Combined Release Notes for Cisco NextPort SPE Firmware Version 7.x.y

April 26, 2003

These release notes contain Cisco NextPort dial feature card (DFC) firmware version code information.

This document contains the following sections:

NextPort SPE Firmware and Dial Feature Card Overview

NextPort SPE firmware is software that drives the DSP portion of the Cisco NextPort dial feature cards (DFCs). NextPort firmware includes NextPort SPE firmware and Cisco IOS software code that together drive the NextPort DFC cards.

You cannot load new NextPort firmware without getting a new Cisco IOS software release that includes the new code. However, you can load just the NextPort SPE firmware.

NextPort SPE firmware runs on the NextPort DFC60, DFC108, and UPC324 DFCs on the Cisco AS5350, Cisco AS5400, Cisco AS5800, and Cisco AS5850. The ports on these modules can support both modem, voice, fax, and digital services and can be aggregated at any of the following levels:

- Slot level of the NextPort module
- SPE level within the NextPort module

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- Individual port level

For more information, refer to the "Related Links" section on page 9.

NextPort SPE Firmware Features

Table 1 contains feature content for Version 7.x.y. Each firmware version contains fixes that have been resolved in earlier versions.

Table 1 Cisco NextPort Features

NextPort SPE Firmware Version	New NextPort SPE Firmware Features
7.18.3	Maintenance release. There are no new features. See the "Caveats for Release 7.18.3" section on page 5. This version contains fixes from NextPort Firmware Release 7.17. Refer to the "Caveats for Release 7.17" section on page -4 of the *Combined Release Notes for Cisco NextPort SPE Firmware Version 7.xx* document on Cisco.com.

Table 1 Cisco NextPort Features (continued)

NextPort SPE Firmware Version	New NextPort SPE Firmware Features
7.16.2	Maintenance release. There are no new features. See the "Caveats for Release 7.16.2" section on page 6. This version contains fixes from NextPort Firmware Release 7.16. Refer to the "Caveats for Release 7.16" section on page -5 of the *Combined Release Notes for Cisco NextPort SPE Firmware Version 7.xx* document on Cisco.com.

Table 1 Cisco NextPort Features (continued)

NextPort SPE Firmware Version	New NextPort SPE Firmware Features
7.15.3	Initial 7.x.y release. See the "Caveats for Release 7.15.3" section on page 7. **Voice Codecs** • G.711, G.723.1 (5.3K and 6.3K), G.729a, G.729ab, G.726 (16K,24K,32K,40K[1]), GSMFR, G.Clear, G.728 **DSP Voice Features** • G.168 echo cancellation—Up to 128 ms tail length • Transparent transcoding between A-law and mu-law encoding • Voice activity detection, silence suppression, comfort noise generation, fixed and adaptive jitter buffering • Modem passthrough • Call progress tone detection and generation—Dial tone, busy, ring-back, congestion, and re-order tones, with local country variants • DTMF, MF, DTMF relay using NTE, DTMF relay RFC-2833 **Voice and Fax Signaling Protocols** • H.323v2, T.37, T.38 real-time fax relay at modulations V.17, V.29 and V.27ter • Fax out (transmission) Group 3, standards EIA 2388 Class 2 and EIA 592 • Class 2.0, at modulations V.33, V.17, V.29, V.27ter, and V.21 • No Circuit Tone Generation and Detection • Large packet support for IVR • SR2275-Type 105 test tone[1] **ISDN Protocols** • Sync mode PPP and V.110 at rates up to 38400 bps • Async V.120 at speeds of 64K and 56K for T1 and E1 **Modem Modulations** • V.92 Modem on Hold and Quick Connect • V.90 standard supporting rates of 56000 to 28000 in 1333 bps increments • K56Flex at 56,000 to 32,000 in 2000 bps increments • ITU-T V.34 Annex 12 at 33,600 and 31,200 bps • V.32bis at 14400, 12000, 9600, 7200, 4800; V.32 at 9600, 4800; V.22bis at 2400, 1200; V.21 at 300; Bell 103 at 300; V.22 at 1200; V.23 at 1200/75 **Modem Protocols** • ITU-T V.44 • ITU-T V.42 (including MNP 2-4 and LAPM) error correction • ITU-T V.42bis (1000 nodes) and Microcom Networking Protocol (MNP) 5 data compression • Async-mode PPP **Wireless Protocols** • V.110

1. This feature is supported by NextPort firmware but not by Cisco IOS Software.

New With SPE Firmware

This version of the NextPort SPE Firmware release notes introduces a new phase and version of SPE code.

Caveats for Release 7.18.3

This section describes known problems and resolved caveats with Cisco NextPort Firmware and Cisco NextPort SPE firmware.

