

Configuring Two Cisco 827 Routers (PPPoA), 6130 NI-2, Terminating on a 6400 UAC-NRP (aal5mux ppp)

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Introduction

This sample configuration shows two Cisco 827 Digital Subscriber Line (DSL) Routers configured with Point-to-Point Protocol over Asynchronous transfer mode (PPPoA) (aal5mux ppp). Both routers terminate on a Cisco 6400 Universal Access Concentrator (UAC), which has a node route processor (NRP) adapter. Two examples of NRP configuration, point-to-point and multipoint, are provided.

Configurations for a Cisco 6130 NI-2 Digital Subscriber Line Access Multiplexer (DSLAM) and Cisco 6400 node switch processor (NSP) also are provided.

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 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 NI-2 DSLAM 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.

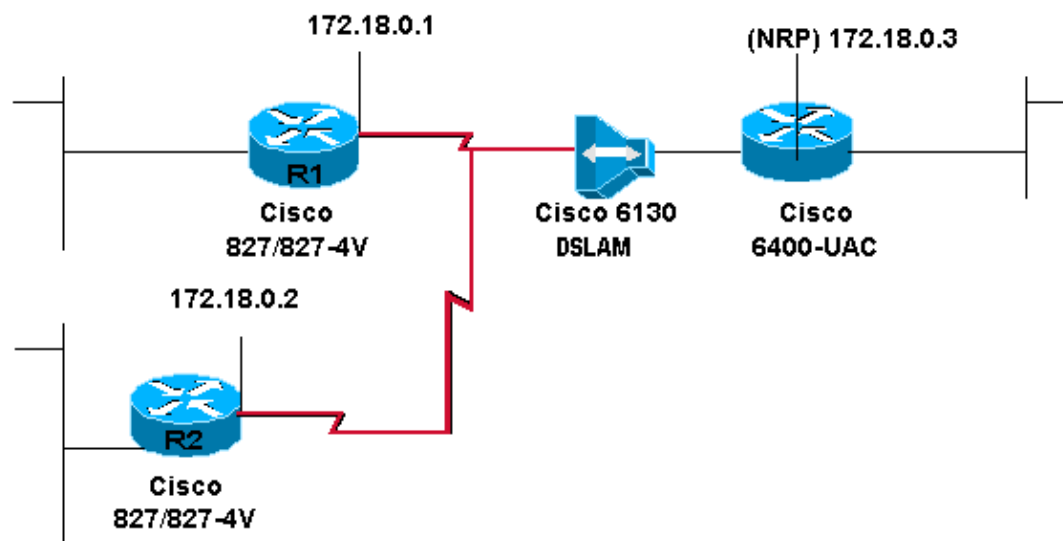
Configure

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 Router (R1)
- Cisco 827 Router (R2)
- Cisco 6130 NI-2 DSLAM
- Cisco 6400-NSP
- Cisco 6400-NRP Using a Point-to-point Interface
- Cisco 6400 NRP Using a Multipoint Interface

Cisco 827 Router (R1)
Current configuration: ! version 12.1 service timestamps debug datetime msec service timestamps log datetime msec ! hostname R1 ! ip subnet-zero ! interface Ethernet0

```

no ip address
no ip directed-broadcast
!
interface ATM0
no ip address
no ip directed-broadcast
no atm ilmi-keepalive
pvc 3/100
encapsulation aal5mux ppp dialer
dialer pool-member 1
!
bundle-enable
hold-queue 224 in
!
interface Dialer0
ip address 172.18.0.1 255.255.0.0
no ip directed-broadcast
encapsulation ppp
dialer pool 1
dialer-group 1
ppp authentication chap callin
ppp chap hostname hostname1
ppp chap password password1
!
ip classless
ip route 0.0.0.0 0.0.0.0 Dialer0
no ip http server
!
dialer-list 1 protocol ip permit
!
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 827 Router (R2)

```

Current configuration:
!
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname R2
!
ip subnet-zero
!
interface Ethernet0
no ip address
no ip directed-broadcast
!
interface ATM0
no ip address
no ip directed-broadcast
no ATM ilmi-keepalive
PVC 4/100

```

