# Cisco VCO/4K System Software Version 5.1(3) Release Notes

**May 2000**

These release notes describe new features and caveats in system software release 5.1(3) for the Cisco VCO/4K switch. Use these release notes in conjunction with the *Cisco VCO/4K Software Installation Guide* and the *Cisco VCO/4K System Administrator's Guide*.

## Contents

These release notes contain the following sections:




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# New and Changed Information

The following features are new or have changed for Cisco VCO/4K system software, hardware, or firmware.



## Foreign Exchange Office/Foreign Exchange Station

The Foreign Exchange Office/Foreign Exchange Station (FXO/FXS) feature has been added to the VCO/4K system software version 5.1(3) release. FXO/FXS provides local telephone service to subscribers from a central office which is located outside the subscriber's area.

The FXO/FXS feature consists of four protocols, which are implemented on the VCO/4K's Interface Controller Card (ICC):

- Foreign Exchange Office End Loop Start (FXOLS)
- Foreign Exchange Office End Ground Start (FXOGS)
- Foreign Exchange Station End Loop Start (FXSLS)
- Foreign Exchange Station End Ground Start (FXSGS)

The subscriber is attached to a device, such as a channel bank, configured with FXS and the local central office is attached to a channel bank configured with FXO. The four T1-specific protocols operate as loop start or ground start signaling. Communication between the subscriber and central office is either ground start to ground start, or loop start to loop start. For example, ground start signaling configurations can be either of the following:

- FXOGS to FXSGS
- FXSGS to FXOGS

**Note** Either side can receive a call or initiate (transmit) a call.

Loop start signaling configurations are similar:

- FXOLS to FXSLS
- FXSLS to FXOLS

**Note** FXSLS configurations are not supported at this time.

Each protocol may be selected from the ICC Programmable Trunk Configuration screen's SIG. TYPE field. Refer to Figure 1 for an example of a SIG. TYPE field selection of the FXSLS value.

*Figure 1 ICC Programmable Trunk Configuration Screen*

```
                    ICC PROGRAMMABLE TRUNK CONFIGURATION

SPAN LOCATION:   R,L,S 1 1 18-1-1       STATUS:     Active
CARD TYPE:       ICC T1                 SPAN TYPE:  SF        CODE: AMI
TXGAIN: Obd      TXCLCK: SCLK           SLIP: 255   ALM: SYS  LENG: 0-133
RXGAIN: Obd      RFCLCK: LOOP           OOF:  17

          TRUNK                  GROUP      SIG.   INPULSE
PORT      NAME       GROUP       NAME       TYPE    RULE      COS       LAW
----    --------     -----     ---------     ----   -------   ----       ---
 1                     __       ________     FXSGS    4         2         Mu
 2                     __       ________     Clear    0         2         Mu
 3                     __       ________     Clear    0         2         Mu
 4                     __       ________     Clear    0         2         Mu
 5                     __       ________     Clear    0         2         Mu
 6                     __       ________     Clear    0         2         Mu
 7                     __       ________     Clear    0         2         Mu
 8                     __       ________     Clear    0         2         Mu
```

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# Optional Software Product Diskette Consolidation

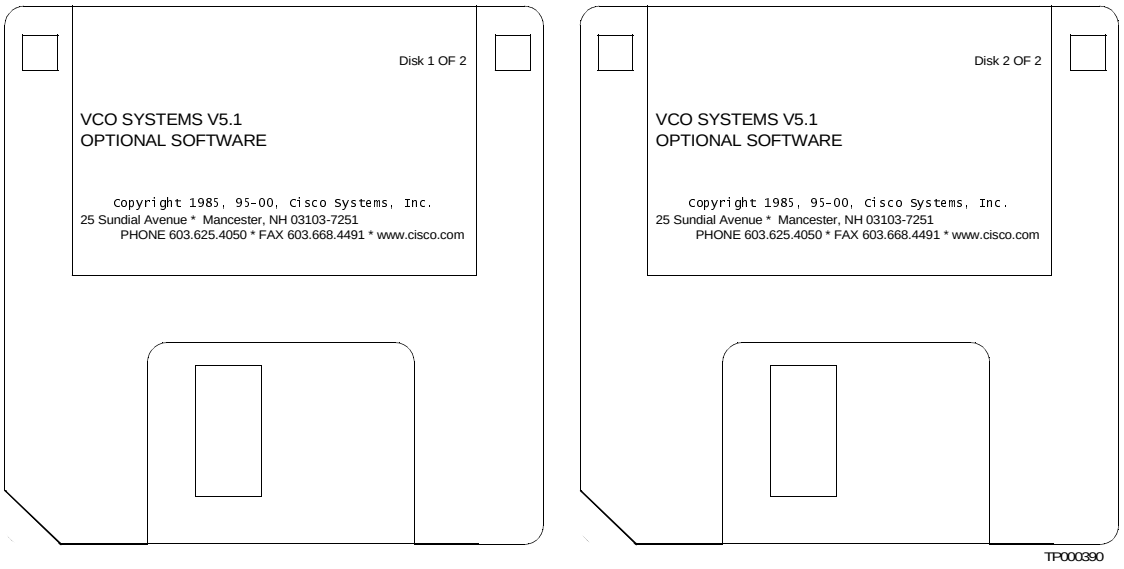
The protocols and license files associated with the following nine optional software products are consolidated onto two Optional Software diskettes (see Figure 2) with the VCO/4K system software version 5.1(3) release:

- Ethernet
- Telerouter
- ISDN Primary Rate Interface (PRI)
- ISDN Non-facility Associated Signaling (NFAS)
- National ISDN-2 (NI-2)
- Nippon Telegraph and Telephone Primary Rate Interface (NTTPRI)
- European Telecommunications Standard, EURO (NET5)
- NT Digital Access Signaling System No. 2 for E1-PRI cards (NTDASS2)
- Digital Private Network Signaling System for E1-PRI cards (DPNSS)

**Note** Users must contact Cisco Systems in order to purchase licenses for all optional software products used.

**Note** DPNSS and NTDASS2 are not supported on the Interface Controller Card (ICC).

*Figure 2 V5.1(3) Optional Software Product Diskettes*



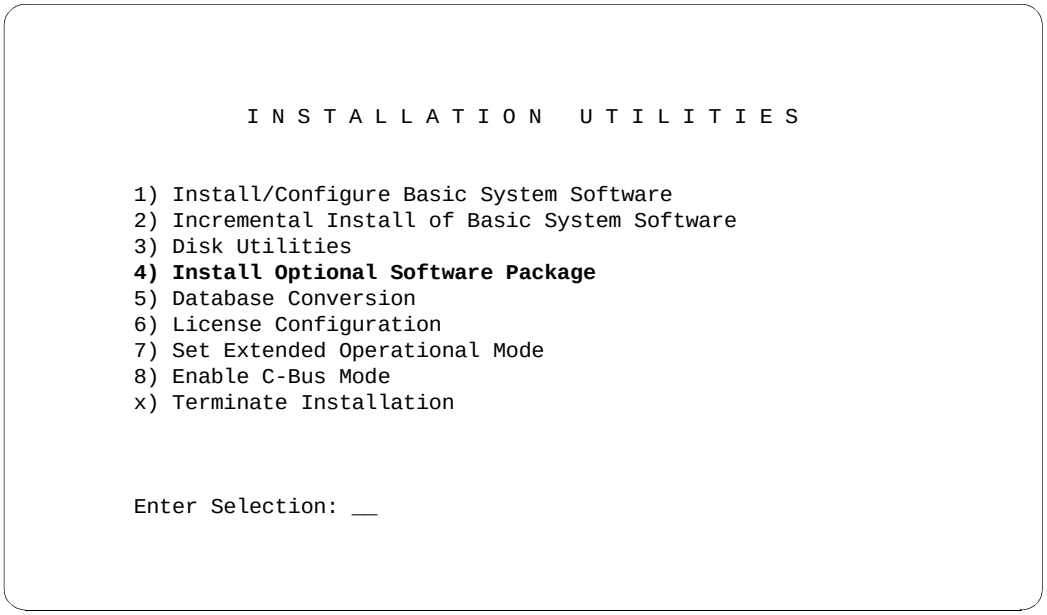

## Interface Modifications

The following system administration screens have been removed from system software version 5.1(3):

- Ethernet Installation Utilities
- Ethernet Configuration

Install the optional software products with the Installation Utilities menu, option 4. (See Figure 3.) All options are enabled as part of the installation.

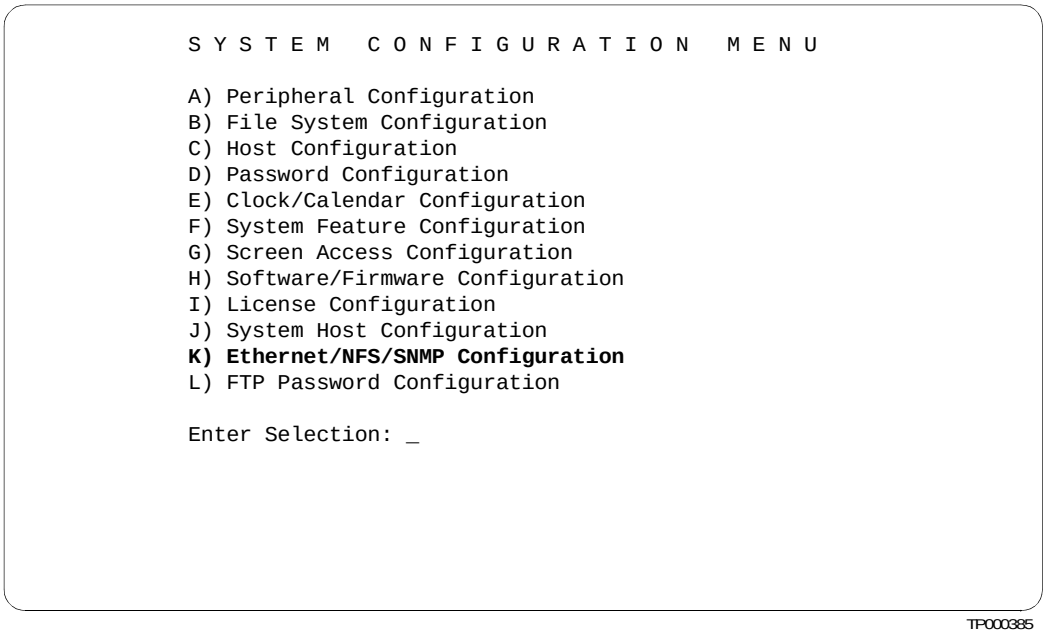
***Figure 3 Installation Utilities Menu***




Optional software product diskette consolidation affects two other system administration screens.

