DEBUG41**—Prints detailed information in the log file concerning Advice of Charge (AOC) messages.

See the “Cktint Configuration File: CktInt.cfg” section in the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual* for details on configuring the **CktInt.cfg** file.

## Standards Supported by SS7 ISUP, ITU V5.2

This release supports the ITU standards listed in Table 1.

**Table 1** ITU Standards Supported by V5.2

SS7 Layer	Standard
MTP-2	Q.701-Q.703, 1992
MTP-3	Q.704-Q.707, 1992
ISUP	Q.761-Q.764, 1992



**Note**

*The country variants of SS7 ISUP, ITU V5.2, may not support all specifications for the standards listed in Table 1. In some cases, additional messages are required. The differences for each supported country are described in Appendix F of the Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual.*

## Installation Notes

### Default ISUP Office Information Changed

The default value of the CRGOFF bit in the ISUP office information has changed in ITU Version 5.1(2) and higher. This may affect your current configuration files when you upgrade. Formerly, the bit default was 0 (OFF). Now, the bit default is 1 (ON). Please add the **MODIFY-ISUPOFFINFO** line to your ISUP configuration files if you need this value set to off.

## Redundancy Configuration Changes for Upgrades

In redundant systems running ITU Version 5.1(2) and higher, you must make new modifications to your **AccessRd.cfg** file as follows:

- 
- Step 1** Log in as **root** to the SS7 subsystem side A, **<hostname>a**.
- Step 2** Enter the following command and press **Return**:
- ```
chmod 644 $EBSHOME/access/config/AccessRd.cfg
```
- Step 3** Use the vi editor to open the file **\$EBSHOME/access/config/AccessRd.cfg**.
- Check the following lines. The lines should read:  

```
MONITOR_OPTION    OFF
CTS_CONFIGURATION  INVERTED
HOST-A <SS7 subsystem side A hostname>
(i.e., HOST-A tsup6ss7a)
HOST-B <SS7 subsystem side B hostname>
(i.e., HOST-B tsup6ss7b)
```
  - If the lines do not match, modify them accordingly.
  - Save the changes and close the file.
- Step 4** Log on as **root** to the SS7 subsystem side B, **<hostname>b**, and repeat Step 2 through Step 3.
- Step 5** Check to make sure the SS7 Integrated Software version matches that on side A. Enter the following commands and press **Return** after each:
- ```
%cd $XNV
%version cktint
```
- Step 6** To bring the SS7 subsystem into operation, go to *Section 5* of the *Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual* and start the SS7 stack and Circuit Interworking software.
-

# Limitations and Restrictions

## Known Design Constraints

The following are design constraints which have been identified in SS7 subsystem ITU software. Cisco Systems currently has no plans to address the following known design constraints.

### **CSCdr68667: Cktint Does Not Handle Dual Seizure Properly**

When cktint releases a call for dual seizure conditions, the REL sent to the host gives no indication that it was sent because of dual seizure.

#### **Workaround**

Enabling Feature Flag 17 in the CktInt.cfg file will cause an \$EA report with cause value 0x7E to be sent to the host from cktint for a Release (REL) during dual seizure conditions.

### **CSCsf63489 (U611070001): CktInt Loses Info. When No Host Connected**

CktInt does not maintain a socket connection dedicated to the VCO. If no host is connected, circuit state change information from the system is lost.

### **CSCsf73966 (U705050007): No Switchover When SS7 Is Stopped On Active Side**

The system does not switch over automatically when one of the following conditions occur:

- If the Active CktInt and EBS stacks are stopped
- If CktInt hangs or dies
- If any EBS stack process dies and the MONITOR\_OPTION is OFF (needs to be off to fix the problem where the Ethernet cable is detached and the system will flip flop sides).

#### **Workaround**

Set the All Host Link Failure Action, on the SDS System Host Configuration Screen, to Conditional Switchover. When the Conditional Switching option is selected, a major alarm is generated if all host links fail and a system switchover is initiated if the Standby controller is on-line (file sync. completed) and has active host links.

