



# V.92 Quick Connect for Cisco AS5350, Cisco AS5400, and Cisco AS5850 Universal Gateways and Cisco AS5800 Universal Access Servers

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## Feature History

Release	Modification
12.2(2)XA1 and 2	This feature was introduced on Cisco AS5350 and Cisco AS5400 universal gateways running NextPort firmware.
12.2(2)XB1 and 2	This feature was supported with Cisco IOS Software Release 12.2(2)XB1 and 2.
12.2(11)T	This feature was integrated into Cisco IOS Release 12.2(11)T and support was added for the Cisco AS5350, Cisco AS5400, Cisco AS5800, and Cisco AS5850 platforms.

This feature module introduces the V.92 International Telecommunication Union Telecommunication Standardization Sector (ITU-T) standard Quick Connect (QC) feature on NextPort/DFC108-bearing platforms using Cisco IOS Software Releases 12.2(2)XA, 12.2(2)XB, and 12.2(11)T.

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# Feature Overview

## V.92

To remain current with industry needs, the ITU-T V.90 modem standard recommendations have been enhanced. The new standard, V.92, meets the need for a digital modem and analog modem pair on the Public Switched Telephone Network (PSTN). V.92 improves the upstream data signaling rate and adds new features that enhance modem usability. These new modem protocols and standards are implemented at the modem level.

This feature module introduces the V.92 [Quick Connect](#) feature on Cisco AS5350, Cisco AS5400, and Cisco AS5850 universal gateways and Cisco AS5800 universal access servers.

**Note**

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The other feature introduced with the new V.92 standard is V.92 Modem on Hold, which is documented in the *V.92 Modem on Hold for Cisco AS5350, Cisco AS5400, and Cisco AS5850 Universal Gateways and Cisco AS5800 Universal Access Servers* feature module. V.92 Modem On Hold and V.92 Quick Connect can be enabled independently of each other.

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V.92 provides new modem protocols and standards that are implemented at the modem level.

NextPort firmware provides V.92 capabilities bundled with existing NextPort features. The NextPort Dial Feature Card (DFC-108NP) is responsible for the ITU implementation of V.92 and the collection of statistics related to the new features, including the new modem states that occur with the additional negotiations for V.92. The statistics are collected by the DFC but are passed to and stored in Cisco IOS software. Cisco IOS software is responsible for controlling the features and displaying the new statistics.

The Cisco AS5800 uses the NextPort high density dial termination card to implement this feature. Both voice and dial technologies are supported when used in a Cisco 5850 universal gateway.

**Note**

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V.92 and V.44 are packaged together with Cisco IOS software. For more information about V.44, refer to the *V.44 LZJH Compression for Cisco AS5350, Cisco AS5400, and Cisco AS5850 Universal Gateways and Cisco AS5800 Universal Access Server* feature module.

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## Quick Connect

V.92 Quick Connect speeds up the client-to-server startup negotiation, reducing the overall connect time up to 30 percent. The client modem retains line condition information and characteristics of the connection to the Internet service provider (ISP), which reduces connect time by avoiding some of the initial signal handshaking.

Disconnect reasons and modem states and statistics (link information) have been added or modified to support V.92 Quick Connect. [Table 1](#) lists the new V.92 Quick Connect states, and [Table 2](#) lists the new link information parameters.

**Table 1 Quick Connect States**

Name	Description
Quick Connect	Phase 1 V.92 Quick Connect is being negotiated.
Steady QC	V.92 Quick Connect is being used to reconnect after a V.92 Modem on Hold exchange.
V.8bis Exchange	A V.8bis exchange is taking place.
Ranging	A full phase 2 trainup is taking place.
Ranging Short	A shortened phase 2, using V.92 Quick Connect, is taking place.
Half Duplex Train	Adaptive equalizer training has begun.