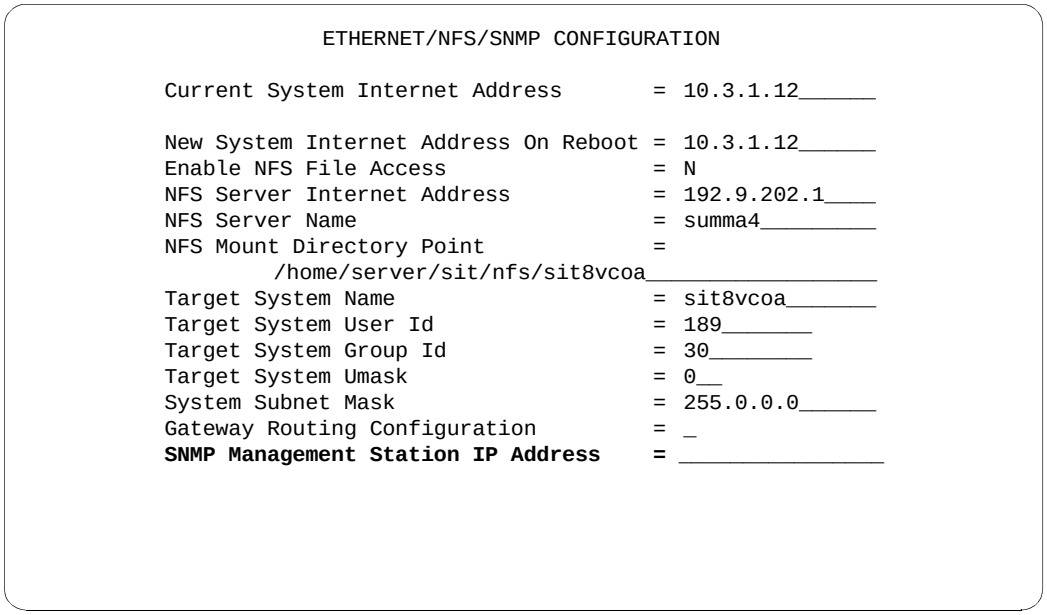
The System Configuration Menu screen is modified with this software release. (See Figure 4.) Option K of the System Configuration Menu screen allows users to access the Ethernet/NFS/SNMP Configuration screen. (See Figure 5.)

***Figure 4 System Configuration Menu Screen***




Ethernet installation parameters are configured with the Ethernet/NFS/SNMP Configuration screen. Refer to the *VCO/4K Ethernet Supplement* for configuration instructions.

*Figure 5 Ethernet/NFS/SNMP Configuration Screen*




The Ethernet/NFS/SNMP Configuration screen is slightly modified and includes the new field: SNMP Management Station IP Address. Use this field to enter an IP address of the SNMP station. IP addresses can be changed as needed without rebooting with the use of this field. The new IP address is saved to memory and to NVRAM. Refer to the *VCO/4K Ethernet Supplement* for further configuration instructions.

## Optional Software Product Diskette Consolidation Restrictions and Limitations

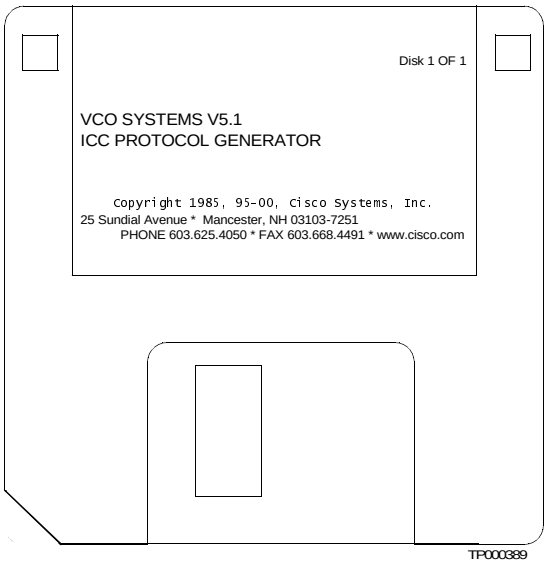
There are no restrictions or limitations with the reduced number of optional product diskettes and their installation and enabling procedures.

# Interface Controller Card Universal Protocol Generator Update Tool

The Interface Controller Card (ICC) Universal Protocol Generator (UPG) Update Tool has been added to VCO/4K system software version 5.1(3). Two versions of the ICC UPG Update Tool are provided on a diskette (see Figure 6):

- upgedsol.exe—for SUN Solar is workstation users
- upgedwin.exe—for Microsoft Windows (2000, NT, 98, and 95) PC users

*Figure 6 ICC Protocol Generator Diskette*




The tool allows users to modify the default .upg files in order to create custom ICC protocol data files for E&M and CAS/R2 protocols. Two versions of the default files are provided on diskette number 6 of the generic software diskettes:

- iccem.upg—for the E&M, T1 protocol
- icccasr2.upg—for the CAS/R2, E1 protocol

**Note** Default files do not need to be customized for the system software to function properly. The ability to customize the default .upg files is provided for flexibility in signaling configurations.

Users must modify a system default .upg file to create a custom .upg file. Customize the iccem.upg file when using the E&M, T1 protocol. Customize the icccasr2.upg file when using the CAS/R2, E1 protocol. A maximum of four customized .upg files may be created; the ability to customize .upg files is provided for configuring flexibility in two signaling areas:

- ABCD signaling bit pattern
- Minimum and maximum detection times of signals (wink, seize, flash, etc.)

## Installation Instructions

The ICC UPG Update Tool is a command line executable software program. The following sections describe the installation of the ICC UPG Update Tool and the creation of customized .upg files using either a SUN Solaris workstation or a PC workstation.

### Install and Start the ICC UPG Update Tool with a SUN Solaris Workstation

Complete the following steps to install the ICC UPG Update Tool on a SUN Solaris workstation and create a customized .upg data file. For Microsoft Windows PC users, refer to "Install and Start the ICC UPG Update Tool with a Microsoft Windows PC Workstation," page 9, for tool installation instructions.

**Step 1** Create a directory named UPGTOOL on your SUN workstation.

**Step 2** Copy the upgedsol.exe executable file—the ICC UPG Update Tool—from the ICC PROTOCOL GENERATOR diskette to the UPGTOOL directory.

**Step 3** Copy the appropriate default .upg file from diskette 6 to the UPGTOOL directory according to the following rules:

- Copy the iccem.upg file if using the E&M, T1 protocol.
- Copy the icccasr2.upg file if using the CAS/R2, E1 protocol.

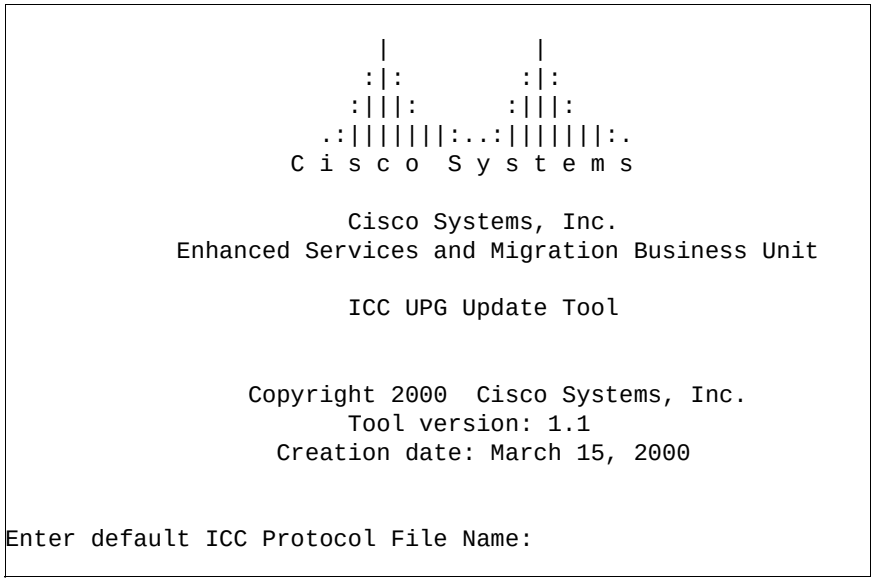
**Step 4** Start a new shell.

**Step 5** Change to the UPGTOOL directory within the new shell.

**Step 6** Start the tool; type **./upgedsol.exe** and press **Enter**.

An introductory message and prompt are displayed on the screen. (See Figure 7.)

***Figure 7 ICC UPG Tool Introductory Message and Prompt***




**Step 7** Enter the file name of the default .upg file copied in Step 3.

The UPG Update Tool menu, and a prompt, are displayed on the screen. (See Figure 8.)

*Figure 8 ICC UPG Update Tool Menu and Prompt*

```
        ******************************************
        *                                        *
        *           UPG Update Tool              *
        *                                        *
        *       1.  Display Rx Pulse data        *
        *       2.  Modify  Rx Pulse data        *
        *       3.  Display Tx Pulse data        *
        *       4.  Modify  Tx Pulse data        *
        *       5.  Display State Model          *
        *       6.  Modify State Model           *
        *       7.  Create User Defined Data File*
        *                                        *
        *       0.  Exit                         *
        *                                        *
        ******************************************

Enter your Choice:
```

The ICC UPG Update Tool menu options, and custom .upg file creation instructions, are described in "Custom .upg File Creation Instructions," page 10.

### Install and Start the ICC UPG Update Tool with a Microsoft Windows PC Workstation

Complete the following steps to install and start the ICC UPG Update Tool on a Microsoft Windows PC workstation. For SUN Solaris users, refer to "Install and Start the ICC UPG Update Tool with a SUN Solaris Workstation," page 7, for tool installation instructions.

**Step 1** Create a directory named UPGTOOL on your PC.

**Step 2** Copy the upgedwin.exe executable file—the ICC UPG Update Tool—from the ICC PROTOCOL GENERATOR diskette to the UPGTOOL directory.

**Step 3** Copy the appropriate default .upg file from diskette 6 to the UPGTOOL directory according to the following rules:

- Copy the iccem.upg file if using the E&M, T1 protocol.
- Copy the icccasr2.upg file if using the CAS/R2, E1 protocol.

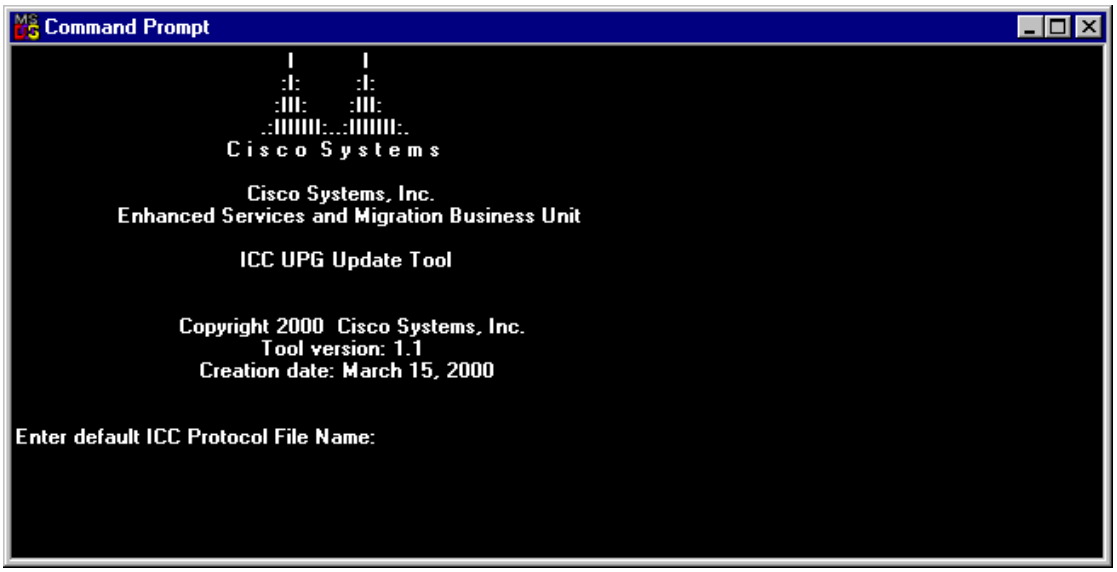
**Step 4** Open a Command Prompt window.

