System Requirements

Installation and Configuration

This chapter lists system requirements for running the Sweden country feature package on SDS and VCO platforms operating with system software V3.3 through 5.x. These requirements are categorized by hardware, firmware, and software. For any site-specific concerns, contact Cisco as described in the preface.

The Sweden country feature package consists of the following components:

- Digital Tone Generator (DTG) card or DTG-2 card
- Call Progress Analyzer (CPA)
- Multi-frequency Compelled R2 (MFCR2) card
- Diskette for the CPA

Note Service circuit cards must occupy only one resource group in the Resource Group Summary screen; further, different card types cannot share the same resource group. Use the CPA card if your system requires CPA service circuit functionality.

Hardware Requirements

Refer to the *Cisco VCO/4K Tone Plan Release Notes* for the A-law and Mu-law rules and timing rules governing the hardware configurations of cards with jumpers/DIPs, and the software configurations of cards without jumpers/DIPs.

Refer to the *Cisco VCO/4K Card Technical Descriptions* for each service circuit card and for each network card for jumper and DIP switch settings.

Firmware Requirements

Refer to the *Cisco VCO/4K Tone Plan Release Notes* for information regarding system firmware requirements particular to the Sweden country feature package.

Refer to your system release notes for step-by-step instructions to install firmware on either the DTG-2 mezzanine card or DTG card, and to install firmware on the MFCR2 card.

■ **Installation and Configuration**

Software Requirements

Refer to the *Cisco VCO/4K Tone Plan Release Notes* for information regarding system software requirements particular to the Sweden country feature package.

Call Progress Analyzer Download File

Your country feature package includes a 3.5-inch diskette containing the cpa.dwn file. Copy the file to your system's C:/BOOT directory if you are using system software that is at least V5.0, but not greater than V5.1 FSR00 PUN23. Copy the file to your system's C:/BOOT directory if you are using system software V5.1 FSR00 PUN24, and higher.

Refer to the *Cisco VCO/4K System Administrator's Guide* for step-by-step instructions to copy the above file to your system's C:/BOOT directory.

Note   Always wear a wrist strap when installing software and handling system components.

The file is now loaded onto your hard disk. Complete the installation by loading the files from the hard disk to the cards. The method of loading depends on whether or not it is for a new installation, or for an existing installation. For new installations, refer to the "Loading the Software onto Cards—New Installations" section on page 1-2; for exisiting installations, refer to the "Loading the Software onto Cards—Existing Installations" section on page 1-3. Refer to the *Cisco VCO/4K System Administrator's Guide* as you complete this installation procedure.

Loading the Software onto Cards—New Installations

To load the cpa.dwn file from the hard disk to cards in a new installation, follow these steps:

Step 1   Access the Card Maintenance screen from the Maintenance Menu screen, and add the CPA (the console displays this choice as Call Progress Analyzer) to the database by using the A command, if you have not already done so.

Step 2   Insert the CPA into the appropriate slot. The card automatically runs internal diagnostics.

Caution   Do not unseat or otherwise disturb the card while running internal diagnostics.

The CPA LEDs display the transition from off (all LEDs unlighted) to on (the red and yellow unlighted and the green lighted).

Step 3   Activate the card using the C command from the Card Maintenance screen. The card takes the download. The service circuit spans are active, as can be seen from the Card Maintenance screen.

Caution   Do not unseat or otherwise disturb the card while it is downloading.

Step 4   Verify the received FRM225, FRM226, FRM241, and FRM242 messages in your log file to ensure that the card has taken the download.

Step 5   Create a resource group for the CPA service circuits.

You have completed the software installation.

Loading the Software onto Cards—Existing Installations

To load the cpa.dwn file from the hard disk to cards in an existing installation, follow these steps.

⚠
Caution   This process disrupts in-progress calls and removes service circuits from operation for a few minutes.

Step 1   Access the Card Maintenance screen from the Maintenance Menu screen, and take the CPA card service circuits out of service (OOS), if you have not already done so.

Step 2   Unseat the CPA card, wait 15 seconds, then insert the card into its slot.

Step 3   Activate the CPA service circuits using the C command from the Card Maintenance screen.

⚠
Caution   Do not unseat or otherwise disturb the card while it is downloading.

Step 4   Verify the following received download messages in your log file to ensure that the card has taken the download:

- FRM225
- FRM226
- FRM241
- FRM242

You have completed the software installation.

