



Doc. No. 78-1280-07

# Protocol Translator Release Notes for Software Release 9.21

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**January 23, 1995**

These release notes describe the features, modifications, and caveats for Software Release 9.21, up to and including Release 9.21(7). Refer to the *Protocol Translator Configuration Guide* and *Protocol Translator Command Reference* publications for complete protocol translator documentation for Release 9.21.

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**Note** Release 9.21(7) is the last maintenance release for Release 9.21. Maintenance customers will continue to receive phone support from Customer Engineering, but software fixes will be made only to IOS Release 10.0 and higher releases. As of January 23, 1995, IOS Release 10.0(7) or 10.2(2) is the preferred upgrade path for a Release 9.21 user.

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## Introduction

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## Platform Support

Software Release 9.21 is supported on the following platforms:

- IGS/R, IGS/L, and IGS/TR. Note that Release 9.21(3) is the last release of the 9.21 software that will support the IGS.
- Cisco 3000 series
- CPT
- ASM-CS platforms—ASM/3-CS and ASM/4-CS
- 500-CS platforms—508-CS and 516-CS

## Memory Requirements

In order for Cisco 3000 series and IGS routers to take advantage of the Release 9.21 features, you must upgrade the code or main system memory as listed in Table 1.

**Table 1 Release 9.21 Memory Requirements**

Router	Required Code Memory	Required Main Memory	Release 9.21 Runs from ...
IGS/L and IGS/R	4 MB ROM	4 MB RAM	ROM
IGS/TR	4 MB ROM	4 MB RAM	ROM
Cisco 3101	4 MB Flash	4 MB RAM	Flash
	4 MB Flash	16 MB RAM	RAM
Cisco 3102	4 MB Flash	4 MB RAM	Flash
	4 MB Flash	16 MB RAM	RAM
Cisco 3103	4 MB Flash	4 MB RAM	Flash
	4 MB Flash	16 MB RAM	RAM
Cisco 3104	4 MB Flash	4 MB RAM	Flash
	4 MB Flash	16 MB RAM	RAM
Cisco 3202 <sup>1</sup>	2 MB Flash	16 MB RAM	ROM
Cisco 3204	4 MB Flash	4 MB RAM	Flash
	4 MB Flash	16 MB RAM	RAM
Cisco 4000	4 MB Flash	16 MB RAM	RAM
Cisco 4000M	4 MB Flash	8 MB RAM	RAM

1. The Cisco 3202 image can be booted only from the network. It cannot be loaded from Flash.

## Upgrading System Images

If you are upgrading your EPROMs to the 9.21(3) system image, note that the system image is now provided on eight 2-Mbit EPROMs. Previously, it was provided on four 4-Mbit EPROMs. You install the eight EPROMs into sockets U41 through U48 on the CSC/3 or CSC/4 board.

## Software Features in Release 9.21(1)

This section describes new features and enhancements made to the initial release of the Release 9.21 protocol translator software.

### LAT

The following features have been added to Cisco's LAT software:

- Sending of periodic broadcast service announcements.
- Controlling the maximum number of sessions multiplexed onto a single LAT virtual circuit.
- Controlling the number of receive buffers negotiated by a LAT host.
- Controlling the number of receive buffers negotiated by a LAT server.

### TN3270

The following feature has been added to Cisco's TN3270 software:

- Two-way binding, or character mapping, between EBCDIC and ASCII characters.

### Protocol Translation

Two new options have been added to the **translate** command: **stream** and **printer**. The **stream** option performs stream processing, which enables a raw TCP stream with no Telnet control sequences. The **printer** option supports LAT and X.25 printing over a TCP network among multiple sites.

### Important Notes

This section describes warnings and cautions about using the Release 9.21 software. The information in this section supplements that given in the section "Release 9.21(7) Caveats."

### Virtual Terminals

Previously, protocol translation systems could have 64 or 100 virtual terminal sessions. New systems now have only 5. To configure the system for 100 possible virtual terminal sessions, use the following configuration command:

```
line vty 99
```

To configure the 63 possible virtual terminal sessions on protocol translation platforms (IGS, Cisco 2500 series, Cisco 3000 series, and Cisco 4000) when using concurrent routing, use the following configuration command:

```
line vty 63
```

Note that on Cisco 2500 series, Cisco 3000 series, and Cisco 4000 platforms, IP routing is on by default, so the default maximum number of VTYs is 63. To have the platform be a dedicated protocol translator, disable IP routing to allow a maximum of 100 VTYs.