**Step 5** Change to the UPGTOOL directory within the window.

**Step 6** Start the tool; type **upgedwin.exe** and press **Enter**.

An introductory message and prompt are displayed in the window. (See Figure 9.)

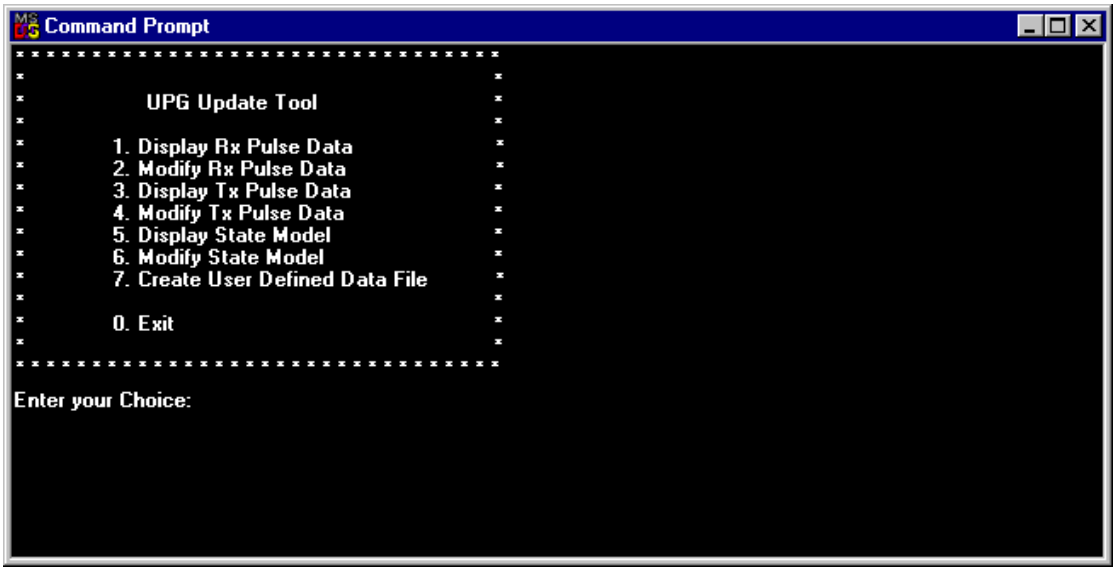
*Figure 9 ICC UPG Tool Introductory Message and Prompt*




**Step 7** Enter the file name of the default .upg file copied in Step 3.

The ICC UPG Update Tool menu, and a prompt, are displayed on the screen. (See Figure 10.)

*Figure 10 ICC UPG Update Tool Menu and Prompt*




Refer to "Custom .upg File Creation Instructions," page 10, for a description of the ICC UPG Update Tool menu options, and custom .upg file creation instructions.

## Custom .upg File Creation Instructions

The creation of custom .upg files is accomplished with the ICC UPG Update Tool. All customizing instructions are illustrated with figures representative of those seen while using a SUN Solaris workstation. PC workstation users see the same information, but in a Command Prompt window.

SUN Solaris workstations users, refer to Figure 8 for the ICC UPG Update Tool menu. PC workstation users, refer to Figure 10 for the ICC UPG Update Tool menu. The ICC UPG Tool menu options are described in Table 1.

***Table 1 ICC UPG Update Tool Menu Options***

| Menu Option | Description |
|---|---|
| 1. Display Rx Pulse Data | Displays a list of receive pulse data (incoming signals)—data traveling from the network to the card—and describes how each is decoded by the protocol. |
| 2. Modify Rx Pulse Data | Allows users to modify the active bit pattern (ABCD bits) and the minimum and maximum detection times of each received pulse.<br>**Note** The ABCD signaling bits for the CAS/R2, E1 protocol must not be modified. |
| 3. Display Tx Pulse Data | Displays a list of transmit pulse data (outgoing signals)—data traveling from the card to the network—that can be transmitted by the protocol, and describes how each is decoded by the protocol. |
| 4. Modify Tx Pulse Data | Allows the user to modify the active bit pattern (ABCD bits) and the minimum and maximum detection times of each transmitted pulse.<br>**Note** The ABCD signaling bits for the CAS/R2, E1 protocol must not be modified. |
| 5. Display State Model | Displays the current state model. |
| 6. Modify State Model | Not available for customer use at this time. |
| 7. Create User Defined Data File | Allows the user to save the customized .upg file. |
| 0. Exit | Allows the user to exit the ICC UPG Update Tool menu. |

Follow the step-by-step instructions in the following sections to customize a default .upg file.

### Display and Modify Receive Pulse Data—Options 1 and 2

Complete the following steps to display and modify the receive pulse data of a default .upg file.

**Step 1** From the ICC UPG Update Tool menu, press **1** and **Enter**.

The receive pulse data is displayed on the screen (see Figure 11), followed by the ICC UPG Update Tool menu and the Enter your Choice prompt.

*Figure 11 Display Rx Pulse Data Display*

```
  ****  Receive Pulses  ****

                                  Timing (ms)
Name                   ABCD bits   Min   Max
--------------------   ---------  -----------
rx_seize                  12       375     0
rx_wink                   12       100   350
rx_flash                   0       100   350
rx_idle                    0       375     0
```

Each protocol can detect a certain number of receive pulses (our example, Figure 11, contains four). Each pulse is described by four parameters. (See Table 2.)

*Table 2 Display Rx Pulse Data Parameters*

| Parameter | Description |
|---|---|
| Name | Name for the pulse; for debugging and maintenance only. |
| ABCD bits | The ABCD bit pattern identifying a specific signal—a binary number from 0000 to 1111; displayed as decimal, 0 to 15. |
| Timing (ms), Min | Represents the minimum time, in milliseconds, that the active bit pattern (see Table 3) must be present on the incoming line. |
| Timing (ms), Max | Represents the maximum time, in milliseconds, that the active bit pattern (see Table 3) can be present on the incoming line. |

**Step 2** Press **2** and **Enter** to modify the receive pulse data.

The first receive pulse data is displayed. (See Figure 12.) The cursor is located after the Enter ABCD Bits value (0-15) [ n] prompt. The default, or current, value is contained within the square brackets.

*Figure 12 First Receive Pulse Data Display—ABCD Bits Prompt*

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
```

**Step 3** Modify the ABCD bit pattern, taking into account the following considerations:

- For the E&M, T1 protocol, the receive pulses are defined by a certain sequence of changes in the A and B bits; the C and D bits are not used for defining receive pulses. Refer to Table 3 for the default values of the ABCD bit patterns.

**Note** Only the active bit pattern is stored in the customized .upg file.

*Table 3 Default ABCD Bit Patterns for the E&M, T1 Protocol*

| Signaling Name | Start Pattern | Active Pattern | End Pattern |
|---|---|---|---|
| Seize | 0000 | 1100 | — |
| Wink | 0000 | 1100 | 0000 |
| Flash | 1100 | 0000 | 1100 |
| Idle | 1100 | 0000 | — |

- For the CAS/R2, E1 protocol, the receive pulses are defined as specific ABCD bit patterns. Refer to Table 4 for the default values of the ABCD bit patterns.

*Table 4 Default ABCD Bit Patterns for the CAS/R2, E1 Protocol*

| Signaling Name | Bit Pattern |
|---|---|
| Seize | 0001 |
| Seize Acknowledge | 1101 |
| Answer | 0101 |
| Clear Back | 1101 |
| Idle | 1001 |

**a.** Convert the appropriate binary ABCD bit pattern to decimal.

**b.** Type the decimal value.

**c.** Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Minimum Timer Value (ms) [ n]—followed by the cursor, is displayed. (See Figure 13.) The default, or current, value is contained within the square brackets.

*Figure 13 First Receive Pulse Data Display—Minimum Timer Selection Prompt*

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
Enter Minimum Timer Value (ms) [ 375]:
```

**Step 4** Modify the minimum timer value, taking into account the following considerations:

- For the E&M, T1 protocol, the receive pulses are defined by a minimum time, in milliseconds, that the active bit pattern must be present on the incoming line. Refer to Table 5 for the default minimum timer values. Adhere to E&M protocol industry standards for valid timer selections.

*Table 5 Default Minimum Timer Values for the E&M, T1 Protocol*

| Signaling Name | Minimum Time (ms) |
|---|---|
| Seize | 375 |
| Wink | 100 |
| Flash | 100 |
| Idle | 375 |

- For the CAS/R2, E1 protocol, all bit patterns are valid the instant they are present; default minimum timer values are always 0. You must select 0 (zero) for the minimum timer value.

**a.** Type the appropriate minimum timer value for the seize receive pulse.

**b.** Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Maximum Timer Value (ms) [ n]—followed by the cursor, is displayed. (See Figure 14.) The default, or current, value is contained within the square brackets.

*Figure 14 First Receive Pulse Data Display—Maximum Timer Selection Prompt*

```
Enter your Choice: 2

  ****  Receive Pulses  ****

Signal: 'rx_seize'
Enter ABCD Bits value (0-15)   [  12]:
Enter Minimum Timer Value (ms) [ 375]:
Enter Maximum Timer Value (ms) [   0]:
```

**Step 5** Modify the maximum timer value, taking into account the following considerations:

- For the E&M, T1 protocol, the receive pulses are defined by a maximum time, in milliseconds, that the ABCD bit pattern can be present on the incoming line. Refer to Table 6 for the default maximum timer values. Adhere to E&M protocol industry standards for valid timer selections.

*Table 6 Default Maximum Timer Values for the E&M, T1 Protocol*

| Signaling Name | Maximum Time (ms) |
|---|---|
| Seize | 0 |
| Wink | 350 |
| Flash | 350 |
| Idle | 0 |

- For the CAS/R2, E1 protocol, the receive pulses are not defined by a maximum time; default maximum timer values are always 0. You must select 0 (zero) for the maximum timer value.

**Note** A zero maximum timer value indicates that the pattern can remain indefinitely.

a. Type the appropriate maximum timer value for the seize receive pulse.

b. Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

The second receive pulse data is displayed, along with the Enter ABCD Bits value (0-15) [ n] prompt.

**Step 6** Repeat Step 3 through Step 5 for this and all remaining receive pulse data.

When all receive pulse data is modified, the ICC UPG Update Tool screen is displayed. SUN Solaris workstation users, refer to Figure 8. Microsoft Windows PC workstation users, refer to Figure 10.

### Display and Modify Transmit Pulse Data—Options 3 and 4

Complete the following steps to display and modify the transmit pulse data of a default .upg file.

**Step 1** From the ICC UPG Update Tool menu, press **3** and **Enter**.

The transmit pulse data is displayed on your screen (see Figure 15), followed by the ICC UPG Update Tool menu and the Enter your Choice prompt.

***Figure 15 Display Tx Pulse Data Display***

```
Enter your Choice: 3

  ****  Transmit Pulses  ****

Pulse                Segment  ABCD bits  On Time (ms)
-------------------  -------  ---------  ------------
tx_seize                1        12         350
tx_idle                 1         0         350
tx_wink                 1        12         240
tx_wink                 2         0         350
tx_flash                1         0         240
tx_flash                2        12         350
```

Each protocol can send a certain number of transmit pulses (our example, Figure 15, contains four). Each pulse is described by four parameters. (See Table 7.)

**Note** The transmit pulses wink and flash are assigned two segments. Each segment contains an ABCD bit pattern value and an active bit pattern timing value; both can be modified.