## CSCsf74160 (U707160004): Associated Ports Are Lost After Switchover

CktInt associates ports as specified in the SS7 \$49 Command and the association is maintained until call tear down. If the controlling port is a VCO port, and the associated port is an SS7 port, the two ports are associated until one or the other is released by the host. When one of the ports is released, CktInt automatically releases the other.

However, if the system switches over while the call is stable, CktInt, on what is now the Active side, has no knowledge of port association established prior to switchover. This is because the CktInt on side A does not communicate with CktInt on side B and vice versa. If the host attempts to release the call by its port association, the release will fail.

If the system switches over a second time, and the call is still stable, the CktInt module that established the port association is now on the Active side, and host can release the call by its port association.

### Workaround

Do not use the port association option in host applications.

## CSCsf85148 (U809300002): MTP\_PAUSE and MTP\_RESUME

When all the links are down, sometimes cktint does not receive MTP\_PAUSE messages from EBS. When this happens, the circuit state stays active.

To help prevent this situation, set your Level 2 timer T0 to 160 msec by completing the following steps:

- 
- Step 1** Log in as **root** to side A of the SS7 subsystem, **<hostname>a**.
  - Step 2** Enter the following command and press **Return**:
 

```
mml 0
MODIFY-L2TIMER:TIMER=0,VALUE=160;
```
  - Step 3** Confirm proper settings by entering the following line and pressing **Return**:
 

```
DISPLAY-L2TIMER:TIMER=0;
```
  - Step 4** Log in as **root** to side B of the SS7 subsystem, **<hostname>b**, and repeat Step 2 and Step 3.
- 

### Workaround

If the circuit state gets stuck on the active side, bring your SS7 subsystem down and back up again.



# Important Notes

This section describes the special considerations you should be aware of while using SS7 ISUP software, ITU V5.2. This section provides explanations for the following areas:

- Commands and reports
- Debug flags
- EBS configuration
- Host considerations
- Redundancy
- System configuration

## Commands and Reports

### CktInt Requires \$DA And \$DB Reports

Do not suppress the \$DA and \$DB Reports in your SS7 application. These reports are required by CktInt for non-SS7 to SS7 calls and SS7 to non-SS7 calls because of the disconnect control byte. Cktint must see an on-hook.

## Debug Flags

Turning on the debug flags may negatively impact performance.



**Note**

---

Make sure all debug flags are turned off for production systems.

---

## EBS Configuration

### Routing Alarm Messages to the Console

To route alarm messages to the system console, complete the following steps:

- 
- Step 1** Start the MML utility by entering the following command and pressing **Return**:
- ```
mml 0
```
- Step 2** At the system prompt, enter the following command and press **Return**:
- ```
MODIFY-ALARM-CONFIG:DISPLAY=ON;
```
- Step 3** Exit the MML utility by entering the following command and pressing **Return**:
- ```
EXIT;
```
-

## Configuration for a Combined Linkset with Two A-Links

In order for link inhibit/uninhibit to work properly in a combined linkset with two A-links, you must set up alternate routes in the **mtp mml** file, as shown in lines 6 and 7 below.

```

MODIFY-SP:NAME=HOME,SPC=3-8-3,NI=NATIONAL,TYPE=SEP;
ADD-LSET:LSET=LSET1,DPC=1-1-1,ACTIVE=1,LOADED=1,TYPE=ALINK,BR=56000;
ADD-LSET:LSET=LSET2,DPC=1-1-2,ACTIVE=1,LOADED=1,TYPE=ALINK,BR=56000;
ADD-LINK:LINK= LINK-0,LSET=LSET1,SLC=0,PORT=1,TYPE=DTE,PRIORITY=0;
ADD-LINK:LINK=LINK-0,LSET=LSET2,SLC=0,PORT=2,TYPE=DTE,PRIORITY=0;
ADD-ROUTE:RTSET=LSET1STP,LSET=LSET2,PRIORITY=1;
ADD-ROUTE:RTSET=LSET2STP,LSET=LSET1,PRIORITY=1;
ADD-CMBLSET:CMBLSET=CLSET12,LSET1=LSET1,LSET2=LSET2;
ADD-RTSET:RTSET=RSET12,DPC=2-2-2,ROUTE1=CLSET12;
MODIFY-LSET:LSET=LSET1,ADMINSTATE=ACTIVE;
MODIFY-LSET:LSET=LSET2,ADMINSTATE=ACTIVE;
EXIT;;

```

## Host Considerations

### Multiple Hosts Affect Call Handling

Additional TCP connections affect VCO call handling capacity. Optimal performance can be achieved with four or fewer simultaneously active TCP connections.