NextPort Firmware Caveats

Resolved Caveats for NextPort Firmware Version 7.18.3

- CSCdy62906—G.726-40 mask conflicts with fax relay
- CSCdy33412—Service ID masks need to be added for G.clear and G.726

Unresolved Caveats for NextPort Firmware Version 7.18.3

- CSCdv85833—Need to implement G.726 Asynchronous Payload types
- CSCdx71816—GSMFR SID frames not compatible between Cisco AS5400 and Cisco AS5300
- CSCdy62168—7004 session abort with spe link-info enabled
- CSCdv67096—Bogus S-register values for voice service
- CSCdv77113—No branch dynamic LI notifications when LI interval set
- CSCdw54654—Mail command first ACKd then NACKd

NextPort SPE Firmware Caveats

Resolved Caveats for NextPort SPE Firmware Version 7.18.3

- CSCdy44115—Dial modifiers lower case x and w stripped out of dial string
- CSCdy20126—R2 active gets delay causing modem to be deactivated
- CSCdy72024—Addition of echo canceller (EC) comfort noise generation
- CSCdy72043—Echo canceller signal decay constants adjusted to the filter length
- CSCdy72061—Double talk hangover counter resets immediately following near-end talker energy
- CSCdz07240—Double detection of DTMF tones with several phones
- CSCdx61444—Cisco AS5350 and Cisco AS5400 clipping speech at double talk condition

Unresolved Caveats for NextPort SPE Firmware Version 7.18.3

- CSCdy40314—Setting playout delay max to 20ms cause end-to-end delay higher
- CSCdt83157—7005 session abort during 2.3.0.103 call-drop regression testing
- CSCdx00509—T.38 Fax Relay on Cisco AS5400 to Cisco AS5300 fails random packet loss
- CSCdx63996—Jitter degradation is greater than 10% for g723ar53 codec in 122-10.6.T versus XB2 image
- CSCdx71846—G.726 interoperability with non-Cisco GW shows misordered 4 bit samples in payload
- CSCdy02866—Cisco AS5850 MGCP: off-net to on-net fax sends blank pages
- CSCdy23467—Setting minimum, initiation, maximum playout parameters the same causes 20ms extra delay
- CSCdy29052—E2E delay does not return to initial value after background calls
- CSCdy33137—SPE crashed: %NP_SSM-3-RUNTIME_ERROR: running FPT stress 20 ms red.
- CSCdy37013— S54=64 (parity over echo cancellation or EC) makes EC fail for dialout calls
- CSCdy60370—Disable DTMF in voice coding puts E2E delay longer
- CSCdz13053—DTMF digits sent from IP phone are reported invalid
- CSCdz15333—PT13/19 mismatch between Cisco AS5400 and Cisco AS5300 for generic SID frames
- CSCdz15984—SPE crash with command 0XF103 with FPT MGCP stress

Caveats for Release 7.16.2

This section describes known problems with NextPort Firmware and NextPort SPE firmware. If a workaround is not provided, a solution is being developed.

NextPort Firmware Caveats

Resolved Caveats for NextPort Firmware Version 7.16.2

No known caveats have been resolved.

Unresolved Caveats for NextPort Firmware Version 7.16.2

- CSCdv67096—Bogus S-register values for voice service
- CSCdv77113—No branch dynamic LI notifications when LI interval set
- CSCdv85833—Need to implement G.726 asynchronous payload types
- CSCdw54654—Mail command first ACKd then NACKd
- CSCdy33412—Service ID masks need to be added for G.clear and G.726
- CSCdx71816—GSMFR SID frames not compatible between Cisco AS5400 and Cisco AS5300

NextPort SPE Firmware Caveats

Resolved Caveats for NextPort SPE Firmware Version 7.16.2

- CSCdy40076—Non-redundancy modem passthrough between Cisco AS5400 and Cisco AS5300 fails
- CSCdx70796—Cisco AS5400 initiates retrain and speedshift seconds after STEADY_STATE
- CSCdx72925—Session runtime errors seen collecting DTMF digits with GSMFR
- CSCdx87165—10-15 percent transponder COT failure on U-port boxes
- CSCdy37902—Problem with G711+NTE fork

Unresolved Caveats for NextPort SPE Firmware Version 7.16.2

- CSCdx00509—T.38 fax relay Cisco AS5400 to Cisco AS5300 fails random packet loss
- CSCdx63996—Jitter degradation is greater than 10% for g723ar53 codec in 122-10.6.T versus XB2 image
- CSCdx71846—G.726 interoperability with non-Cisco gateway (GW) shows misordered 4 bit samples in payload
- CSCdy02866—Cisco AS5850 MGCP: off-net to on-net fax sends blank pages
- CSCdy23467—Setting minimum, initiation, maximum playout parameters the same causes 20ms extra delay
- CSCdy29052—E2E delay does not return to initial value after background calls
- CSCdy33137—SPE crashed: %NP_SSM-3-RUNTIME_ERROR: running FPT stress 20ms red.
- CSCdy37013—S54=64 parity over echo canceller (EC) makes EC fail for dialout calls
- CSCdy40314—Setting playout max to 20ms causes end-end delay higher
- CSCdy44115—Dial modifiers lower case x and w stripped out of dial string

Caveats for Release 7.15.3

This section describes known problems with NextPort Firmware and NextPort SPE firmware. If a workaround is not provided, a solution is being developed.