*Table 7 Display Tx Pulse Data Parameters*

| Parameter | Description |
|---|---|
| Pulse | Name of the pulse. |
| Segment | A numerical identifier for each segment of a pulse; a pulse is assigned one or two segments. Segment 1 indicates a minimum timer value. Segment 2 indicates a maximum timer value.<br><br>**Note** Transmit pulses wink and flash are the only transmit pulses with maximum timer values. |
| ABCD bits | The ABCD bit pattern that is to be transmitted—a binary number from 0000 to 1111; displayed as decimal, 0 to 15. |
| On Time (ms) | Represents the time, in milliseconds, that the active bit pattern (refer to Table 8) will be transmitted on the outgoing line. |

**Step 2** Press **4** and **Enter** to modify the transmit pulse data.

The first transmit pulse name and segment data is displayed (seize). (See Figure 16.) The cursor is located after the Enter ABCD Bits value (0-15) [ n] prompt. The default, or current, value is contained within the square brackets.

*Figure 16 Transmit Pulse Data Display—ABCD Bits Value Prompt*

```
Enter your Choice: 4


  ****  Transmit Pulses  ****

Signal: 'tx_seize'
Segment 1: Enter ABCD Bits value (0-15) [  12]:
```

**Step 3** Modify the ABCD bit pattern, taking into account the following considerations:

- For the E&M, T1 protocol, the transmit pulses are defined by a certain sequence of changes in the A and B bits; the C and D bits are not used for defining transmit pulses. Refer to Table 8 for the default values of the ABCD bit patterns.

*Table 8 Default ABCD Bit Patterns for the E&M, T1 Protocol*

| Signaling Name | Start Pattern | Active Pattern | End Pattern |
|---|---|---|---|
| Seize | 0000 | 1100 | — |
| Wink | 0000 | 1100 | 0000 |
| Flash | 1100 | 0000 | 1100 |
| Idle | 1100 | 0000 | — |

- For the CAS/R2, E1 protocol, the transmit pulses are defined as specific ABCD bit patterns. Refer to Table 9 for the default values of the ABCD bit patterns.

*Table 9 Default ABCD Bit Patterns for the CAS/R2, E1 Protocol*

| Signaling Name | Bit Pattern |
|---|---|
| Seize | 0001 |
| Seize Acknowledge | 1101 |
| Answer | 0101 |
| Clear Back | 1101 |
| Idle | 1001 |

a. Convert the appropriate binary ABCD bit pattern to decimal.

b. Type the decimal value.

c. Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

A new prompt—Enter Time On Value (ms) [ n]—followed by the cursor, is displayed. (See Figure 17.)

*Figure 17 Transmit Pulse Data Display—Time On Value Prompt*

```
Enter your Choice: 4


  ****  Transmit Pulses  ****

Signal: 'tx_seize'
Segment 1: Enter ABCD Bits value (0-15) [  12]:
Segment 1: Enter Time On Value (ms)     [ 350]:
```

**Step 4** Modify the minimum timer value (segment 1 timer value), taking into account the following considerations:

- For the E&M, T1 protocol, the transmit pulses are defined by the length of time, in milliseconds, that the active bit pattern must be present on the outgoing line. Refer to Table 10 for the default minimum timer values. Adhere to E&M protocol industry standards for valid timer selections.

*Table 10 Default Minimum Timer Values for the E&M, T1 Protocol*

| Signaling Name | Minimum Time (ms) |
|---|---|
| Seize | 375 |
| Wink | 100 |
| Flash | 100 |
| Idle | 375 |

- For the CAS/R2, E1 protocol, all bit patterns are valid the instant they are present; default minimum timer values are always 0. You must select 0 (zero) for the maximum timer value.

**a.** Type the appropriate timer value for the seize receive pulse.

**b.** Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

**Step 5** Use the following considerations to determine your next step.

- If the seize or idle transmit pulse was configured in Step 4, above, configuration for that transmit pulse is complete. Repeat Step 1 through Step 5 for the next transmit pulse displayed.
- If the wink or flash transmit pulse was configured in Step 4, above, proceed to Step 6.

**Step 6** Modify the ABCD end bit pattern (segment 2) following the guidelines discussed in Step 3, above.

**Step 7** Modify the maximum timer value (segment 2 timer value), taking into account the following considerations:

**Note** Transmit pulses wink and flash are the only transmit pulses with maximum timer values. The maximum timer values are always contained in segment 2 of a transmit pulse.

- For the E&M, T1 protocol, the transmit pulses are defined by a maximum time, in milliseconds, that the ABCD bit pattern can be present on the outgoing line. Refer to Table 11 for the default maximum timer values. Adhere to E&M protocol industry standards for valid timer selections.

***Table 11 Default Maximum Timer Values for the E&M, T1 Protocol***

| Signaling Name | Maximum Time (ms) |
|---|---|
| Seize | 0 |
| Wink | 350 |
| Flash | 350 |
| Idle | 0 |

- For the CAS/R2, E1 protocol, the transmit pulses are not defined by a maximum time; default maximum timer values are always 0. You must select 0 (zero) for the maximum timer value.

**Note** A zero maximum timer value indicates that the pattern can remain indefinitely.

**a.** Type the appropriate maximum timer value for the transmit pulse.

**b.** Press **Enter**.

**Note** Pressing Enter without first entering a value leaves the default, or current, value unmodified.

The next transmit pulse data is displayed, along with the Enter ABCD Bits value (0-15) [ n] prompt.

**Step 8** Repeat Step 3 through Step 5 for this and all remaining transmit pulse data.

When all transmit pulse data is modified, the ICC UPG Update Tool screen is displayed. SUN Solaris workstation users, refer to Figure 8. Microsoft Windows PC workstations users, refer to Figure 10.

The customized .upg file is complete and ready to save. It is not necessary to access the ICC UPG Update Tool's option 5 or option 6. Refer to "Save a Customized .upg Data File—Option 7," page 20, in order to save your customized .upg file for use in the switch.

### Display the State Model—Option 5

**Note** It is not necessary to access option 5 or option 6 to create a customized .upg file. Option 5 is display only, and option 6 is not available for customer use at this time. At this point it is advised to proceed to "Save a Customized .upg Data File—Option 7," page 20.

From the ICC UPG Update Tool screen, press **5** and **Enter**, to display the current state model.

The current state model, which describes protocol states, is displayed on the screen. (See Figure 18.)

***Figure 18 State Model Display***

```
Enter your Choice: 5


  ****  State Model  ****

#    State           Event             Next State
--  ------------     -----------       -----------
1    1:idle          1:tx_seize        3:wait_for_rx_ans
2    1:idle          4:abandon         7:guard
3    1:idle          5:alarm           8:alarm
.    .               .                .
.    .               .                .
.    .               .                .
```

The state model is described by four parameters. (See Table 12.)

***Table 12 State Model Parameters***

| Parameter | Description |
|---|---|
| # | A sequential number list which gives the state model display some structure. |
| State | The current state of the protocol.[1] |
| Event | Transition identifier; event possibly encountered.[1] |
| Next State | Resulting state; the state achieved if State and Event conditions are met.[1] |

1. The last three parameters described in Table 12 require some explanation. Using the #2 row of Figure 18 as an example, if the current protocol state is idle (1:idle) and the abandon (4:abandon) event is encountered, the next state which the protocol assumes is guard (7:guard).

The state model display is followed by the ICC UPG Update Tool menu.

### Modify the State Model—Option 6

This option is not supported for customer use at this time. Do not select option 6. However, if you happen to select option 6, press Enter to accept default values until the ICC UPG Update Tool menu is displayed.

The customized .upg file is complete and ready to save. Refer to "Save a Customized .upg Data File—Option 7".

### Save a Customized .upg Data File—Option 7

Complete the following steps to save the customized receive and transmit pulse modifications to a new .upg file.

**Step 1** From the ICC UPG Update Tool screen, press **7** and **Enter**.

The following message is displayed on the screen. (See Figure 19.) The cursor is located after the Enter (3-6) prompt.

***Figure 19 Create User Defined Data File Display***

```
Enter your Choice: 7
Select the user defined file name (icc0x.upg),
Enter (3-6) :
```

**Step 2** Type a number from 3 to 6.

**Step 3** Press **Enter**.

The following information is displayed on the screen. (See Figure 20.)

***Figure 20 Created File Display***

```
Enter your Choice: 7
Select the user defined file name (icc0x.upg),
Enter (3-6) : 4


protocol id:14
protocol name:E&M04
```

The number entered in Step 2 is used to create three items:

- A customized .upg file containing the number entered in Step 2 in the form of icc0n.upg, where n is the number entered. For example, if the number 4 is entered, a file with the name icc04.upg is created.
- An identifier for the customized protocol in the form of USER0n, where n is the number entered in Step 2. For example, if the number 4 is entered, a protocol identifier with the name USER04 is created.
- A new protocol name—signaling type—in one of two forms:
  - E&M0n, for the E&M, T1 protocol, where n is the number entered in Step 2
  - Cas0n, for the CAS/R2, E1 protocol, where n is the number entered in Step 2

**Note** A maximum of four customized .upg data files can be created and saved. Reuse an existing data file to create subsequent data files.

Table 13 describes the items created with Step 2 for the E&M, T1 protocol.

***Table 13 Customized .upg File Elements for the E&M , T1 Protocol***

| Step 2 Number Entry | File Name | Protocol ID | Signaling Type |
|---|---|---|---|
| 3 | icc03.upg | USER03 | E&M03[1] |
| 4 | icc04.upg | USER04 | E&M04[1] |
| 5 | icc05.upg | USER05 | E&M05[1] |
| 6 | icc06.upg | USER06 | E&M06[1] |

1. T1 signaling types are displayed as selectable SIG. TYPE field values within the VCO/4K software administration's ICC Programmable Trunk Configuration screen.

Table 14 describes the items created with Step 2 for the CAS/R2, E1 protocol.

***Table 14 Customized .upg File Elements for the CAS/R2, E1 Protocol***

| Step 2 Number Entry | File Name | Protocol ID | Span Type |
|---|---|---|---|
| 3 | icc03.upg | USER03 | Cas03[1] |
| 4 | icc04.upg | USER04 | Cas04[1] |
| 5 | icc05.upg | USER05 | Cas05[1] |
| 6 | icc06.upg | USER06 | Cas06[1] |

1. E1 signaling types are displayed as selectable SPAN TYPE field values within the VCO/4K software administration's ICC Programmable Trunk Configuration screen.

**Note** Switch configuration with the customized .upg file makes use of the different files and names created in Step 2; keep accurate records.

**Step 4** Press **Enter** to return to the ICC UPG Update Tool screen.

### Exit from the ICC UPG Update Tool—Option 0

From the ICC UPG Update Tool screen, press **0** and **Enter** to exit from the tool.

Copy the customized .upg file from the hard drive to a floppy diskette.

A new custom .upg file is now ready for implementation on the VCO/4K switch; refer to "Switch Configuration with a Customized .upg File," page 22, for complete configuration instructions.

## Switch Configuration with a Customized .upg File

Complete the following steps to configure the VCO/4K switch with a customized .upg file.

**Note** For each step below, refer to the *VCO/4K System Administrator's Guide* for further instructions.

**Step 1** Access the VCO/4K software administration's Copy Files screen.

**Step 2** Copy the customized .upg file from the diskette (the file created on the diskette with instructions in "Custom .upg File Creation Instructions," page 10) to the C:/BOOT directory on both the A and B sides of the switch.