## Redundancy

### Host Connected to Both Sides

A host must be connected to both the active and standby sides of the SS7 system for reliable redundancy operation.

### No Switchover When Ethernet Fails

If Ethernet fails, the system does not switch over.

### Workaround

Add a routine to your host application that can detect when the SS7 subsystem is unreachable and initiates a switchover.

## ASCII Terminals On Redundant Systems

If you turn the SS7 console off, or power to the terminal is lost, the SPARC5V CPU may abort and return to the boot prompt.

It is possible to connect a single ASCII terminal to both side A and side B via an electronic A/B selector switch. However, the selector must be capable of providing surgeless, spikeless change-overs. If the selector switch does not have this feature, the SPARC5V CPU may abort and return to the boot prompt when a change-over occurs.

## Calls During Switchover

Only stable (answered) calls are preserved by the system during a redundancy switchover.

## Loss of Network or SS7 Selector Switch Links

The loss of network links does not cause a switchover. Also, the loss of SS7 selector switch links does not cause a switchover. If you are going to perform maintenance on any of the links, you must first switch the system over to the standby side.

## SDS and VCO/80 Do Not Boot Without SPARC CPU Installed

An SDS or VCO/80 system configured for SS7 does not boot if one of the SPARC CPUs is removed from the Control Subrack. The NBC does not download, the NBC's LEDs stay illuminated, and the SDS/VCO system freezes.

## Time Between Consecutive Switchovers

Depending on the number of SS7 circuits in your configuration, the SS7 system needs 10 to 30 seconds between two consecutive switchovers to avoid a mismatch in redundancy states of the VCO, cktint, and EBS.

## System Configuration

### GRPID and TRNKGRPID Numbering Per DPC

For each distant end DPC, if your Circuit Group IDs (GRPID) are numbered consecutively (i.e. 1, 2, 3, 4...), Cisco Systems recommends you also number your Trunk Group IDs (TRNKGRPID) consecutively (i.e. 50, 51, 52, 53...).

## Choosing No Name Service

During system configuration, if you set the Name Service screen to “NONE” and press the **F2** key to continue, the sys-config program will generate an error message and gets into a loop.

### Workaround


When running the system sys-config, the system expects any name service to be defined. When you set the Name Service screen option to “NONE,” the system still tries to look for any service type and gets into a loop. To run with no name service, you need to create two empty files, as described below, and then rerun the sys-config program from the beginning.

- 
- Step 1** From the Name Server screen, mark the “NONE” field and press **F2** to continue.
- Step 2** An error message containing a path and file name will be generated. Write down the path and file name.
- Step 3** If using a UNIX/Solaris terminal, press **Stop** and then **a**. This will get the “OK” prompt.  
If using a WYSE terminal, press **Cntrl** and then **Pause/Break** or **F5**. Pressing **Alt** and then **Pause/Break** or **F5** may also work. This will get the “OK” prompt.
- Step 4** At the “OK” prompt, enter the following command and press **Return**:
- ```
boot -s
```
- This will bring up the system in single user mode. The following message appears:
- ```
press cntrl-D or enter root password
```
- Step 5** At the password prompt, enter the following root password and press **Return**:
- ```
abc123
```
- Step 6** Change the directory (**cd**) to **/etc** and create the files **nsswitch.conf** and **nsswitch.files**, or the file names you wrote down in Step 2 if they differ.  
Basically, you are creating any files that the system was complaining about in the original error message.  
To create the files with vi editor, enter the following command(s) and press **Return**:
- ```
vi /etc/nsswitch.conf
vi /etc/nsswitch.files
```
- Step 7** Press the **Esc** key. Then, type **:wq** and press **Return**.
- Step 8** Verify that the files now exist under directory **/etc**.
- Step 9** Change the directory (**cd**) to **/usr/sbin**.
- Step 10** Type **sys-unconfig** and press **Return** to un-configure the system and revert to a blank system.
- Step 11** Type **reboot** and press **Return** to bring the system back in configuration mode (sys-config).
- Step 12** Continue with the regular sys-config procedure. This time, when you set the Name Service option to “NONE,” the system will allow you to configure the rest of the fields without any problem.
-