NextPort Firmware Caveats

Resolved Caveats for NextPort Firmware Version 7.15.3

- CSCdx63895—Customer requests output attentuation range of 14 to -14
- CSCdx32201—i960 code should only free Tx message after message has been processed

Unresolved Caveats for NextPort Firmware Version 7.15.3

- CSCdx71816—GSMFR SID frames not compatible between Cisco AS5400 and Cisco AS5300
- CSCdv85833—Need to implement G.726 asynchronous payload types

NextPort SPE Firmware Caveats

Resolved Caveats for NextPort SPE Firmware Version 7.15.3

- CSCdv63039—Quick switch causes media branch termination
- CSCdx56937—T.38 failure when MPT redundancy is on
- CSCdw92961—8031 error observed in main branch removal attempt
- CSCdx56937—T38 call fails if modem passthrough configured with redundancy only

Unresolved Caveats for NextPort SPE Firmware Version 7.15.3

- CSCdw17295—A client modem fails CSR criteria for modem passthrough
- CSCdw17322—Modem passthrough TTC is 5 to 12 seconds longer than for regular modem call
- CSCdx00509—T.38 fax relay Cisco AS5400 to Cisco AS5300 fails random packet loss
- CSCdx70796—Cisco AS5400 initiates retrain and speedshift seconds after STEADY_STATE
- CSCdx71846—G.726 interoperability with non-Cisco gateway (GW) shows misordered 4 bit samples in payload
- CSCdx72925—Session runtime errors seen collecting DTMF digits with GSMFR

Finding Software Bugs

If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any Cisco software release. You can reach Bug Navigator II on CCO at
Service & Support: Online Technical Support: Software Bug Toolkit
Or at
http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

Downloading NextPort SPE Firmware

NextPort SPE firmware is downloaded using the **spe** command. The **spe** command allows firmware to be downloaded to the service processing element, or SPE.

SPE Download Tasks

To download modem firmware, follow these steps, beginning by entering the **spe** command:

Step 1 Enter the **spe** command and subcommands, one configuration command per line:

```
Router# configure terminal
Router(config)# spe slot/spe_begin slot/spe_end
Router(config-spe)# firmware location system:/ucode/np_spe_firmware1
Router(config-spe)# ^Z
```

For example, the following display shows a Cisco AS5400 SPE download to all modems in Slot 1 (that is, all modems on a feature card containing 18 6-port modem modules). The modem code resides in the Flash memory, and the modem code filename is dfc108-firmware.1.1.6.81.

```
Router(config)# spe 1/0 1/17
Router(config-spe)# firmware location flash:dfc108-firmware.1.1.6.81
```

Step 2 Copy the configuration from running RAM into NVRAM:

```
Router# copy running-config startup-config
```

Download occurs when the modems become available and shows the SPE firmware upgrade option defined (default: busyout). The **spe** command generates NVRAM modem download and configuration file entries.

Note If the configuration is not saved as described above, download of the firmware specified with the **spe** command will not occur after the next reboot.

For detailed information on the **spe** command, refer to the Cisco document, *SPE and Firmware Download Enhancements*.

Related Links

For further information about Cisco NextPort Firmware and Cisco IOS Software, refer to the following related sources:

- *AT Command Set and Register Summary for NextPort Universal Digital Signal Processor Platforms*
- Caveats, Cisco IOS Release 12.2.
- Cisco AS5350 documentation index
- Cisco AS5400 documentation index
- Cisco AS5800 documentation index
- Cisco AS5850 documentation index

- Configuration Guides and Command References, Cisco IOS Release 12.2
- *Managing Port Services on the Cisco AS5400 Universal Access Server*
- *NextPort SPE Firmware Release Notes index*

Note You must have an account with Cisco.com to access the following link.

- Software Download
- *SPE and Firmware Download Enhancements*

Obtaining Documentation

These sections explain how to obtain documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at this URL:

http://www.cisco.com

Translated documentation is available at this URL:

http://www.cisco.com/public/countries_languages.shtml

Documentation CD-ROM

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

Ordering Documentation

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

  http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. In the Cisco Documentation home page, click the **Fax** or **Email** option in the "Leave Feedback" section at the bottom of the page.

You can e-mail your comments to bug-doc@cisco.com.

You can submit your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

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

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from online tools by using the Cisco Technical Assistance Center (TAC) Web Site. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC Web Site.

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http://www.cisco.com

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC Web Site and the Cisco TAC Escalation Center.

Cisco TAC inquiries are categorized according to the urgency of the issue:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

The Cisco TAC resource that you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

Cisco TAC Web Site

You can use the Cisco TAC Web Site to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC Web Site, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

http://www.cisco.com/register/

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC Web Site, you can open a case online by using the TAC Case Open tool at this URL:

http://www.cisco.com/tac/caseopen

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

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