Use the new **no** form of the **line vty** command, **no line vty number**, to delete the virtual terminal specified by the argument *number* and all virtual terminals with higher numbers. You should delete virtual terminals only on an idle system. You cannot delete virtual terminals that are in use. Also, in order to prevent the system from becoming unreachable by the network, you cannot delete the initial five virtual terminals.

## Release 9.21(7) Caveats

There are no serious caveats reported against Release 9.21(7). For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

## Release 9.21(6) Caveats/Release 9.21(7) Modifications

This section describes possibly unexpected behavior by Release 9.21(6). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(6). For additional caveats applicable to Release 9.21(6), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(7).

### TCP/IP Host-Mode Services

- When the sequence number for a TCP connection grows so large that the right edge of the window rolls over to zero, the usable window size calculation fails to calculate the correct usable window size. [CSCdi27537]

## Release 9.21(5) Caveats/Release 9.21(6) Modifications

This section describes possibly unexpected behavior by Release 9.21(5). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(5). For additional caveats applicable to Release 9.21(5), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(6).

### EXEC and Configuration Parser

- The **access-expression** [**in** | **out**] *expression* interface configuration command is written to configuration memory as a filter for both inbound and outbound packets. [CSCdi24000]

## Protocol Translation

- Removing a **translate** command from the configuration can cause other translations using the same inbound IP address to stop working. A workaround is to configure the remaining translations again, for example, by issuing the **write memory** and **config memory** commands. [CSCdi23621]
- In LAT-to-PAD (X25) translated sessions, a Ctrl-S followed by the entry of any character can sometimes cause a continuous stream of empty LAT messages, causing a session disconnect. [CSCdi24491]

## TCP/IP Host-Mode Services

- Under rare circumstances, an opening TCP connection can get stuck in CLOSEWAIT state. This can also result in a STUN peer session getting stuck in an OPENING state at the same time. [CSCdi23455]

## Release 9.21(4) Caveats/Release 9.21(5) Modifications

This section describes possibly unexpected behavior by Release 9.21(4). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(4). For additional caveats applicable to Release 9.21(4), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(5).

## TCP/IP Host-Mode Services

- Under certain conditions, failed protocol translation connections between TCP and either X.25 or LAT using the **translate** command’s *printer* option can cause a reload of the protocol translator. More specifically, the problem occurs when the software detects an error on the incoming TCP connection after the outgoing X.25 or LAT connection has been set up. [CSCdi22217]

## Wide-Area Networking

- If you use the **local** *global-option* keyword on incoming X.25-to-TCP **translate** commands in conjunction with the **profile** keyword, ECHO Telnet protocol negotiation cannot be translated. Echoing of character is performed by the remote PAD. [CSCdi21087]
- When X.25-over-TCP (XOT) sends a Call Confirm that modifies one of the two proposed flow control facilities (window sizes or maximum packet sizes), the values may be set to 0, which is illegal. [CSCdi21602]
- When the system is using Frame Relay maps that were created using Inverse ARP, these maps should be dropped when a DLCI becomes inactive or is deleted. In addition, if the DLCI used by a box at the far end changes, the map entry should be updated. The second scenario might occur when Freame Relay is being accessed using dial-up service and the far end systems makes two calls in rapid succession. [CSCdi21870]

- Dialer rotary groups do not work because they are unable to dial out a phone number. [CSCdi22715]

## Release 9.21(3) Caveats/Release 9.21(4) Modifications

This section describes possibly unexpected behavior by Release 9.21(3). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(3). For additional caveats applicable to Release 9.21(3), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(4).

### TCP/IP Host-Mode Services

- The system implements diagnostic TCP servers on ports 7 (ECHO) and 9 (DISCARD). Release 10.0 adds a server on port 19 (CHARGEN). These services cannot be disabled, which is worrisome to users implementing firewalls. Also, the system mistakenly listens for XRemote connections on port 10000, corresponding to the nonexistent rotary group 0. [CSCdi20077]

### Wide-Area Networking

- When a router is configured for **encap frame-relay ietf**, ARP requests received on this interface will be dropped. When configured for IETF encapsulation we only send Inverse ARPs and will drop the ARP requests. [CSCdi19107]
- DLCIs that have been deleted, will still show up as active in the **show frame-relay map** command. [CSCdi19127]

## Release 9.21(2) Caveats/Release 9.21(3) Modifications

This section describes possibly unexpected behavior by Release 9.21(2). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(2). For additional caveats applicable to Release 9.21(2), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(3).

