

Table of Contents

<u>Configuring a Cisco 1700/2600/3600 ADSL WIC With IRB and NAT Using RFC1483 Bridging</u>	1
<u>Document ID: 12969</u>	1
<u>Introduction</u>	1
<u>Before You Begin</u>	1
<u>Conventions</u>	1
<u>Prerequisites</u>	1
<u>Components Used</u>	2
<u>Configure</u>	2
<u>Network Diagram</u>	2
<u>Configurations</u>	3
<u>Verify</u>	5
<u>Troubleshoot</u>	5
<u>Related Information</u>	5

Configuring a Cisco 1700/2600/3600 ADSL WIC With IRB and NAT Using RFC1483 Bridging

Document ID: 12969

Introduction

Before You Begin

Conventions

Prerequisites

Components Used

Configure

Network Diagram

Configurations

Verify

Troubleshoot

Related Information

Introduction

The Cisco 1700, 2600, and 3600 Series Routers support the Asymmetric Digital Subscriber Line (ADSL) WAN Interface Card (WIC). All three platforms are configured essentially the same, but there are differences in hardware and in the Cisco IOS® Software release required for each one. Throughout this document the Cisco 1700/2600/3600 will be called the "Cisco ADSL WIC."

This sample configuration shows a Cisco ADSL WIC that is connected to a Cisco 6130 Digital Subscriber Line Access Multiplexer (DSLAM), terminating on a Cisco 6400 Universal Access Concentrator (UAC).

The Cisco ADSL WIC, configured with RFC1483 Bridging and integrated routing and bridging (IRB), runs network address translation (NAT).

The Cisco 6400 ATM interface is configured with routed bridge encapsulation (RBE).

For the Cisco 6400, the ATM RBE feature on the Cisco 6400 node route processor (NRP) routes IP over bridged RFC1483 Ethernet traffic from a stub-bridged LAN.

Bridged IP packets received on an ATM interface configured in route-bridged mode are routed via the IP header. The interfaces take advantage of the characteristics of a stub LAN topology commonly used for DSL access and offer increased performance and flexibility over IRB.

Before You Begin

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Prerequisites

There are no specific prerequisites for this document.

Components Used

The information in this document is based on the software and hardware versions below.

- Cisco 6400 UAC–NRP IOS Software Release 12.1(3)DC1
- Cisco 6400 UAC–Node Switch Processor (NSP) IOS Software Release 12.1(3)DB
- Cisco 6130 DSLAM–NI2 IOS Software Release 12.1(5)DA
- For ADSL WIC on the Cisco 2600 – Chassis WIC slots and NM–2W
- For ADSL WIC on the Cisco 3600 – NM–1FE1R2W, NM–1FE2W, NM–2FE2W, and NM–2W

Note: For the Cisco 3600, the following do not support the ADSL WIC:

- NM–1E1R2W
- NM–1E2W
- NM–2E2W

To support the ADSL WIC, the following minimum Cisco IOS Software releases are required:

- Cisco IOS Software Release 12.1(5)YB (Plus versions only) on the Cisco 2600/3600.
- Cisco IOS Software Release 12.1(3)XJ or later (Plus versions or ADSL feature set only) on the Cisco 1700. The ADSL feature set is identified by "y7" in the image name; for example, c1700–sy7–mz.121–3.XJ.bin.

When you download the image for the Cisco 1700, make sure you select the image name of 1700. Do not download a 1720 or a 1750 image; the features will not support the ADSL WIC.

The information presented in this document was created from devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If you are working in a live network, ensure that you understand the potential impact of any command before using it.

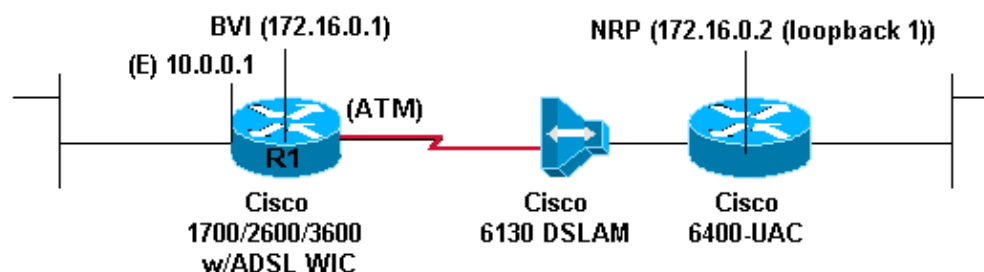
Configure

In this section, you are presented with the information to configure the features described in this document.