**Step 3** Access the VCO/4K software administration's Card Maintenance screen.

**Step 4** Take the entire ICC out of service (OOS).

**Step 5** Access the Card Summary screen (see Figure 21), via the Database Administration menu.

***Figure 21 Card Summary Screen***

```
                        C A R D   S U M M A R Y

LOCATION                                                  UNUSED       DISP
R  L  S            CARD TYPE                  STATUS     PORTS        CARD
----------     ----------------------      --------   ------       ----
1  1  1-1      Network Bus                     A          0           _
1  1  1-2      Tone Generator                  A          1           _
1  1  2-1      Network Bus                     O          0           _
1  1  2-2      Tone Generator                  O          1           _
1  1  14-1-1   SPC-DTMF                        O          0           _
1  1  14-1-2   SPC-CPA                         O          0           _
1  1  16-1-3   ICC-T1                          O          0           _
1  1  16-1-4   ICC-T1                          O          0           _
1  1  16-2-1   ICC-T1                          O          0           _
1  1  16-2-2   ICC-T1                          O          0           _
1  1  16-2-3   ICC-T1                          O          0           _
1  1  16-2-4   ICC-T1                          O          0           _
1  1  16-3-1   ICC-T1                          O          0           _
1  1  16-3-2   ICC-T1                          O          0           _
1  1  16-3-3   ICC-T1                          O          0           _
```

TP000382

**Step 6** Display the span of the ICC you want to configure with the customized .upg file.

The ICC Programmable Trunk Configuration screen is displayed. (See Figure 22.)

*Figure 22 ICC Programmable Trunk Configuration Screen—T1*

```
                    ICC PROGRAMMABLE TRUNK CONFIGURATION

SPAN LOCATION:   R,L,S 1 1 16-1-1       STATUS:     Out of Service
CARD TYPE:       ICC-T1                 SPAN TYPE:  SF        CODE: AMI
TXGAIN: Obd      TXCLCK: SCLK           SLIP: 255   ALM: SYS  LENG: 0-133
RXGAIN: Obd      RFCLCK: LOOP           OOF:  17

         TRUNK                  GROUP      SIG.   INPULSE
PORT     NAME       GROUP       NAME       TYPE    RULE      COS       LAW
----   --------     -----     ---------     ----   -------   ----       ---
 1                    __       ________     E&M03    0        2         Mu
 2                    __       ________     E&M      0        2         Mu
 3                    __       ________     E&M      0        2         Mu
 4                    __       ________     E&M      0        2         Mu
 5                    __       ________     E&M      0        2         Mu
 6                    __       ________     E&M      0        2         Mu
 7                    __       ________     E&M      0        2         Mu
 8                    __       ________     E&M      0        2         Mu
```

TP000383

**Step 7** Use the SIG. TYPE field (for the E&M, T1 protocol) to select the customized .upg file signaling type for each port for which it is appropriate. (See Figure 22.) Use the SPAN TYPE field (for the CAS/R2, E1 protocol) to select the customized .upg file signaling type for each port for which it is appropriate. (See Figure 23.)

*Figure 23 ICC Programmable Trunk Configuration Screen—E1*

```
                    ICC PROGRAMMABLE TRUNK CONFIGURATION

SPAN LOCATION:   R,L,S 1 1 16-1-1       STATUS:     Out of Service
CARD TYPE:       ICC-E1                 SPAN TYPE:  Cas03         TS0:
TXGAIN: Obd      TXCLCK: SCLK           SLIP: 255   ALM: SYS  LENG: 0-133
RXGAIN: Obd      RFCLCK: LOOP           OOF:  17

         TRUNK                  GROUP      SIG.   INPULSE
PORT     NAME       GROUP       NAME       TYPE    RULE      COS       LAW
----   --------     -----     ---------     ----   -------   ----       ---
 1                    __       ________     ___      0        2         Mu
 2                    __       ________     ___      0        2         Mu
 3                    __       ________     ___      0        2         Mu
 4                    __       ________     ___      0        2         Mu
 5                    __       ________     ___      0        2         Mu
 6                    __       ________     ___      0        2         Mu
 7                    __       ________     ___      0        2         Mu
 8                    __       ________     ___      0        2         Mu
```

TP000392

**Note** The customized SIG. TYPE (T1) or SPAN TYPE (E1) field selections are those created in "Save a Customized .upg Data File—Option 7," page 20, and described in Table 13 and Table 14.

**Note** When you select or modify the signaling type on port 1, the Enter Y to propagate port 1 values message is displayed. Press Y to configure all remaining ports with the same signaling type as that of port 1. Press N to configure only port 1 with a particular signaling type.

**Step 8** Access the VCO/4K software administration's Card Maintenance screen.

**Step 9** Activate the ICC.

The customized .upg file is now configured in the switch and the new protocol is implemented.

## ICC UPG Update Tool Restrictions and Limitations

Keep the following restrictions and limitations in mind when configuring the switch with customized .upg files:

**Caution** The ICC UPG Update Tool allows you to create customized .upg files that may not be valid for the VCO/4K system. Interruption of service and loss of calls may occur.

- A maximum of four customized .upg data files can be created and saved. Reuse an existing data file to create subsequent data files.
- The customized .upg file names are fixed—icc03.upg through icc06.upg.
- The customized .upg file names are not protocol specific; the names can designate either the E&M, T1 or the CAS/R2, E1 protocol.
- Users of customized .upg files must create new customized .upg files when upgrading system software. The new customized .upg files must be created using the new default .upg files.

# System Requirements

This section provides a list of system requirements for running VCO/4K system software. These requirements are categorized by hardware, firmware, and software. Contact Cisco Systems Technical Assistance Center (TAC) for any site-specific information.

# Hardware Requirements

To operate system software V5.1, your Cisco VCO/4K switch must be equipped with the following minimum components and revisions:

- System Controller
  - VME-147 System Controller Card (must have updated boot PROMs) or Combined Controller (16 MB 68030-based CPU)

    Refer to the *CPU Upgrade Procedure* (63104050100) if you need to replace a 25-MHz/8-MB CPU with a 33-MHz/16-MB CPU.
  - CPU Transition Module (CPU-TM) or storage/control I/O module
  - SWI Version A0AR
- Storage Subsystem
  - SCSI interface hard drive, 42 MB or larger
  - 3.5" SCSI interface floppy drive
- Control Circuit Cards
  - NBC-3 card, rev C0GR or E0AR

    Two NBC-3 cards are required for redundant systems.
  - Alarm Arbiter Card (AAC), rev COUR (or later) is required for C-bus operation
- Service Circuit Cards
  - DTG-2 or DTG (Digital Tone Generator)
- Network Circuit Cards
  - ICC, rev C09P
  - 16-span ICC-E1 I/O module, rev A15P
  - 4- and 8-span ICC-E1 I/O module, rev A16P
  - 16-span ICC-T1 I/O module, rev A16P
  - 4- and 8-span ICC-T1 I/O module, rev A17P

**Note** Use the I/O module specific to your needs; you do not need all of the I/O modules listed above to meet the hardware minimum requirements.

# Firmware Requirements

Table 15 lists the system firmware requirements. Refer to the technical descriptions in Volumes 3 and 4 of your Cisco VCO/4K hardware documentation set for firmware locations for each card.

For tone plan-specific firmware requirements (which affect DTG-2 or DTG, CPA, and MFCR2 cards), refer to the *VCO/4K Tone Plan Release Notes.*

**Note** The firmware label applied by Cisco Systems may list only the last four digits of the checksum. The checksum for the NBC-3 LP125 is not listed because the programming for this item is part of the NBC-3 download file.

*Table 15 Firmware Requirements*

| Card | Firmware | Checksum | Versions | Location | Changed Since V5.1(2) |
|---|---|---|---|---|---|
| 8LTC | 8LTC | 0000E09F | 1.43 | U2 | N |
| BRC | BRC | 00002412 | 2.01 | U2 | N |
| CPA | CPA | 0000A7A2 | 1.03 | U2 | N |
| CPU | Boot EVEN | 006E691D | 5.00 | U1 | N |
| | Boot ODD | 00866CBF | 5.00 | U15 | |
| | MVME147-023 ODD | 5741B41F | 2.44 | U30 | |
| | MVME147-023 EVEN | 5741B42F | 2.44 | U22 | |
| D+I | D+I | 00003158 | 2.02 | U9 | N |
| DID-2 | DID-2 | 000010C3 | 1.41 | U2 | N |
| DRC-8 | DRC | 00009625 | 5.23 | U2 | N |
| DRC-24/48 | DRC-2 | 00004241 | 3.08 | U2 | N |
| DVC | DVC | 000095BE | 2.07 | U2 | N |
| E+M | E+M | 0000D381 | 2.06 | U2 | N |
| E1-CAS | E1-CAS/MERC | 0000F1C6 | 2.13 | U23 | N |
| | E1-CAS/R2 | 00002654 | 2.01 | U23 | |
| | E1-31B | 0000EF58 | 3.03 | U23 | |
| | E1-CAS/R2 (No CRC4) | 000EDF08 | 3.43 | U23 | |
| | CAS PROC | 00001E78 | 1.04 | U85 | |
| | 32 CHAN SETUP | 0000CDDE | 1.00 | U113 | |
| | GAIN/LAW PROM | 000011D2 | 1.02 | U45/53 | |
| ICC I/O Module | Com Bus | 00299FE4 | 8.01 | U48 | N |
| | J3 | 00275397 | 8.01 | U76 | |
| | CS | 002A9F8A | 8.01 | U12 | |
| | 5x7, Rev B | 000B5C9A | 8.01 | U11 | |
| | PCM Interface | 00257696 | 8.02 | U41 | |
| IPRC-8 | IPRC 8-PORT | 00220D75 | 1.03 | U2 | N |
| IPRC-64 | IPRC 64-PORT | 00220DC1 | 1.03 | U2 | N |
| IPRC-128 | IPRC 128-PORT | 00220E0A | 1.03 | U2 | N |
| MRC | MRC | 0000EE80 | 3.08 | U2 | N |

*Table 15 Firmware Requirements (continued)*

| Card | Firmware | Checksum | Versions | Location | Changed Since V5.1(2) |
|---|---|---|---|---|---|
| MVDC-T1 | Local Bus | 000D373B | LP100A | U35 | N |
| | Com Bus | 00186169 | LP101A | U19 | |
| | Interrupt | 000AE787 | LP102 | U75 | |
| | PCM Interface | 001748E3 | LP103A | U107 | |
| | Framer | 0005FE2C | LP104 | U76 | |
| | Gain/Law | 0005A153 | LP105B | U49 | |
| | T1 Clock | 000BE051 | LP106 | U80 | |
| | Gain/Law | 00776220 | — | U50 | |
| | Boot PROM | 0066DF90 | 1.06 | U10 | |
| NBC-3 Card | LP122 SWI | 00194974 | LP122C | U66 | N |
| Rev C | LP123 Counter | 0018E096 | LP123E | U13 | |
| | LP124 Chip Select | 000D7B43 | LP124C | U12 | |
| | LP125 Com Bus FPGA | — | LP125C | U43 | |
| | LP126 Com Bus EPLD | 0005CED8 | LP126B | U47 | |
| | LP127 Mezzanine Add. | 0006C919 | LP127A | U105 | |
| | Boot PROM | 00F597BE | 1.02 | U4 | |
| NBC-3 Card | LP141 SWI | 0019204D | LP141A | U31 | N |
| Rev E | LP140 Counter | 0015E220 | LP140H | U73 | |
| | LP139 Chip Select | 000D4209 | LP139A | U30 | |
| | LP125 Com Bus FPGA | — | LP125C | U53 | |
| | Boot PROM | 00F597BE<br>00F5D06E | 1.02 or 1.03 | U1 | |
| SLIC-2 | SLIC-2 | 000010B9 | 1.41 | U2 | N |
| SSC | Com Bus Control | 00186169 | LP101A | U24 | N |
| | PCM Interface | 00185A34 | LP130B | U76 | |
| | Quad 9 to 1 | 0017878C | LP129A | U71/U70 | |
| | Redundancy Control | 0017F249 | LP128A | U100 | |
| | Subrate Matrix Control | 000BB573 | LP131 | U31 | |
| | Boot PROM | 00400736 | 1.02 | U10 | |
| T1 | T1 | 00002BA5 | 1.26 | U2 | N |
| | T1 Aux Proc | 00007125 | 1.00 | U45 | N |
| UTC-2 Rev A | UTC | 0000F91E | 6.00 | U2 | N |
| UTC-2 Rev B | UTC | 0000ECF0 | 6.54 | U2 | N |

