

Configuring a Cisco 6400 ATM Interface With RBE

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Introduction

This sample configuration shows a Cisco 827 Digital Subscriber Line (DSL) Router that is connected to a Cisco 6130 Digital Subscriber Line Access Multiplexer (DSLAM), terminating on a Cisco 6400 Universal Access Concentrator (UAC).

The Cisco 827, configured with RFC1483 Bridging and Integrated Routing and Bridging (IRB), runs Network Address Translation (NAT).

The Cisco 6400 Asynchronous Transfer Mode (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 versions below.

- Cisco 827-4V Customer Premises Equipment (CPE) IOS® Software Release 12.1(1)XB
- Cisco 6400 UAC-NRP IOS Software Release 12.0(7)DC
- Cisco 6400 UAC-NSP IOS Software Release 12.0(4)DB
- Cisco 6130 DSLAM-NI2 IOS Software Release 12.1(1)DA

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.

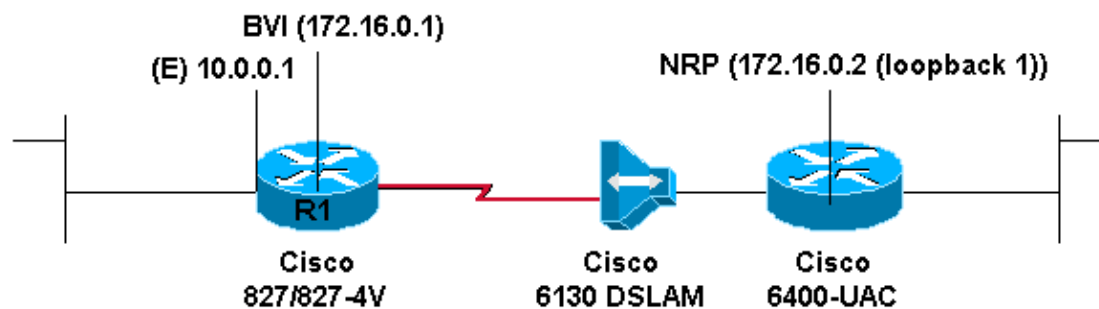
Configure

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 827
- Cisco 6400 NRP Example 1
- Cisco 6400 NRP Example 2

Cisco 827
Current configuration: ! version 12.0 service timestamps debug datetime msec service timestamps log datetime msec ! hostname R1 ! ip subnet-zero ! bridge irb ! interface Ethernet0 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 BV11
    ip address 172.16.0.1 255.255.0.0
    no ip directed-broadcast
    ip Nat outside
!
ip Nat inside source list 1 interface BV11 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
!
voice-port 1
    timing hookflash-in 0
!
voice-port 2
    timing hookflash-in 0
!
voice-port 3
    timing hookflash-in 0
!
voice-port 4
    timing hookflash-in 0
!
end

```

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

- [Configuring the Cisco 6400](#)
 - [Cisco DSL Technology Support Information](#)
 - [Cisco DSL Product Support Information](#)
 - [Technical Support – Cisco Systems](#)
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