



Default Route on a PPP Virtual Access Interface

The Default Route on a PPP Virtual Access Interface feature allows a Point-to-Point Protocol (PPP) virtual template to dynamically add a default route pointing to the virtual access interface created by the virtual template.

Port Address Translation (PAT) can be configured on the virtual access interface.

Feature History for the Default Route on a PPP Virtual Access Interface Feature

Release	Modification
12.3(11)T	This feature was introduced.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at <http://www.cisco.com/go/fn>. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Contents

- [Prerequisites for the Default Route on a PPP Virtual Access Interface, page 2](#)
- [Restrictions for the Default Route on a PPP Virtual Access Interface, page 2](#)
- [Information About the Default Route on a PPP Virtual Access Interface Feature, page 2](#)
- [How to Configure a Default Route on a PPP Virtual Access Interface, page 3](#)
- [Configuration Examples for the Default Route on a PPP Virtual Access Interface, page 5](#)
- [Additional References, page 6](#)
- [Command Reference, page 7](#)



Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Copyright © 2004 Cisco Systems, Inc. All rights reserved.

Prerequisites for the Default Route on a PPP Virtual Access Interface

- The IP address needs to be negotiated.

Restrictions for the Default Route on a PPP Virtual Access Interface

- This feature can be used with only one virtual access interface or with multiple virtual interfaces if each virtual interface belongs to a different VPN routing and forwarding table.
- A static route cannot be configured through the virtual access interface.

Information About the Default Route on a PPP Virtual Access Interface Feature

To configure the Default Route on a PPP Virtual Access Interface feature, you should understand the following concepts:

- [Overview of the Default Route on a PPP Virtual Access Interface, page 2](#)
- [Benefits of the Default Route on a PPP Virtual Access Interface, page 2](#)

Overview of the Default Route on a PPP Virtual Access Interface

When a virtual template interface is configured to obtain its IP address by using the IP Control Protocol (IPCP) to configure, enable, and disable the IP protocol modules on both ends of the point-to-point link, the dynamically created virtual access interface gets the IP address after PPP negotiation. The Default Route on a PPP Virtual Interface feature allows a customer premises equipment (CPE) router with PPP over an Asynchronous Transfer Mode (ATM) or Frame Relay connection to access the Internet without turning on any other routing.

Benefits of the Default Route on a PPP Virtual Access Interface

- This feature is auto configured to forward the traffic to the Internet after the IP address has been negotiated.
- This feature does not require other routing.

How to Configure a Default Route on a PPP Virtual Access Interface

This section contains the following procedures:

- [Configuring the Default Route, page 3](#) (required)
- [Configuring the Virtual Template, page 4](#) (required)

Configuring the Default Route

Perform this task to configure the default route.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface virtual-template** *interface-number*
4. **ip address negotiated**
5. **ppp ipcp default route**

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface virtual-template <i>interface-number</i> Example: Router(config)# interface virtual-template 1	Enters interface configuration mode.
Step 4	ip address negotiated Example: Router(config-if)# ip address negotiated	Specifies that the IP address is negotiated.
Step 5	ppp ipcp default route Example: Router(config-if)# ppp ipcp default route	Configures a default route through a PPP virtual access interface.

Configuring the Virtual Template

Perform this task to configure the virtual template.

SUMMARY STEPS

1. **enable**
2. **configure terminal**
3. **interface serial** *interface-number port-number*
4. **no ip address**
5. **encapsulation frame-relay**
6. **no fair-queue**
7. **exit**
8. **interface serial** *interface-number port-number protocol*
9. **frame-relay interface-dlci** *dlci protocol virtual-template interface-number*

DETAILED STEPS

	Command or Action	Purpose
Step 1	enable Example: Router> enable	Enables privileged EXEC mode. <ul style="list-style-type: none"> • Enter your password if prompted.
Step 2	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 3	interface serial <i>interface-number port-number</i> Example: Router(config)# interface serial 2/0	Enables interface configuration mode.
Step 4	no ip address Example: Router(config-if)# no ip address	Removes the interface IP address.
Step 5	encapsulation frame-relay Example: Router(config-if)# encapsulation frame-relay	Enables Frame Relay encapsulation.
Step 6	no fair-queue Example: Router(config-if)# no fair-queue	Disables fair queuing.