# Caveats

This section contains open and resolved software caveats for this release of the SS7 ISUP, ITU V5.2 software. Caveats describe unexpected behavior or defects in the SS7 subsystem software or related hardware.

Complete the following steps to access detailed information on resolved and open caveats:

- 
- Step 1** Open an Internet browser application.
- Step 2** Go to <http://www.cisco.com>
- Step 3** Click on the site menu's Login hypertext.  
The Username and Password Required dialog box is displayed.
- Step 4** Enter your username and password.
-  **Note** If you do not have a valid username and password contact your Cisco Systems representative or send e-mail to [cco-team](mailto:cco-team).
- 
- Step 5** Click the OK button.  
A Cisco Systems Web page is displayed.
- Step 6** Click on the Technical Assistance Center hypertext, which is located beneath the Service & Support section.
- Step 7** Click on the Tools hypertext.
- Step 8** Click on the Software Bug Toolkit hypertext.
- Step 9** Click on Search for Bug by ID Number hypertext.  
The Search for Bug by ID Number tool is displayed.
- Step 10** Use the Search for Bug by ID Number search tool to find detailed information on caveats for the VCO/4K-related product.
-

## Open Caveats - SS7 ISUP, ITU V 5.2

Cisco Systems, Inc. has identified and evaluated functional constraints in ITU V5.2 system software. This section provides explanations and, where applicable, workarounds for possible unexpected behavior by V5.2 system software.

### CSCds47045: Incorrect \$D3 Reports After Switchover

On the first switchover after cktint is started on the standby side, the \$D3 reports from the newly activated side show all ports/circuits OOS (change = 11 instead of 13). Isup\_console, however, shows the circuits ACTIVE. This mismatch does not affect call flow.

After the next switchover, the \$D3 reports are correct and consistent with isup\_console on both sides.

### CSCsf74269 (U708200008): Warmboot With Autostart Takes 20 Minutes

If autostart is configured and the system is warm booted, it will take at least 20 minutes for the SS7 software to start. This will ensure that the VCO is entirely operational before the SS7 software is started.



#### Note

Do not change this timer value unless you are instructed to do so by Cisco Systems Technical Support.

#### Workaround

You may disable the autostart feature. If disabled, the SS7 software must be manually started. To disable autostart, complete the following steps:

- 
- Step 1** Log in to the SS7 subsystem as **root**.
  - Step 2** Enter the following command and press **Return**:  

```
rm /etc/rc3.d/S85ss7
```
  - Step 3** Reboot the Sparc and autostart will be inactive.
-

## CSCsf84706 (U803110006): Synchronization Failure

If EBS and cktint are brought down and back up on the standby side, sometimes the “tli” process does not sync up with the tli process on the active side and the following messages are repeatedly displayed:

```
srv_connect:: An event requires attention
```

```
Enabling connect timer ....
```

This impacts the redundancy operation of the system.

### Workaround

Bring down the tli processes on both sides. Then, bring both tli processes back up.