Note: To find additional information on the commands used in this document, use the Command Lookup Tool (registered customers only) .

Network Diagram

This document uses the network setup shown in the diagram below.



Configurations

This document uses the configurations shown below.

- Cisco ADSL WIC
- Cisco 6400 NRP – Example 1
- Cisco 6400 NRP – Example 2

Cisco ADSL WIC
<pre>Current configuration: ! version 12.1 service timestamps debug datetime msec service timestamps log datetime msec ! hostname R1 ! ip subnet-zero ! bridge irb ! interface FastEthernet0 ip address 10.0.0.1 255.0.0.0 no ip directed-broadcast ip nat inside no ip mroute-cache ! interface ATM0 no ip address no ip directed-broadcast no ip mroute-cache no atm ilmi-keepalive pvc 4/100 encapsulation aal5snap ! bundle-enable bridge-group 1 hold-queue 224 in ! interface BVI1 ip address 172.16.0.1 255.255.0.0 no ip directed-broadcast ip Nat outside ! ip Nat inside source list 1 interface BVI1 overload ip classless ip route 0.0.0.0 0.0.0.0 <next hop IP address> !--- The next hop IP address is also called the default !--- gateway and is provided by your ISP. For this example, !--- one valid default gateway could be the loopback !--- interface of the Cisco 6400 NRP, 172.16.0.2. no ip http server ! access-list 1 permit 10.0.0.0 0.255.255.255 bridge 1 protocol ieee bridge 1 route ip ! end</pre>

Cisco 6400 NRP – Example 1

```
Current configuration:
!
version 12.0
no service pad
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NRP

!
redundancy
 main-cpu
 no auto-sync standard
 no secondary console enable
ip subnet-zero
!
interface Loopback1
 ip address 172.16.0.2 255.255.0.0
 no ip directed-broadcast
!
interface ATM0/0/0
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no ATM ilmi-keepalive
!
interface ATM0/0/0.4 point-to-point

!--The interface ATM0/0/0.4 point-to-point uses IP
!--unnumbered Loopback1 for its IP address requirements.

 ip unnumbered Loopback1
 no ip directed-broadcast
 no ip route-cache
 ATM route-bridged ip
 PVC 4/100
  encapsulation aal5snap
!
interface Ethernet0/0/1
 no ip address
 no ip directed-broadcast
!
interface Ethernet0/0/0
 no ip directed-broadcast
!
interface FastEthernet0/0/0
 no ip address
 no ip directed-broadcast
 full-duplex
!
ip classless
ip route 172.16.0.1 255.255.255.255 ATM0/0/0.4
end
```

Cisco 6400 NRP – Example 2

```
Current configuration:
!
version 12.0
no service pad
service timestamps debug datetime msec
```

```
service timestamps log datetime msec
!
hostname NRP

!
redundancy
 main-CPU
 no auto-sync standard
 no secondary console enable
ip subnet-zero
!
interface ATM0/0/0
 no ip address
 no ip directed-broadcast
 no ip mroute-cache
 no ATM ilmi-keepalive
!
interface ATM0/0/0.4 point-to-point
 ip address 172.16.0.2 255.255.0.0
 no ip directed-broadcast
 no ip route-cache
 ATM route-bridged ip
 PVC 4/100
  encapsulation aal5snap
!
interface Ethernet0/0/1
 no ip address
 no ip directed-broadcast
!
interface Ethernet0/0/0
 no ip directed-broadcast
!
interface FastEthernet0/0/0
 no ip address
 no ip directed-broadcast
 full-duplex
!
ip classless
ip route 172.16.0.1 255.255.255.255 ATM0/0/0.4
end
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.

Related Information

- [Cisco 6400 Software Setup Guide](#)
 - [Cisco DSL Technology Support Information](#)
 - [Cisco DSL Product Support Information](#)
 - [Technical Support – Cisco Systems](#)
-