*Table 15 Firmware Requirements (continued)*

| Card | Firmware | Checksum | Versions | Location | Changed Since V5.1(2) |
|---|---|---|---|---|---|
| 4XT1 | 4XT1 68340 VIRT CM | 28FAF0 | 1.09 | U10 | N |
| | 4XT1 68302 ODD | 00277AE4 | 1.14 | U47, 93, 150, 185 | N |
| | 4XT1 68302 EVEN | 00242750 | 1.14 | U48, 94, 151, 186 | N |
| | GAIN/LAW CCITT G.711 | 000FCD68 | 1.03 | U25, 28, 67, 78, 120, 131, 158, 170 | N |
| | PATH SETUP ROM | 0000CDDE | 1.00 | U35, 86, 116,178 | N |
| E1-PRI | E1-PRI FW Odd | 00105999 | 1.03 | U38 | N |
| (NTDASS2, DPNSS) | E1-PRI FW Even | 000DA6C3 | 1.03 | U39 | N |
| | E1-PRI 32 Chan Setup | 0000CDDE | 1.00 | U113 | N |
| | PCM Gain/Law | 000011D2 | 1.02 | U45/53 | N |
| E1-PRI 120Ω | Net5 ODD | 1075A4 | 1.04 | U38 | N |
| (NET5) | Net5 EVEN | DB375 | 1.04 | U39 | N |
| PRI | PRI FW Odd | 00107EA5 | 1.02 | U38 | N |
| | PRI FW Even | 000DB30B | 1.02 | U39 | N |
| | 32 Chan Setup | 0000CDDE | 1.00 | U29 | N |
| | PCM GAIN/LAW | 000011D2 | 1.02 | U45/53 | N |
| PRI/N | ODD | 00115CB1 | 1.09 | U38 | N |
| | EVEN | 000DEE1D | 1.09 | U39 | N |
| | 32 Chan Setup | 0000CDDE | 1.00 | U29 | N |
| | PCM Gain/Law | 000011D2 | 1.02 | U45/53 | N |
| 4XE1 | 4XE1 68340 VIRT CM | 28FAF0 | 1.09 | U10 | N |
| | 4XE1 68302 ODD | 00263E25 | 1.04 | U47, 93, 150, 185 | N |
| | 4XE1 68302 EVEN | 002313DD | 1.04 | U48, 94, 151, 186 | N |
| | GAIN/LAW CCITT G.711 | 000FCD68 | 1.03 | U25, 28, 67, 78, 120, 131, 158, 170 | N |
| | PATH SETUP ROM | 0000CDDE | 1.00 | U35, 86, 116,178 | N |

*Table 15 Firmware Requirements (continued)*

| Card | Firmware | Checksum | Versions | Location | Changed Since V5.1(2) |
|---|---|---|---|---|---|
| DCC[1] | DCC | 0000A575 | 2.02 | U2 | N |
| (North American Tone Plan) | LIN/PCM 0 DB | 0000B9A2 | 1,00 | U43 | N |
| | LIN/PCM -3 DB | 0000AB04 | 1.00 | U44 | N |
| | PCM/LIN Odd | 0000AFA2 | 1.00 | U33 | N |
| | PCM/LIN Even | 0000B736 | 1.00 | U34 | N |
| DTG/DTG-2[1] | DTG-FW[2] | 000077AD | 1.23 | U2 | N |
| (North American Tone Plan) | | 00007C30 | 1.25 | U2 | |
| | Tone ODD | 00000078 | 2.04 | U54 | |
| | Tone EVEN | 00004217 | 2.04 | U53 | |
| | MAP PROM LP87 | 0000628A | 1.1 | U36 | |
| | MAP PROM LP88 | 00004B9E | 1.1 | U37 | |

1. Refer to the *VCO/4K Tone Plan Release Notes* for listings of firmware requirements for countries other than those found in North America.
2. Version 1.23 or 1.25 is required. Version 1.25 supplies an additional tone for customers in Canada.

# Software Requirements

Table 16 lists valid software checksums and versions for the VCO/4K system software and optional software products.

Use the Software/Firmware Configuration utility to identify the version and checksum of each software file installed on the system (refer to the *Cisco VCO/4K System Administrator's Guide* for more information). System software files are distributed across the installation floppy diskettes. Each optional software product is contained on a single floppy diskette.

***Table 16 Software Requirements***

| VCO/4K System Software | Filename | Checksum | File Version[1] | Changed Since V5.1(2) |
|---|---|---|---|---|
| Executable Files | GLOBALS.EXE | 01541E8D | — | **Y** |
| | HOSTMGR.EXE | 04BE3462 | — | **Y** |
| | SYSWD.EXE | 01B59001 | — | **Y** |
| | REDMGR.EXE | 00FDF8AA | — | **Y** |
| | PERMGR.EXE | 00000000 | — | N |
| | NETMGR.EXE | 030C83A9 | — | **Y** |
| | SNMP.EXE | 02BF0790 | — | **Y** |
| | INSTALL.EXE | 022B14C1 | — | **Y** |
| | TELERTE.EXE | 00007ADA | 4.00 | N |
| | NFAS.EXE | 00007B0C | 6.48 | N |
| | NI2.EXE | 00007B0C | 6.48 | N |
| | ETHERMGR.EXE | 00007B0C | — | N |
| Download Files | MVDCT1.DWN | 00F2D33A | 1.08 | N |
| | NBC.DWN | 01095D96 | 1.09 | N |
| | DNI.DWN | 006F4101 | 1.02 | N |
| | SSC.DWN | 006C84CB | 1.00 | N |
| | CPA.DWN | 003079F3 | 8.09 | N |
| | DVC.DWN | 005ADA02 | 1.08 | N |
| | DTMF.DWN | 00053D1A | 2.02 | N |
| | IPRC.DWN | 0023113E | 1.05 | **Y** |
| | 4XT1.DWN | 00349052 | 1.49 | N |
| | 4XE1.DWN | 0037A584 | 1.44 | **Y** |
| | SPC.DWN | 061A1725 | 5.07 | **Y** |
| | ICC.DWN | 062D0D63 | 5.10 | **Y** |

*Table 16 Software Requirements (continued)*

| VCO/4K System Software | Filename | Checksum | File Version[1] | Changed Since V5.1(2) |
|---|---|---|---|---|
| Protocol Files[2] | ICCCASR2.UPG | 0000071D | — | N |
| | ICCCCS31.UPG | 00000128 | — | N |
| | ICCCLEAR.UPG | 00000128 | — | N |
| | ICCEM.UPG | 00000666 | — | N |
| | ICCGR303.UPG[3] | 000009B3 | — | **Y** |
| | ICC01.UPG | 00000666 | — | N |
| | ICC02.UPG | 0000077A | — | N |
| | ICCFXOGS.UPG | 000007BD | — | **Y** (New) |
| | ICCFXOLS.UPG | 0000076E | — | **Y** (New) |
| | ICCFXSGS.UPG | 000007EA | — | **Y** (New) |
| | ICCFXSLS.UPG | 000007D7 | — | **Y** (New) |
| Operating System Files | VRTX OS | — | 1.08 | N |
| | IFX | — | 1.11 | N |
| | TNX | — | 1.45 | N |
| **ISDN Optional Software**[4] | | | | |
| ISDN-NFAS | PRI.DWN | 008FEC7D | 6.48 | N |
| | PRIN.DWN | 00930CBD | 6.48 | N |
| ISDN-PRI | PRI.DWN | 008FEC7D | 6.48 | N |
| | PRIN.DWN | 00930CBD | 6.48 | N |
| NI-2 | PRI.DWN | 008FEC7D | 6.48 | N |
| | PRIN.DWN | 00930CBD | 6.48 | N |
| NTTPRI | NTTPRI.DWN | 008DF385 | 1.09 | N |
| NTDASS2 | NTDASS2.DWN | 009F44C9 | 3.08 | N |
| DPNSS | DPNSS.DWN | 00AB15B6 | 3.12 | N |
| NET5 | NET5.DWN | 008774E7 | 1.29 | N |
| **SNMP** | | | | |
| Management Information Base | VCO.MIB[5] | — | 2.2.2 | N |

1. The software no longer lists the individual executable file (.EXE) version numbers in the Software/Firmware Configuration screen. A "—" character in the File Version column signifies that the file version matches the system software release, for example, V5.1. If a version number appears in the File Version column for an .EXE file, it is strictly for reference purposes; it does not appear in the Software/Firmware Configuration screen.
2. The checksum values for .upg files (protocol files) are displayed by accessing the Display File screen. Go to Maintenance Menu > Disk Utilities > Display File, and type: **c:boot/<filename>**. The .upg file checksum value is displayed in the first four bytes of the second row.
3. GR-303 is not supported for customer use; it is reserved for Cisco Systems internal use only.
4. The optional software file version numbers are listed as they appear on the optional software diskette label.
5. The VCO.MIB file is not installed on the switch; it is intended for the SNMP host system.

# Limitations and Restrictions

Table 17 lists the design constraints which have been identified in VCO/4K system software and related software. Unless noted, these limitations and restrictions apply to all Cisco VCO/4K releases up to and including 5.1(3). Cisco Systems currently has no plans to address the following known design constraints.

