



1-Port ADSL WAN Interface Card

Feature History

Release	Modification
12.1(3)XJ	This feature was introduced on the Cisco 1700 series routers.
12.2(2)T	This feature was integrated into Cisco IOS Release 12.2(2)T.
12.2(13)ZH	This feature was expanded to include the WIC-1ADSL-I-DG interface card on Cisco 1700 series modular access routers, to support ADSL over ISDN WAN. For specific platforms supported, see Table 1 on page 3 .
12.2(15)ZJ	This feature was expanded to include the WIC-1ADSL-I-DG interface card on Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series modular access routers. For specific platforms supported, see Table 1 on page 3 .
12.3(4)T	Support was added for the WIC-1ADSL-I-DG interface card on Cisco 2600 series, Cisco 3600 series, and Cisco 3700 series modular access routers. For specific platforms supported, see Table 1 on page 3 .

This feature module describes the 1-port Asymmetric Digital Subscriber Line (ADSL) Wide Area Network (WAN) Interface Card (WIC) feature. It describes the benefits of the feature, supported platforms, configuration, related documents, and provides command reference information.

This document includes the following sections:

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- [Supported Platforms, page 3](#)
- [Configuring the Cisco ADSL WAN Interface Cards, page 4](#)
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Feature Overview

The Cisco ADSL WAN interface cards are 1-port WAN interface cards (WIC) for Cisco modular access routers. These cards provide high-speed ADSL digital data transfer between a single customer premises equipment (CPE) subscriber and a central office.

**Note**

ADSL is a last-mile access technology that uses an asymmetrical data rate over a single copper wire pair.

The ADSL WICs are available in two variations: ADSL over POTS (WIC-1ADSL), and ADSL over ISDN WAN with Dying Gasp support (WIC-1ADSL-I-DG). The following bullets summarize the features of each card:

- Cisco WIC-1ADSL—Provides ADSL services over ordinary telephone lines. It is compatible with the Alcatel Digital Subscriber Loop Access Multiplexer (DSLAM), the Cisco 6260 DSLAM with Flexi-line cards, and the Cisco 6130 DSLAM with Flexi-line cards.
- Cisco WIC-1ADSL-I-DG—Provides ADSL services in areas of the world that have extensive ISDN backbones already in place. It is compatible with ECI, Siemens, Alcatel, and Cisco DSLAMs that support ISDN.

All Cisco ADSL WICs support Asynchronous Transfer Mode (ATM) Adaptation Layer 2 (AAL2) for the Cisco 2600, Cisco 3600, and Cisco 3700 series only, and AAL5 for the those models as well as for the Cisco 1700. The cards support various classes of Quality of Service (QoS) for both voice and data.

Benefits

Both Cisco ADSL WAN interface cards provide the following benefits:

- Enable business-class broadband service with voice integration, scalable performance, flexibility, and security
- Aggregate both ADSL and other transport options into a single box
- Provide ADSL high-speed digital data transmissions between CPE and the central office (CO)
- Support ATM AAL5 services and applications, ATM class of service (constant bit rate [CBR], variable bit rate-nonreal time [VBR-NRT], variable bit rate-real time [VBR-rt], and unspecified bit rate [UBR]), as well as up to 23 virtual circuits on a WIC in Cisco routers
- Provide ATM traffic management and QoS features to enable service providers to manage their core ATM network infrastructure.

The following benefits are specific to each card:

- Cisco WIC-1ADSL—Supports and complies with ANSI T1.413 Issue 2, and ITU G.992.1, Annex A (G.DMT for full-rate ADSL over POTS)
- Cisco WIC-1ADSL-I-DG—Allows the coexistence of ADSL and ISDN on the same local loop; supports and complies with ITU G.992.1, Annex B (G.DMT for full-rate ADSL over ISDN), ETSI 101-388, and the Deutsche Telekom U-R2 specification

Restrictions

The Cisco ADSL WAN interface cards do not support dual latency, ADSL2, or ADSL2plus. When the ADSL link is intended to support both voice and data traffic simultaneously, the link should be configured for either all fast-path data or all interleave data, with an interleave depth of zero to ensure that latency is minimized. In addition, the total supported data rate must be reduced to adjust for the reduced coding gain, which is usually present with high-latency traffic.

Related Documents

- *Release Notes for the Cisco 1700 Series Routers for Cisco IOS Release 12.3(4)T*
- *Caveats for Cisco IOS Release 12.3 T*
- *Cisco Interface Cards Hardware Installation Guide*
- *Enhanced Voice and QoS for ADSL and G.SHDSL on Cisco 1700 Series, Cisco 2600 Series, and Cisco 3600 Series Routers*
- *Configuring an ADSL WAN Interface Card on Cisco 1700 Series Routers*

Supported Platforms

Table 1 details the specific platforms that each card supports.

Table 1 Platforms Supported by Each Cisco ADSL WAN Card

Cisco WIC-1ADSL	Cisco WIC-1ADSL-I-DG
Cisco 1720, Cisco 1721, Cisco 1751, Cisco 1760, Cisco 2600, Cisco 2600XM, Cisco 2691, Cisco 3600, Cisco 3700	Cisco 1721, Cisco 1751, Cisco 1760, Cisco 2600XM, Cisco 2691, Cisco 3700

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. 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.