Typical System Software Configurations

This section lists typical system software configurations used with the Sweden country feature package. For more information on how to use and configure the various system software screens and menus, refer to the *Cisco VCO/4K System Administrator's Guide*.

Database Administration

Special considerations pertain to the following Database Administration menus and screens.

Card Summary Menu

The Card Summary menu displays the status and port availability of E1, 4xE1, and ICC cards. To assign operating characteristics to E1 spans, access the Configuration screen for that card from the Card Summary menu.

> **Note** The term "E1 span" designates E1, 4xE1, and ICC cards with associated ICC-E1-I/O module.

Resource Group Summary Menu

You must define all CPA and MFCR2 service circuits in a single resource group in the Resource Group Summary menu and Resource Group Configuration screen. To optimize outgoing call system performance, group E1 span outgoing ports into one or more resource groups.

Inpulse Rule and Outpulse Rule Screen

Typical inpulse and outpulse rule tokens used to support R2 signaling are listed in Table 1-1.

Table 1-1   Typical Inpulse and Outpulse Rule Tokens Used to Support R2 Signaling

Inpulse Tokens		Outpulse Tokens	
REP NEXT	CLR CHAR1 [xx]	REP END	OP ANI
MFCR2	WINK ENAB	REP NEXT	OP MFCR2
DIGITS [xx]	IP ANI [xx]	OP FIELD [xx]	
END CHAR1 [xx]	IP FIELD [xx]	OP CAT [xx]	

For more information about these and other inpulse and outpulse rule tokens, refer to the *Cisco VCO/4K System Administrator's Guide*.

Answer Supervision Template Screen

Refer to the "Tone Detection" section on page 2-2 for information on the answer supervision template function.

System Configuration

Special considerations pertain to the following System Configuration screen.

System Features Screen

The Enable MFCR2 Supervised Clear feature flag supports automatic call release on outgoing ports in response to backward MFCR2 supervision tones. When the Enable MFCR2 Supervised Clear feature flag is set to **Y**, an outgoing port is released when a B2, B4, A4, or C4 backward tone is detected during R2 signaling. The system performs disconnect processing appropriate to the port, and generates an Outgoing Port Change of State ($DA) report that indicates a supervision error and specifies the backward tone. The $DA report is discussed in the *Cisco VCO/4K Standard Programming Reference* and the *Cisco VCO/4K Extended Programming Reference*.

> **Note** This feature flag enables/disables automatic call release on a system-wide basis. When the feature is enabled (set to **Y**), any outgoing port receiving the backward tones specified above is automatically released. If the feature flag is disabled (set to **N**), the outgoing port remains in SETUP unless out-of-band supervision or a host command changes the port state.

Maintenance

Special considerations pertain to the following Maintenance screen.

Card Maintenance Screen

Use the Card Maintenance screen to add, delete, and change the card/port status for MFCR2 and CPA service circuits. When an E1 span is added to the Card Maintenance screen, its span type is set to CAS/R2 by default.

For E1 spans set to CAS/R2, ports 1 and 17 of the card's 32 ports are reserved. Port 1 (Channel 0) carries the frame alignment pattern, remote alarm indication bit, and national-use bits. Port 17 (Channel 16) carries the multiframe alignment pattern, extra bits, and channel-associated signaling bits.

For 4xE1 and ICC cards, set the span type to CCS/31B from the Card Summary menu in order to use port 17 as a bearer port. Use E1-31B firmware on single span E1 cards in order to use port 17 as a bearer port.

Diagnostics

Special considerations pertain to the following Diagnostics screens.

Card Display Screen

The Card Display screen lists the operating status of E1 spans. Information on the Card Display screen varies according to card type.

Port Display Screen

The Port Display screen lists the processing states, rule processing, links, paths, and digit collection activity of E1 spans.

Test Port Card Screen

The Test Port Card screen tests individual E1 channels. A path is set up between three elements—the selected E1 channel(s), MFCR2 circuits, and a Digital Tone Generator (DTG) channel. The system compares the signals sent with the signals received by the MFCR2 and reports discrepancies. You can test all channels on E1 spans with one command. You can select the E1-CAS card for port card diagnostic tests. The E1 span enters a local loopback mode during the test and sends out an all 1s (ones) pattern.

Test Service Circuit Screen

The Test Service Circuit function tests MFCR2 cards.

Host Commands and Reports

The host commands and reports are documented in the *Cisco VCO/4K Standard Programming Reference* and the *Cisco VCO/4K Extended Programming Reference*.