***Table 17 Known Design Constraints up to and Including 5.1(3)***

| DDTs Issue | Description |
|---|---|
| — | Do not pull the active side NBC-3 on an operating production switch. If you pull an active NBC-3, it can impact traffic and the system will generate errors. If you suspect a problem with an NBC-3 card and you wish to remove it, first switch sides to make it the standby side. |
| — | The ICC and SPC automatically reset after downloads. After a download to the ICC or the SPC, the card resets itself in order for the new download to take effect. |
| — | The system does not allow the operational mode to be set back to standard once it has been set to extended. This is due to larger values which could be set in extended mode and are not valid in standard mode.<br><br>The mode is stored in one of the database files. If you must return to standard mode during testing, do so by reverting to the saved database files which were copied before you set the extended mode. |
| — | With Four Span E1 cards, resource groups can include channel 17, depending on whether the card spans are provisioned for CCS/31B or CAS. In CCS/31B mode, channel 17 is a bearer channel and can be added to a resource group. In CAS mode, channel 17 is used as the D-channel, and therefore, cannot be in a resource group.<br><br>After adding and configuring a Four Span E1 card, you can change the mode (CAS or CCS/31B) while the card is in a resource group. However, the system does not automatically remove channel 17 from the resource group when you change the mode from CCS/31B to CAS, or automatically add channel 17 to the resource group when you change the mode from CAS to CCS/31B. When you change the span from CCS/31B to CAS, all call attempts on channel 17 fail because channel 17 is no longer a bearer channel. When you change a span from CAS to CCS/31B mode, bandwidth is wasted.<br><br>**Resolution:** Verify that resource groups properly reflect the nature of channel 17 when changing the mode of a Four Span E1 card span between CCS and CAS.<br><br>**Note** The system administration console and SNMP do not prevent users from configuring bearer-channel signaling and timing parameters for channels that are not truly bearer channels. This applies to channel 17 for CAS mode and channel 1 for both modes. (Channel 1 is used for framing.) Users may find this misleading, but it is harmless. |
| CSCdm18135 | If a resource group contains SPC-CONF, the system hunts by means of the Rotary method only (regardless of whether you select Rotary or Cyclic in the Hunt Type field from the Resource Group Summary screen). |

*Table 17 Known Design Constraints up to and Including 5.1(3) (continued)*

| DDTs Issue | Description |
|---|---|
| CSCdm29344 | The single-span CPA card does not allow for assigning a REP token to the SIT *and* ISUP tone signaling events simultaneously in an answer supervision template.<br>The SIT (special information tone) and ISUP (integrated services digital network user part) tones have similar frequencies. If you include both of these signaling events in an answer supervision template, and you assign a REP token to both, the system always detects the SIT tone rather than the ISUP tone. Therefore, when you create an answer supervision template, assign the REP token to only one of these signaling events.<br>Since the ISUP tone is used for out-of-band signaling and the SIT tone is used for in-band signaling, the two tones can be separately enabled in the answer supervision template without affecting any application connected to the network. |
| CSCdm46309 | The Select Upgrade Log File screen default date is incorrect. Manually specify the month, day, and year of the log file you want to display or print. Refer to the *Cisco VCO/4K Software Installation Guide* for more information. |
| CSCdm75392 | CONNECT not sent to PRI/N card configured for NTTPRI. |
| CSCdp84909 | The VCO receives alarms FRM506/FRM531 under the rare circumstances of the SWI buffer not being allocated for sending messages to the NBC, during very high volume traffic. Loss of traffic may result. |
| CSCsf85214 | Spans that have been taken OOS before a reboot must be manually taken OOS after the reboot is complete. It is also recommended that the system is not run with cards defined and OOS; remove cards from the database. This workaround will improve overall performance. |

# Important Notes

- Live Upgrade
- ICC-T1 mixed protocols
- ICC-T1 ISDN span as primary timing source

# Live Upgrade

It is possible to use Live Upgrade to upgrade to system software 5.1(3); however, refer to the following two sections for version-specific workaround procedures.

## Live Upgrade Procedures from V4.2 and Higher

Complete the steps below to use Live Upgrade if you are using system software V4.2 and higher. This procedure is a workaround for DDTs issue CSCdp23217—Live Upgrade failure with a Process Event Handler.

**Caution** If you are using system software from V5.0.0.25 through V5.1.0.26, you must complete the steps below, and the steps in the following section, "Live Upgrade Procedures from V5.0.(0.25) through V5.1.(0.26) with SPCs," page 34, so that you do not lose all calls.

**Caution** Do not access the Software/Firmware Configuration screen at any time during Live Upgrade procedures. Failure to follow this instruction results in Live Upgrade failure. Proceed to Step 1 below; do not deviate from these procedures.

**Step 1** Boot the standby side of the switch.

**Step 2** Wait for file synchronization and perform a switchover.

**Step 3** Boot the new standby side; wait for file synchronization.

**Step 4** Follow the Live Upgrade procedures contained in the *Cisco VCO/4K Software Installation Guide*.

### Live Upgrade Procedures from V5.0.(0.25) through V5.1.(0.26) with SPCs

Complete the following steps to use Live Upgrade from system software V5.0.0.25 through V5.1.0.26. This procedure prevents DSP failure on switchover and is a workaround for DDTs issue CSCdm22671.

**Caution** Follow this workaround procedure when using Live Upgrade from V5.0.0.25 through V5.1.0.26. Failure to do so will result in the loss of all calls that require SPC resources. Use this procedure to minimize the volume of lost calls, limiting them to calls that are active on the SPC and that are taken out of service in order to re-flash.

**Step 1** Load the new SPC.DWN on the active side of the system.

**Step 2** Take one SPC out of service (OOS).

**Step 3** Place the same SPC in the active state.

**Step 4** Wait for the download to complete and all DSPs to become active on the SPC.

**Step 5** Repeat Step 2 through Step 4 for all other SPCs, one at a time.

**Step 6** Follow the Live Upgrade procedures contained in the *Cisco VCO/4K Software Installation Guide*.

## ICC-T1 Mixed Protocols

The ICC-T1 can be configured with many combinations of ISDN and non-ISDN protocols. Support is limited to a maximum of two protocols per ICC. Due to the vast number of combinations, Cisco Systems has not tested all possible span/protocol combinations.

Table 18 lists the mixed protocols tested by Cisco Systems. Additional combinations will be tested in the future.

*Table 18 ICC-T1 Mixed Protocols Tested by Cisco Systems*

| Test | Test Combination | | Result |
|---|---|---|---|
| | Group/Span | Group/Span | |
| 1 | ICC-T1, SF/AMI, E&M | ICC-T1, ESF/B8ZS, E&M | Pass |
| 2 | ICC-T1, ESF/B8ZS, Clear | ICC-T1, ESF/B8ZS, E&M | Pass |
| 3 | ICC-T1, ESF/B8ZS, Clear | ICC-T1, SF/AMI, E&M | Pass |
| 4 | ICC-ISDN, ESF/B8ZS, NTI | ICC-T1, ESF/B8ZS, E&M | Pass |
| 5 | ICC-ISDN, ESF/B8ZS, NTI | ICC-T1, SF/AMI, E&M | Pass |
| 6 | ICC-ISDN, ESF/B8ZS, NTI | ICC-T1, ESF/B8ZS, Clear | Pass |
| 7 | ICC-ISDN, ESF/B8ZS, 4ESS | ICC-T1, SF/AMI, E&M | Pass |
| 8 | ICC-ISDN, ESF/B8ZS, 4ESS | ICC-T1, ESF/B8ZS, Clear | Pass |
| 9 | ICC-ISDN, ESF/B8ZS, 4ESS | ICC-T1, SF/AMI, Clear | Pass |
| 10 | ICC-ISDN, ESF/B8ZS, NI2 | ICC-T1, SF/AMI, E&M | Pass |
| 11 | ICC-ISDN, NFAS | ICC-T1, ESF/B8ZS, E&M | Pass |
| 12 | ICC-T1, SF/AMI, FXOLS | ICC-T1, SF/AMI, FXOGS | Pass |
| 13 | ICC-T1, ESF/B8ZS, FXOLS | ICC-T1, SF/AMI, FXOGS | Pass |
| 14 | ICC-T1, ESF/B8ZS, FXOLS | ICC-T1, ESF/B8ZS, FXOLS | Pass |
| 15 | ICC-T1, SF/AMI, FXOLS | ICC-T1, ESF/B8ZS, FXOLS | Pass |

# ICC-T1 ISDN Span as Primary Timing Source

When an ICC-T1 ISDN span is configured as the primary timing source, the incoming clock on the ICC-T1 ISDN fails to synchronize if you are upgrading from an existing database—prior to system software version 5.1(1)—to a new database in VCO/4K system software version 5.1(3).

To utilize your existing ICC-T1 ISDN (NI2, 4ESS, 5ESS, NTI, NTT) span as the primary timing source, complete the following steps when you upgrade to 5.1(3).

**Note** You do not need to perform the following procedure if you are adding a new T1 span as the primary timing source to the database or if you are currently running system software V5.1(1), and higher.

**Note** When you upgrade your software to 5.1(3), Cisco Systems recommends that you perform this procedure on the ICC-T1 ISDN spans configured as the primary and secondary timing source.

**Step 1** Take the existing ICC-T1 ISDN span, configured as the primary timing source, out of service (OOS).

**Step 2** From the ICC ISDN Span Configuration screen, perform the following steps.

**a.** Change the REF CLOCK field parameter from **LOOP** to **1544**.

**b.** Press **Enter**.

c. Change the REF CLOCK field parameter from **1544** to **LOOP**.

d. Press **Enter**.

**Step 3** Return the ICC-T1 ISDN span (from Step 1) back in service.

# Caveats

This section contains open and resolved software caveats for this release of the Cisco VCO/4K. Caveats describe unexpected behavior or defects in Cisco VCO/4K system 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.

**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 product.

## Resolved Caveats

Table 19 lists the caveats issued against VCO/4K system software, and related optional software applications, that have been resolved in system software version 5.1(3).

***Table 19 Resolved Caveats for Release 5.1(3)***

| DDTS Issue | Description |
|---|---|
| CSCdm40053 | ISDN OOS_FE on bearers of the backup D-channel. |
| CSCdm74364 | ICC-E1 cannot change CRC to OFF with China UPG. |
| CSCdm94205 | SPC card does not know when DSPs are dead. |

*Table 19 Resolved Caveats for Release 5.1(3) (continued)*

| DDTS Issue | Description |
|---|---|
| CSCdp17892 | MF receivers on SPC die. |
| CSCdp23008 | Active to OOS span/ports with stable calls, no warning. |
| CSCdp42778 | Unable to switch to backup D-chan with ICC-4ESS. |
| CSCdp43759 | SSC and 4xT1 block each other's download and activation. |
| CSCdp46329 | ICC-T1 config as ESF & 8BZS goes from A to OOS to A. |
| CSCdp51650 | ICC NI2 NFAS fails during switchover from admin screen. |
| CSCdp51681 | ICC NTI NFAS fails during switchover from admin screen. |
| CSCdp61269 | $67 command returns with NSB 30 for 1KHz tone. |
| CSCdp68322 | Reset of B-channels on DMS, ICC OOS FE. |
| CSCdp71648 | $EA report (Setup) sent to Host on IPRC for ISDN. |
| CSCdp72948 | 4xE1 cards remain in CP_DISC after conference tear down. |
| CSCdp73453 | No Distinctive ring heard on feature enable. |
| CSCdp73460 | Host - Intermittancy / called party doesn't ring sometimes. |
| CSCdp77409 | IPRC download stops ICC download. |
| CSCdp81540 | ICC 5ESS NFAS fails during switchover from admin screen. |
| CSCdp84856 | SPC-MFCR2 diagnostics test fail. |
| CSCdp88610 | vco.mib file does not have its own version string. |
| CSCdp89288 | System core dump for invalid virtual port used by $49 command. |
| CSCdp89352 | $49 command to disconnect port causes crash. |
| CSCdp97610 | Per Port trace crashes VCO when NFAS port is traced. |
| CSCdr01332 | ICC-E1/NET5 in slot 21 stops all ICCs from downloading. |
| CSCdr01540 | Force 4xT1/E1 card download when the switch is Cold or Warm booted. |
| CSCdr01627 | ISDN port stuck in CP_OUTPULSE on D-channel switchover. |
| CSCdr04195 | Make SNMP parameters config available from admin. |
| CSCdr07223 | Memory leak (port of PRI/N). |
| CSCdr09289 | ISDN ports theoretically hand under load if msg corrupted. |
| CSCdr09309 | ISDN OOS FE on bearers of backup D-channel after switchover. |
| CSCdr09315 | SERVICE (OOS) msg was not sent for a RESTART on a port. |
| CSCdr09320 | SERVICE msgs sometimes not sent after D-chan switchover. |
| CSCdr11644 | ICC-T1 configured as FXSGS fails over 50% of calls. |
| CSCdr13664 | Code Error during simultaneous seizure test. |
| CSCdr15636 | icc.dwn does not support custom E1 .upg files. |
| CSCdr15689 | ICC stops processing NFAS load at ~27K BHC. |
| CSCdr16756 | NFAS-group does not come ACT when spans are moved. |
| CSCdr17603 | $67 multi-digit collection reports single digit incorrect. |
| CSCdr19952 | ICC spans configured for GR303 will not work if 1st span different. |

*Table 19 Resolved Caveats for Release 5.1(3) (continued)*

| DDTS Issue | Description |
|---|---|
| CSCdr34318 | VCO sends multiple $D9 reports when primary D-channel of NFAS group is pulled. |
| CSCdr62844 | T1 NFAS ports not shown offhook. |
| CSCsf52565 | IPRC does not report failure. |
| CSCsf85047 | The SSC downloads and goes into Maintenance. |
| CSCsf85097 | SSC shows adr 0 in card display. |
| CSCsf85251 | SPC does not clear all alarms. |

# Open Caveats

Table 20 describes possible unexpected behavior by Cisco VCO/4K release 5.1(3). Unless noted, these caveats apply to all Cisco VCO/4K system software releases up to and including 5.1(3).