### Wide-Area Networking

- In X.25 environments, the message “System restarted by error - Jump to zero” appears. If you do a **show stack**, you will see a two-line stack trace. The cause is related to failed PAD calls; an area of memory is modified after it has been returned as no longer in use. Under circumstances of heavy load and/or slow X.25 performance this invalid reference may modify critical data, causing unpredictable results. [CSCdi17688]
- The parser does not accept encapsulating PVC configuration commands. [CSCdi18671]

## Release 9.21(1) Caveats/Release 9.21(2) Modifications

This section describes possibly unexpected behavior by Release 9.21(1). Unless otherwise noted, these caveats apply to all 9.21 releases up to and including 9.21(1). For additional caveats applicable to Release 9.21(1), see the caveats sections for newer 9.21 releases. The caveats for newer releases precede this section.

The caveats listed here describe only the serious problems. For a most current list of caveats against this release, access CIO as described in the section “Cisco Information Online” later in this document.

All the caveats listed in this section are resolved in release 9.21(2).

### Basic System Services

- After a system has been up for some time, the small buffer pool will start to record large number of misses (in the **show buffers** command), even though it claims that there are large numbers of buffers in the free list. The most visible effect is that all XRemote will slow down considerably, and the client XRemote statistics will show that nearly all packets are being transmitted twice. [CSCdi16843]

### Interfaces and Bridging

- PAP debug messages are misleading. The message stated “remote passed PAP authentication”. It was not clear if we authenticated or the remote authenticated. The new messages state whether or not we sent or received the Auth-Ack. [CSCdi16546]

### TCP/IP Host-Mode Services

- The system fails to reply to a DO TIMEMARK when translating from telnet to X.25. This may result in a Telnet session hang between the protocol translator and the machine sending the DO TIMEMARK. [CSCdi16405]
- When using the printer option for a TCP-LAT translation, one packet erroneously remains in the input queue on the receiving interface for each translation attempt which fails. [CSCdi17681]

### Wide-Area Networking

- There is no way to change the amount of time that the PAD code will wait for a response to its X.29 invitation-to-clear message before clearing the X.25 call. The default of five seconds is too short for some applications. An **x29 inviteclear-time seconds** configuration command should be added to the system in future releases. [CSCdi16491]
- Under some circumstances, the PAD code will fail to actually send an X.29 invitation-to-clear message, even though the output from **debug pad** indicates that one is being sent. [CSCdi16630]
- If a **no dialer** command of any type is issued and the interface is not configured as a dial-on-demand interface, the router may restart. [CSCdi16886]
- X.25 calls received on a serial interface cannot be routed to a CMNS host. [CSCdi17212]
- When an asynchronous interface is configured for both SLIP and demand dialing (with the **dialer in-band** command), the link will dial correctly but packets will never be transmitted across the link. The **debug ip packet** command will show each packet failing encapsulation. [CSCdi17609]

## Cisco Information Online

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You can access CIO in the following ways:

- WWW: <http://www.cisco.com>.
- Telnet: [cio.cisco.com](telnet://cio.cisco.com) (198.92.32.130).
- 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 baud rates up to 14.4 kbps.

For a copy of CIO's Frequently Asked Questions (FAQ), contact [cio-help@cisco.com](mailto:cio-help@cisco.com). For additional information, contact [cio-team@cisco.com](mailto:cio-team@cisco.com).

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**Note** If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or [tac@cisco.com](mailto:tac@cisco.com). To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or [cs-rep@cisco.com](mailto:cs-rep@cisco.com).

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## UniverCD

The complete caveats against this release are available on UniverCD, which is the Cisco Systems library of product information on CD-ROM. On UniverCD, access the Software Release 9.21 Caveats in the "System Software Release 9.21" database.

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This document is to be used in conjunction with the *Protocol Translator Configuration Guide* and *Protocol Translator Command Reference* publications.

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