```

encapsulation aal5mux ppp dialer
dialer pool-member 1
!
bundle-enable
hold-queue 224 in
!
interface Dialer0
ip address 172.18.0.2 255.255.0.0
no ip directed-broadcast
encapsulation ppp
dialer pool 1
dialer-group 1
ppp authentication chap callin
ppp chap hostname hostname2
ppp chap password password2
!
ip classless
ip route 0.0.0.0 0.0.0.0 Dialer0
!
dialer-list 1 protocol ip permit
!
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 6130 NI-2 DSLAM

```

ni2#
Current configuration:
!
version 12.1
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname ni2
!
slot 1 ATUC-1-4DMT
slot 2 ATUC-4FLEXIDMT
slot 13 ATUC-4FLEXIDMT
!
dsl-profile default
  dmt training-mode quick
ip subnet-zero
!
ATM address 47.0091.8100.0000.0075.2b3f.4d01.0075.2b3f.4d01.00
ATM router pnni
  no aesa embedded-number left-justified
  node 1 level 56 lowest
  redistribute ATM-static
!
interface ATM0/0
  no ip address
  ATM cac service-category abr deny
  ATM maxvp-number 0
  ATM maxvc-number 4096

```

```

ATM maxvci-bits 12
!
interface Ethernet0/0
  no ip route-cache
!
interface ATM0/1
  no ip address
  ATM ilmi-keepalive
!
interface ATM0/2
  no ip address
  no ATM ilmi-keepalive
!
interface ATM1/1
  no ip address
  no ATM ilmi-keepalive
!
interface ATM1/2
  no ip address
  no ATM ilmi-keepalive
!
interface ATM1/3
  no ip address
  no ATM ilmi-keepalive
  ATM PVC 3 100 interface ATM0/1 3 100
!
interface ATM1/4
  no ip address
  no ATM ilmi-keepalive
  ATM PVC 4 100 interface ATM0/1 4 100
!
ip classless
!
end

```

Cisco 6400-NSP

```

Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NSP
!
ip subnet-zero
!
atm address 47.0091.8100.0000.0030.8027.7501.0030.8027.7501.00
atm router pnni
  no aesa embedded-number left-justified
  node 1 level 56 lowest
  redistribute atm-static
!
interface ATM0/0/0
  no ip address
  no ip directed-broadcast
  atm maxvp-number 0
!
interface Ethernet0/0/0
  no ip directed-broadcast
!
interface ATM1/0/0
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive

```

```

!
interface ATM2/0/0
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive
!
interface ATM8/0/0
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive
!
interface ATM8/0/1
  no ip address
  no ip directed-broadcast
  no atm ilmi-keepalive
  atm pvc 3 100 interface ATM1/0/0 3 100
  atm pvc 4 100 interface ATM1/0/0 4 100
!
ip classless
!
end

```

Cisco 6400-NRP Using a Point-to-point Interface

Current configuration:

```

!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NRP
!
username username1 password password1
username username2 password password2
!
redundancy
  main-cpu
  no auto-sync standard
  no secondary console enable
ip subnet-zero
!
interface Loopback0
  ip address 172.18.0.3 255.255.0.0
  no ip directed-broadcast
!
interface ATM0/0/0
  no ip address
  no ip directed-broadcast
  no ip route-cache
  no atm ilmi-keepalive
!
interface ATM0/0/0.3 point-to-point
  no ip directed-broadcast
  pvc 3/100
  encapsulation aal5mux ppp Virtual-Template1
!
!
interface ATM0/0/0.4 point-to-point
  no ip directed-broadcast
  pvc 4/100
  encapsulation aal5mux ppp Virtual-Template1
!
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
!
interface Virtual-Template1
  ip unnumbered Loopback0
  no ip directed-broadcast
  no peer default ip address
  ppp authentication chap
!
ip classless
end

```

Cisco 6400 NRP Using a Multipoint Interface

```

NRP#
Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NRP
!
username username1 password password1
username username2 password password2
!
redundancy
  main-cpu
  no auto-sync standard
  no secondary console enable
ip subnet-zero
!
interface Loopback0
  ip address 172.18.0.3 255.255.0.0
  no ip directed-broadcast
!
interface ATM0/0/0
  no ip address
  no ip directed-broadcast
  no ip route-cache
  no atm ilmi-keepalive
!
interface ATM0/0/0.9 multipoint
  no ip directed-broadcast
  pvc 3/100
    encapsulation aal5mux ppp Virtual-Template1
  !
  pvc 4/100
    encapsulation aal5mux ppp Virtual-Template1
  !
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
!
interface Virtual-Templat1
ip unnumbered Loopback0
no ip directed-broadcast
no peer default ip address
ppp authentication chap
!
ip classless
!
end
```

Verify

There is currently no verification procedure available for this configuration.

Troubleshoot

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

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NetPro Discussion Forums – Featured Conversations for DSL

Network Infrastructure: Remote Access

Service Providers: VPN Service Architectures
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Related Information

- [Configuring a Cisco 827 Router](#)
- [Cisco 6400 Software Setup Guide](#)
- [DSL Technology Support](#)
- [Product Support – Cisco Systems](#)
- [Technical Support – Cisco Systems](#)

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