**Table 2 Quick Connect Link Information Parameters**

Name	Value
QC Exchange	0: No QC 1: QC Requested 2: QC Short Train Fail 3: QC Full Train Success 4: QC Short Train Success

## AT Commands and S-Registers

V.92 Quick Connect is enabled by default and is controlled with standard **AT** commands and S-registers. S29 is used to enable V.92 sequence detection and S63 is used to enable Quick Connect negotiation, both of which are enabled by default. The S63 S-register controls the feature through the ANSpcm signal. You can choose the power level of the ANSpcm signal, which defaults to -12dBm (the transmit power level for the United States). The **ATS $n$ = $v$**  and **ATS $n$ ? AT** commands are used to configure V.92 Quick Connect on NextPort platforms.

To disable V.92 Quick Connect or to set a different ANSpcm value, you can use a modemcap (for example, v92\_v44:MSC=s62=8s63=0s21=15s29=12), or you can set the S29 register to any number other than 12. [Table 3](#) lists the S-registers used to enable and disable the V.92 Quick Connect feature.

**Table 3** Configuring V.92 Quick Connect with S-Registers

Name	Register	Index	Default	Description
V.92 QC Configuration	S63	NextPort 0x8040	0x3 QC Enabled ANSpcm Level -12 dBm	Bit 0: QC Enabled 0: Disabled 1: Enabled Bits 1–2 ANSpcm Level 00: -9 dBm 01: -12 dBm 10: -15 dBm 11: -18 dBm
	S29	NextPort 0x8013	12 (V.92 enabled)	0 = V.34 Automode, without V.32ter 1 = V.34 Automode, without V.32ter 2 = V.32ter Automode 3 = V.32bis Automode 4 = V22bis Automode 5 = K56Flex 6 = V.90 Automode (V.92 builds only) 7 = (reserved) 8 = V.110 9 = (reserved) 10 = V.120 11 = Clear Channel 12 = V.92 Automode (V.92 builds only)



**Note**

If the V.92 Quick Connect feature is enabled using S29=12, and QC is disabled using S63=0, then the QC Exchange Link Information Parameter is updated to show if QC was requested. However, completely disabling the feature by setting S29 to a value other than 12 disables the reporting of QC requests.

For detailed information about the **AT** commands and S-registers that are used to configure the V.92 Quick Connect feature supported by NextPort services, refer to the AT Command Set and Register Summary for NextPort Platforms.

## Benefits

### Improved Port Use

This feature improves ISP port usage because of the reduction in connect time.

### Standard Modem Feature

V.92 is a standard modem feature that is offered as a no-cost upgrade to the installed system.

## Restrictions

- Minimum of 32K memory is needed for bundled NextPort firmware.
- Additional data space is needed on the modem module (refer to NextPort documentation).
- Configuration of these features using S-registers is carried out by using modemcaps (**AT** commands). Cisco IOS software does not check these values to guarantee that they are valid.
- Cisco IOS software is packaged as multiple program image types with varying capabilities. Because not all modem interfaces support Quick Connect and because images may be built to support specific modem types, not all software images contain functions to control Quick Connect. In addition, the modems that do support Quick Connect implement their control functions differently. Therefore, registry functions are used to interface between local authorization and Quick Connect control for modems.

## Related Features and Technologies

- V.92 Modem on Hold
- V.44 LZJH data compression service
- Mindspeed CSMv6 hardware solution

## Related Documents

- *AT Command Set and Register Summary for NextPort Platforms*
- Cisco AS5350 documentation index
- Cisco AS5400 documentation index
- Cisco AS5800 documentation index
- Cisco AS5850 documentation index
- Cisco AS5800 Universal Access Server Release Notes
- Cisco IOS Release 12.2 Master Indexes
- *Comparing NextPort SPE Commands to MICA Modem Commands*
- *Managing Port Services on the Cisco AS5400 Universal Gateway*
- *Managing and Troubleshooting the NextPort Dial Feature Card*
- New Features in Release 12.2(2)XB
- *NextPort Port Service Management for the Cisco AS5400 Universal Gateways*
- *Release Notes for Cisco AS5350 Universal Gateways for Cisco IOS Release 12.2 XA*
- *Release Notes for Cisco AS5350 and AS5350HPX Universal Gateways for Cisco IOS Release 12.2 XB*
- *SPE and Firmware Download Enhancements*
- *V.44 LZJH Compression for Cisco AS5350 and Cisco AS5400 Universal Gateways*
- *V.92 Modem on Hold for Cisco AS5350 and Cisco AS5400 Universal Gateways*