To bring down the tli processes:

- 
- Step 1** Log in as **root** to the Standby side of the SS7 subsystem.
  - Step 2** Type **px** and press **Return** to verify which active processes are running.
  - Step 3** Find the tli process I.D. number.
  - Step 4** Enter the following command and press **Return**:
 

```
kill -9 <process I.D. #>
```
  - Step 5** Log in as **root** to the Active side of the SS7 subsystem, then repeat Step 1 through Step 4.
- 

To bring both tli processes back up:

- 
- Step 1** Log in as **root** to the Active side of the SS7 subsystem.
  - Step 2** Enter the following command and press **Return**:
 

```
tli &
```
  - Step 3** Log in as **root** to the Standby side of the SS7 subsystem, then repeat Step 1 through Step 2.
-

## Resolved Caveats - SS7 ISUP, ITU V 5.2

Table 2 list the caveats issued against the SS7 subsystem software that have been resolved in system software version ITU V5.2.

**Table 2** Resolved Caveats for Release 5.2

| DDTs Issue | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSCdr08537 | <p>When an IAM is received from the network and the load sharing mode is set to BROADCAST, CktInt sends a \$C0 05 command to the VCO to relinquish control. Cktint did not report the acknowledgement from the VCO to the host. Feature Flag 15 has been added to the CktInt.cfg file to allow the acknowledgement of the \$C0 05 command to be broadcast to all the connected hosts.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CSCds36288 | <p>Cktint did not distinguish between hardware and maintenance CGB/CGU messages.</p> <p>The following enhancements have been made to deal with this issue:</p> <ul style="list-style-type: none"> <li>• The “s” command in the <b>isup_console</b> program has been changed to include the hardware state of a circuit. Both “Circuit State” and “Hardware State” can now have transient states.</li> <li>• New states have been added to the SS7 \$B0 01 Report. (See the “SS7 Circuit Status (\$B0 01) Report” section(s) in the <i>Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual</i> for specific new states.)</li> <li>• New originator codes have been added to the SS7 \$D3 Report. (See the “SS7 System Port Status (\$D3) Report” section(s) in the <i>Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual</i> for specific new codes.)</li> <li>• New originator codes have been added to the SS7 \$D9 Report. (See the “SS7 Circuit Group State (\$D9) Report” section(s) in the <i>Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual</i> for specific new codes.)</li> <li>• A new return code (NSB) has been added to the SS7 \$49 Command. (See the “SS7 Network Message Generation (\$49) Command” section(s) in the <i>Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual</i> for details on NSB 0xD4.)</li> <li>• Feature Flag 16 has been added to the CktInt.cfg file. This flag generates \$D3/\$D9 reports for acknowledgement messages like Circuit Group Blocking Acknowledgement (CGBA) or Blocking Acknowledgement (BLA) from the network. (See the “Cktint Configuration File: CktInt.cfg” section in the <i>Cisco VC0/4K SS7 Subsystem, ITU V5.2, Manual</i> for details on configuring the CktInt.cfg file.)</li> </ul> |



# Checksums

Table 3 lists valid software checksums and file sizes for the ITU V5.2 software.

**Table 3** *Cktint Version: ITU ISUP Version 5.2 FSR00*

| Filename          | Checksum<br>/usr/bin/sum | Size<br>ls -l |
|-------------------|--------------------------|---------------|
| cktint.cpio.Z     | 2078 5655                | 2895310       |
| install_cktint.sh | 14016 12                 | 5655          |



**Note**

To get the version of cktint, run the following command in \$XNV:  
% version cktint

Table 4 lists valid software checksums and file sizes for the AccessManager Version 3.5.5 software running on Solaris V2.6.

**Table 4** *EBS Version: 3.5.5*

| Filename       | Checksum<br>/usr/bin/sum | Size<br>ls -l |
|----------------|--------------------------|---------------|
| ebs.cpio.Z     | 1815 14441               | 7393435       |
| install_ebs.sh | 15890 7                  | 3523          |



**Note**

To get the version of EBS, run the following command in \$EBSHOME/access:  
% more version.dat

## Related Documentation

The following documents contain information that may be useful to SS7 subsystem software, ITU V5.2 users.