	Command or Action	Purpose
Step 7	exit Example: Router(config-if)# exit	Returns to global configuration mode.
Step 8	interface serial <i>interface-number port-number protocol</i> Example: Router(config)# interface serial 2/0.1 point-to-point	Enables interface configuration mode.
Step 9	frame-relay interface-dlci <i>dlci protocol</i> virtual-template <i>interface-number</i> Example: Router(config-if)# frame-relay interface-dlci 200 ppp virtual-template 1	Maps the virtual template to the Frame Relay interface to create the virtual access interface.

Configuration Examples for the Default Route on a PPP Virtual Access Interface

This section provides configuration examples for the default route and the virtual template:

Configuring the Default Route: Example

The following example shows how to configure the PPP default route on the virtual access interface:

```
interface virtual-template 1
 ip address negotiated
 ppp ipcp default route
```

Configuring the Virtual Template: Example

The following example shows how to map the virtual template to the Frame Relay interface to create the virtual access interface:

```
interface serial 2/0
 no ip address
 encapsulation frame-relay
 no fair-queue
!
interface serial 2/0.1 point-to-point
 frame-relay interface-dlci 200 ppp virtual-template 1
```

Additional References

The following sections provide references related to the Default Route on a PPP Virtual Access Interface feature.

Related Documents

Related Topic	Document Title
ATM and Frame Relay commands: complete command syntax, command mode, defaults, usage guidelines, and examples	<i>Cisco IOS Wide-Area Networking Command Reference</i> , Release 12.3T

Standards

Standards	Title
No new or modified standards are supported by this feature.	—

MIBs

MIBs	MIBs Link
No new or modified MIBs are supported by this feature.	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFCs	Title
No new or modified RFCs are supported by this feature.	—

Technical Assistance

Description	Link
Technical Assistance Center (TAC) home page, containing 30,000 pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/public/support/tac/home.shtml

Command Reference

This section documents one new command only.

- **ppp ipcp default route**

ppp ipcp default route

To configure a default route through a Point-to-Point Protocol (PPP) virtual access interface, use the **ppp ipcp default route** command in interface configuration mode. To disable a default route for a PPP virtual access interface, use the **no** form of this command.

ppp ipcp default route

no ppp ipcp default route

Syntax Description This command has no arguments or keywords.

Defaults No default route

Command Modes Interface configuration

Command History

Release	Modification
12.3(11)T	This command was introduced.

Usage Guidelines

This command allows a PPP virtual template to dynamically add a default route pointing to the virtual access interface created by the virtual template.

A customer premises equipment (CPE) router with PPP over an Asynchronous Transfer Mode (ATM) or Frame Relay connection can access the Internet without turning on any other routing.

Examples

The following example shows how to configure the PPP default route on the virtual access interface:

```
interface virtual-template 1
 ip address negotiated
 ppp ipcp default route
```

Related Commands

Command	Description
debug ppp negotiation	Displays information on traffic and exchanges in an internetwork implementing PPP.

CCVP, the Cisco logo, and Welcome to the Human Network are trademarks of Cisco Systems, Inc.; Changing the Way We Work, Live, Play, and Learn is a service mark of Cisco Systems, Inc.; and Access Registrar, Aironet, Catalyst, CCDA, CCDP, CCIE, CCIP, CCNA, CCNP, CCSP, Cisco, the Cisco Certified Internetwork Expert logo, Cisco IOS, Cisco Press, Cisco Systems, Cisco Systems Capital, the Cisco Systems logo, Cisco Unity, Enterprise/Solver, EtherChannel, EtherFast, EtherSwitch, Fast Step, Follow Me Browsing, FormShare, GigaDrive, HomeLink, Internet Quotient, IOS, iPhone, IP/TV, iQ Expertise, the iQ logo, iQ Net Readiness Scorecard, iQuick Study, LightStream, Linksys, MeetingPlace, MGX, Networkers, Networking Academy, Network Registrar, PIX, ProConnect, ScriptShare, SMARTnet, StackWise, The Fastest Way to Increase Your Internet Quotient, and TransPath are registered trademarks of Cisco Systems, Inc. and/or its affiliates in the United States and certain other countries.

All other trademarks mentioned in this document or Website are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0711R)

Copyright © 2004 Cisco Systems, Inc. All rights reserved.