Configuring the Cisco ADSL WAN Interface Cards

This section documents the new or changed Cisco IOS commands for configuring the Cisco ADSL WAN Interface Card feature. All other commands used to configure that feature are documented in the following publications:

- *Configuring an ADSL WAN Interface Card on Cisco 1700 Series Routers*
- The “Configuring ATM” section of the *Cisco IOS Wide-Area Networking Configuration Guide*
- The “ATM Commands” section of the *Cisco IOS Wide-Area Networking Command Reference*

See the following sections for configuration information:

- [Configuration Example, page 4](#)
- [Command Reference, page 5](#)

Configuration Example

The following sample shows a Cisco 1700 series router configured for bridging on the ATM interface with a Cisco ADSL WIC:

```
Current configuration:
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname meltrack
!
no ip routing
!
interface ATM0
no ip address
atm vc-per-vp 256
  pvc 8/35
    encapsulation aal5snap
  !
dsl operating-mode auto
bridge-group 1
!
interface FastEthernet0
no ip address
speed auto
bridge-group 1
!
ip classless
no ip http server
!
bridge 1 protocol ieee
!
line con 0
transport input none
line aux 0
line vty 0 4
login
!
end
```

Command Reference

This section documents the changed Cisco IOS commands for configuring the ADSL WAN Interface Card feature. There are no new commands. All other commands used to configure the ADSL WAN Interface Card feature are documented in the following publications:

- *Configuring an ADSL WAN Interface Card on Cisco 1700 Series Routers*
- The “Configuring ATM” section of the *Cisco IOS Wide-Area Networking Configuration Guide*
- The “ATM Commands” section of the *Cisco IOS Wide-Area Networking Command Reference*

Reference information is provided below for configuring the following Cisco IOS on the Cisco 1700 series routers:

Modified IOS Commands

- [dsl operating-mode](#)

dsl operating-mode



Caution

This command is for testing or lab environments only. Using a configuration other than the default configuration for the DSL operating mode can lead to unpredictable behavior on the ADSL line.

To modify the operating mode of the digital subscriber line for an ATM interface, use the Exec mode **dsl operating-mode** command.

The following syntax is used with the Cisco WIC-1ADSL:

```
dsl operating-mode { auto | ansi-dmt | itu-dmt | splitterless }
```

```
no dsl operating-mode { auto | ansi-dmt | itu-dmt | splitterless }
```

The following syntax is used with the Cisco WIC-1ADSL-I-DG:

```
dsl operating-mode { auto | etsi | itu-dmt } [ tone low ]
```

```
no dsl operating-mode { auto | etsi | itu-dmt } [ tone low ]
```

Syntax Description	
auto	Configure the ADSL line after auto-negotiating with the DSLAM located at the Central Office.
ansi-dmt	Configure the ADSL line to train in the ANSI T1.413 Issue 2 mode.
itu-dmt	Configure the ADSL line to train in the G.992.1 mode.
splitterless	Configure the ADSL line to train in the G.Lite mode.

etsi	Configure the ADSL line to train in the ETSI mode.
tone low	The presence of the tone low option in this command tells the WIC-1ADSL-I-DG to use carrier tones 29 through 48. The absence of tone low tells the WIC-1ADSL-I-DG to use carrier tones 33 through 56. The latter tone set is used when the WIC is operating in accordance with Deutsche Telekom specification U-R2.

The default DSL operating mode is **auto**.

Command Modes

EXEC

Command History

Release	Modification
12.1(3)XJ	The command dsl operating-mode was introduced on the Cisco 1700 series routers.
12.2(2)T	This command was integrated into Cisco IOS Release 12.2(2)T.
12.2(13)ZH	This command was modified to include the keyword splitterless for the Cisco WIC-1ADSL, and syntax (including tone low) for the Cisco WIC-1ADSL-I-DG.
12.2(15)ZJ	The command changes made in Cisco IOS Release 12.2(13)ZH were integrated into Cisco IOS Release 12.2(15)ZJ.
12.3(4)T	The command changes made in Cisco IOS Release 12.2(13)ZJ were integrated into Cisco IOS Release 12.3(4)T.

Usage Guidelines

This configuration command applies to a specific ATM interface. The interface to which it applies must be specified before using the command.

Examples



Caution

This command is for testing or lab environments only. Using a configuration other than the default configuration for the DSL operating mode can lead to unpredictable behavior on the ADSL line.

```
router# conf t
Enter configuration commands, one per line. End with CNTL/Z.
router(config)# int atm 0
router(config-if)# dsl operating-mode itu-dmt
router(config-if)# end
router#
```

Related Commands

Command	Description
show dsl interface atm	Show all of the ADSL-specific information for a specified ATM interface.
show diag wic-slot-num	Specify detailed diagnostic options for displaying the memory on an ADSL-WIC and the ADSL line training log.

■ dsl operating-mode