- *Cisco VCO/4K SS7 Subsystem, ITU V5.2, Manual*
- *Cisco VCO/4K System Software Version 5.x Release Notes*
- *Cisco VCO/4K Standard Programming Reference*
- *Cisco VCO/4K Extended Programming Reference*

# Obtaining Documentation

## World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

## Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

## Ordering Documentation

Registered CCO users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered CCO users can order documentation through a local account representative by calling Cisco's corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

# Obtaining Technical Assistance

Cisco provides Cisco Connection Online (CCO) as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed docs, or by sending mail to Cisco.

## Cisco Connection Online

Cisco continues to revolutionize how business is done on the Internet. Cisco Connection Online is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

CCO's broad range of features and services helps customers and partners to streamline business processes and improve productivity. Through CCO, you will find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online support services, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on CCO to obtain additional personalized information and services. Registered users may order products, check on the status of an order and view benefits specific to their relationships with Cisco.

You can access CCO in the following ways:

- WWW: [www.cisco.com](http://www.cisco.com)
- Telnet: [cco.cisco.com](http://cco.cisco.com)
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
  - From North America, call 408 526-8070
  - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to [cco-team@cisco.com](mailto:cco-team@cisco.com).

## Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use [www.cisco.com/techsupport](http://www.cisco.com/techsupport).

To contact by e-mail, use one of the following:

| Language         | E-mail Address                                                   |
|------------------|------------------------------------------------------------------|
| English          | <a href="mailto:tac@cisco.com">tac@cisco.com</a>                 |
| Hanzi (Chinese)  | <a href="mailto:chinese-tac@cisco.com">chinese-tac@cisco.com</a> |
| Kanji (Japanese) | <a href="mailto:japan-tac@cisco.com">japan-tac@cisco.com</a>     |
| Hangul (Korean)  | <a href="mailto:korea-tac@cisco.com">korea-tac@cisco.com</a>     |
| Spanish          | <a href="mailto:tac@cisco.com">tac@cisco.com</a>                 |
| Thai             | <a href="mailto:thai-tac@cisco.com">thai-tac@cisco.com</a>       |

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:  
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

## Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

You can e-mail your comments to [bug-doc@cisco.com](mailto:bug-doc@cisco.com).

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.  
Document Resource Connection  
170 West Tasman Drive  
San Jose, CA 95134-9883

We appreciate and value your comments.

This document is to be used in conjunction with the documents listed in the "Related Documentation" section.

Access Registrar, AccessPath, Are You Ready, ATM Director, Browse with Me, CCDA, CCDE, CCDP, CCIE, CCNA, CCNP, CCSI, CD-PAC, *CiscoLink*, the Cisco NetWorks logo, Cisco Powered Network logo, Cisco Systems Networking Academy, Fast Step, FireRunner, Follow Me Browsing, FormShare, GigaStack, IGX, Intelligence in the Optical Core, Internet Quotient, IP/VC, iQ Breakthrough, iQ Expertise, iQ FastTrack, iQ Logo, iQ Readiness Scorecard, Kernel Proxy, MGX, Natural Network Viewer, Network Registrar, the Networkers logo, *Packet*, PIX, Point and Click Internetworking, Policy Builder, RateMUX, ReyMaster, ReyView, ScriptShare, Secure Script, Shop with Me, SlideCast, SMARTnet, SVX, TrafficDirector, TransPath, VlanDirector, Voice LAN, Wavelength Router, WebViewer, Workgroup Director, and Workgroup Stack are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn, Empowering the Internet Generation, are service marks of Cisco Systems, Inc.; and Aironet, ASIST, BPX, Catalyst, Cisco, the Cisco Certified Internetwork Expert Logo, Cisco IOS, the Cisco IOS logo, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Collision Free, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastLink, FastPAD, IOS, IP/TV, IPX, LightStream, LightSwitch, MICA, NetRanger, Post-Routing, Pre-Routing, Registrar, StrataView Plus, Stratm, SwitchProbe, TeleRouter, are registered trademarks of Cisco Systems, Inc. or its affiliates in the U.S. and certain other countries.

All other brands, names, or trademarks mentioned in this document/website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0008R)

Copyright © 2000, Cisco Systems, Inc.  
All rights reserved.