## Supported Platforms

- Cisco AS5350
- Cisco AS5400
- Cisco AS5800
- Cisco AS5850

**Table 4** Cisco IOS Release and Platform Support for this Feature

Platform	12.2(2)XA	12.2(2)XB	12.2(2)XB1	12.2(11)T
Cisco AS5350	X	X	X	X
Cisco AS5400	X	X	X	X
Cisco AS5800	Not supported	Not supported	X	X
Cisco AS5850	Not supported	Not supported	X	X

### Determining Platform Support Through Cisco Feature Navigator

Cisco IOS software is packaged in feature sets that support specific platforms. To get updated information regarding platform support for this feature, access Cisco Feature Navigator. Cisco Feature Navigator dynamically updates the list of supported platforms as new platform support is added for the feature.

Cisco Feature Navigator is a web-based tool that enables you to determine which Cisco IOS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or release. Under the release section, you can compare releases side by side to display both the features unique to each software release and the features in common.

To access Cisco Feature Navigator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to [cco-locksmith@cisco.com](mailto:cco-locksmith@cisco.com). An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions at <http://www.cisco.com/register>.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page at the following URL:

<http://www.cisco.com/go/fn>

#### Availability of Cisco IOS Software Images

Platform support for particular Cisco IOS software releases is dependent on the availability of the software images for those platforms. Software images for some platforms may be deferred, delayed, or changed without prior notice. For updated information about platform support and availability of software images for each Cisco IOS software release, refer to the online release notes or, if supported, Cisco Feature Navigator.

## Supported Standards, MIBs, and RFCs

#### Standards

- V.44
- V.92 Modem on Hold
- V.92 Quick Connect

#### MIBs

- CISCO-MODEM-MGMT-MIB
- CISCO-CALL-TRACKER-MODEM-MIB

To obtain lists of supported MIBs by platform and Cisco IOS release, and to download MIB modules, go to the Cisco MIB web site on Cisco.com at the following URL

<http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml>

#### RFCs

No new or changed RFCs are supported by this feature.

## Prerequisites

- Cisco IOS Release 12.2(2)XA, 12.2(2)XB, or 12.2(11)T
- Minimum of 32K memory needed for bundled Cisco NextPort firmware
- Additional data space needed on the modem module (refer to NextPort documentation)
- Basic configuration of the Cisco AS5350, Cisco AS5400, Cisco AS5850, or Cisco AS5800
- Upgraded modem firmware
- NextPort DFC installed

## Configuration Tasks

None

For information about configuration, refer to the following documents:

- *V.92 Modem on Hold for Cisco AS5350, Cisco AS5400, and Cisco AS5850 Universal Gateways and Cisco AS5800 Universal Access Servers*
- *V.44 LZJH Compression for Cisco AS5350, Cisco AS5400, Cisco AS5850 Universal Gateways and Cisco AS5800 Universal Access Servers*

## Configuration Examples

None

## Command Reference

None

# Glossary

**CLI**—command-line interface.

**CSMv6**—Mindspeed modem hardware solution.

**DFC**—dial feature card.

**DSP**—Digital Signal Processor. Microprocessor on which the modulation/demodulation process is carried out.

**ISP**—Internet service provider.

**ITU-T**—International Telecommunication Union Telecommunication Standardization Sector.

**LZJH**—Lempel-Ziv-Jeff-Heath data compression algorithm used in V.44.

**MOH**—Modem on Hold functionality specified in V.92.

**NextPort**—Device driver architecture for Cisco IOS software that supports the NextPort hardware and software interfaces. Supports the universal port concept.

**PCM**—pulse code modulation.

**PSTN**—Public Switched Telephone Network.

**QC**—Quick Connect functionality specified in V.92.

**universal port**—Concept of a single device that can terminate one digital signaling level zero (DS-0) with a data modem, fax modem, ISDN, or voice solution.

**V.44**—ITU modem standard for LZJH data compression algorithm.

**V.92**—ITU modem standard that contains Quick Connect and Modem On Hold.