*Table 20 Open Caveats up to and Including Release 5.1(3)*

| DDTs Issue | Description |
|---|---|
| CSCdp49217 | FTP hangs while running ftp scripts to the VCO. |
| CSCdp63988 | If Delete Directory fails then Show Directory will fail. |
| CSCdp64900 | The SPC-OUTP fails to work first time after defining in dbase. |
| CSCdp68345 | SNMP is not implemented for ISDN per-span overlap. |
| CSCdp71800 | ISDN timer T302 does not fire when overlap sending. |
| CSCdp71864 | The ISDN QSIG reports wrong state. |
| CSCdp79890 | VCO-Host socket disconnect under certain load conditions - HST013. |
| CSCdp84612 | ISDN ACCUMULATE mode returns the wrong SETUP ACKNOWLEDGE. |
| CSCdr05012 | Can only license 4088 ports instead of 4096. |
| CSCdr08845 | VCO returned incorrect STATUS message when NOTIFY was received. |
| CSCdr11642 | ICC-T1 does not support FXS-LS. |
| CSCdr19071 | Call is not disconnected when ICC-T1/NTT PRI carrier loss occurs. |
| CSCdr24372 | Loss of Connect Message from Host. |
| CSCdr24375 | SPC-CPA is not reporting DA (supervision). |
| CSCdr27105 | ICC-T1 reports FRM289/FRM290/FRM285 messages incorrectly. |
| CSCdr27189 | SPC-CPA/Generic does not report FAX Tone. |
| CSCdr38661 | VCO in A law ICCs have a static tone when listening to 4C0. |
| CSCdr40569 | No error message indicates not enough disk space available for live upgrade procedures to be performed.<br><br>Manually ensure that your system has 20MB of free disk space on each hard drive before starting live upgrade procedures. Access the system administration software and go to Maintenance/Disk Utilities/Show Disk Free Space. |
| CSCdr41455 | 6C to stop voice does not return T1 port to correct state. |
| CSCsf31137 | After a warm start, the system sends a ($DC) report to start call processing before IPRC prompt downloading is complete. |
| CSCsf41605 | If an error occurs in the disk operation when you use the Data Base Store or Data Base Retrieve commands (under File Utilities), no warning is displayed to indicate that all files may not have been copied correctly. |
| CSCsf41657 | If a SLIC ICT (incoming trunk) is telerouted to a SLIC OGT (outgoing trunk), and the SLIC OGT is ringing during a switchover, the SLIC OGT does not stop ringing when the SLIC ICT goes back on-hook. |

*Table 20 Open Caveats up to and Including Release 5.1(3) (continued)*

| DDTs Issue | Description |
|---|---|
| CSCsf41717 | Avoid using the Software/Firmware Configuration screen to view the contents of floppy diskettes (device A:). |
| CSCsf51888 | You must specify a resource type when you use the RELEASE inpulse rule token. If you do not specify a resource (IPRC, MRC, DRC, DTG, or CPA), the RELEASE token has no effect. |
| CSCsf51960 | If you use an Ethernet system host interface with up to four hosts and high loads, the system may fail. Higher loads may support even fewer host connections. |
| CSCsf51966 | One of the fields in Trunk Timing configuration is the Wink Send. For E1, this is the time period of the delayed dial signal. Tests have shown that this is about 60ms as opposed to the 30ms stated in the specifications. |
| CSCsf52155 | When the Four Span T1 is configured as FXO-LS, the card processes a WINK command after it seizes out. |
| CSCsf52242 | MF Digit ($D0) reports indicating garbled digits are not sent to the host when the inpulse rule performing the collection contains the reporting control tokens REP EACH or REP NEXT. |
| CSCsf52244 | When using the $67 command to append an odd number of digits to a field, which already contains an odd number of digits, digits may be lost. |
| CSCsf52245 | 67 command not rejected for digits over 40, but will only collect 40 digits. |
| CSCsf52246 | An Inpulse Rule Complete ($DD) report is generated when an inpulse rule aborts due to a CPA exhaust condition. |
| CSCsf52247 | You may experience a corrupted database if you inadvertently try to load a backup copy of an outdated database. The system does not detect the outdated database and does not automatically perform the database conversion. |
| CSCsf52300 | When the caller enters digits, a combination of the $67 command and inpulse rule is being processed. |
| CSCsf52355 | When a channel RESTART occurs, the system issues an ISDN Port Change of State ($EA) report. |
| CSCsf52581 | Aux1 alarms triggered by the hardware (power supply, fan unit, or ring voltage failure) are not displayed on the System Alarms Display screen. Therefore, remote users cannot determine if a major hardware alarm is set. |
| CSCsf62790 | A load seize on inpulse rules with record and speak tokens at 22 seizures causes IPRC cards to go OOS. |
| CSCsf62862 | A network status byte of $02 (Invalid command function ID) is returned by the Subrate Path Control ($65) command when the $65 command contains 82 destinations. The ISDN Port Control ($49) command also returns a network status byte of 02 if the $49 command contains between 258 and 261 bytes. |
| CSCsf62917 | There is a mismatch between the on-line and diskette disk utilities. |
| CSCsf62948 | Four Span T1 and Four Span E1 cards perceive the test patterns from a TTS-3 Analyzer as incoming seizures and generate FRM373 (Internal Message Length Error) and FRM102 (Card MSG) errors. |
| CSCsf62956 | The administration console intermittently gets re-initialized when the system reboots. This causes the keyboard type to reset to Numeric, instead of Application, which is required by the system software. |
| CSCsf62982 | Major Alarm Not Set on Loss of Hosts. |
| CSCsf63022 | Telerouter $D5 (Routing Action) reports do not appear in the system trace file, but they are sent to the host. |

*Table 20 Open Caveats up to and Including Release 5.1(3) (continued)*

| DDTs Issue | Description |
|---|---|
| CSCsf63117 | When you change the system host configuration, the system may generate the following error:<br>`RED44: Standby DB Update Error - Bad Record Count, File [filename]`<br>When this error occurs, the changes made on the active side do not get written to the standby side. |
| CSCsf63144 | During the broadcast download cycle, Four Span T1 and Four Span E1 cards intermittently generate an internal error code 1. |
| CSCsf63245 | If you attempt to update the gateway routing tables before you install and enable Ethernet, the gateway routing tables get corrupted. |
| CSCsf63261 | If you use SNMP to configure resource groups on redundant systems, the port.tbl file gets corrupted and ports are missing from the resource groups. |
| CSCsf63269 | The RELEASE DTG token does not work: The RELEASE outpulse rule token does not release the DTG/DTG-2 and causes the system to log an error during inpulse rule execution. |
| CSCsf63349 | Outgoing ports on Single Span T1 cards intermittently become stuck in CP_OUTPUL after incoming seizures. |
| CSCsf63398 | If you add or delete a tone generator card while another tone generator is outpulsing, the switch may be unable to do further outpulsing and may even fail. |
| CSCsf63502 | Problem with 4xT1 on switchover. |
| CSCsf63569 | If the outgoing Four Span T1 trunk resource groups are set to ROTARY search, the ports in the resource group get stuck in CP_WTFSUP. |
| CSCsf63570 | If you press the ABORT button on the system controller it has no effect if you have not installed the Ethernet option. |
| CSCsf73828 | If you delete a DTG from the database in an active system, outpulsing ceases. |
| CSCsf73902 | The system does not log an error indication when the switch fails. Earlier releases of the software logged an error indication to aid in determining the cause of failure. |
| CSCsf73909 | Following a warm reset, the 4xE1 cards display ACTIVE while downloading. |
| CSCsf73960 | The FTP quote command is inconsistent. The quote compress command requires a drive specification (c:), but the uncompress and the split commands cannot accept it. |
| CSCsf73961 | The FTP command, `quote join c:core1 c:core1.x??`, does not work. |
| CSCsf74440 | The Display Card Data screen does not record MVDC slips. |
| CSCsf84591 | The active and standby sides may not correctly reflect the license of the opposite side. |
| CSCsf84601 | Can’t delete large files from administration console. |
| CSCsf84608 | The prompt library is not working properly. |
| CSCsf84795 | The Programmable Trunk Configuration (non ICC or 4xT1/E1), Diagnostics Port Display, Call Progress Tone Monitor, and Routing Statistics Display screens support only two digits for inpulse and outpulse rules. |
| CSCsf84962 | All inpulse rules are aborting on port $47F. |
| CSCsf84981 | Error message may appear when you activate the SPC. |
| CSCsf85087 | The ICC-E1 does not work with the D+I card when the backplane law (System Features screen) and all ICC-E1 ports (ICC Programmable Trunk Configuration screen) are set to Mu-law. |
| CSCsf85092 | When your system is operating in extended mode, the “C” bit in the last fragment of the $83 report is reporting digits rather than a 0 (zero). This bit should report a zero indicating that this is the last fragment. |

*Table 20 Open Caveats up to and Including Release 5.1(3) (continued)*

| DDTs Issue | Description |
|---|---|
| CSCsf85137 | If a DSP SRM is not physically installed on the SPC, but the DSPs are configured in the database, the system displays the SPC with a status of Maintenance (M) rather than Out of Service (O). |
| CSCsf85166 | When the system is running in extended mode, the api_stat.c routine to format the rack, level, and slot in the $83 command from tokens does not work correctly. |

# Related Documentation

The following documents contain information that may be useful to system software 5.1(3) users.

- *VCO/4K Software Installation Guide*
- *VCO/4K System Administrator's Guide*
- *VCO/4K Card Technical Descriptions*
- Product supplements for optional software, including:
  - *VCO/4K Management Information Base (MIB) Reference Guide*
  - *VCO/4K Standard Programming Reference*
  - *VCO/4K Extended Programming Reference*
  - *VCO/4K ASIST Programming Reference*
  - *VCO/4K TeleRouter Reference Guide*
  - *VCO/4K ICC ISDN Supplement*
  - *VCO/4K Ethernet Supplement*
  - *VCO/4K Tone Plan Release Notes*
  - Applicable tone plan supplements

# Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com

- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

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# Documentation CD-ROM

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