

# Configuring a Cisco 827 Router, 6130 NI-2, 6400 UAC, and Two NRPs Using PPPoA (aal5mux ppp)

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## Introduction

This sample configuration shows two Cisco 827 Digital Subscriber Line (DSL) Routers connecting to a Cisco 6130 NI-2 Digital Subscriber Line Access Multiplexer (DSLAM) and terminating on a Cisco 6400 Universal Access Concentrator (UAC). The Cisco 6400 has two node route processor (NRP) adapters installed. Each NRP terminates a single 827 DSL router.

An end-to-end configuration is provided in the "Configurations" section.

## 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 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.

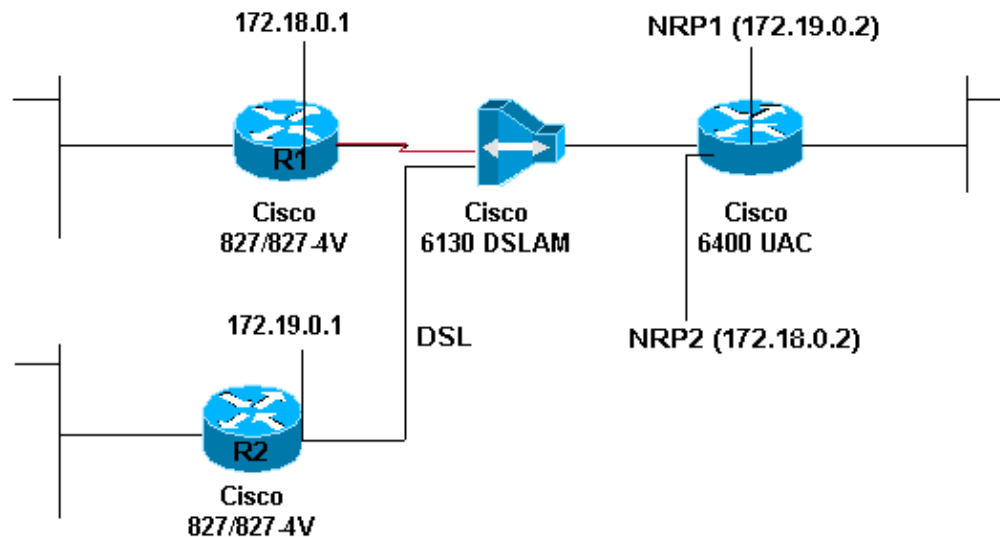
# Configure

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

When using **interface virtual-template**, configure only **ppp chap hostname *username*** and **ppp chap password *password***. The **ppp authentication chap callin** command is not supported. In this example **interface dialer** is used, which is not affected.

```
Cisco 827-1
Current configuration:
!
version 12.0
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 username1
 ppp chap password password1

!
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 827-2

```

Current configuration:
!
version 12.0
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 172.19.0.1
 no ip directed-broadcast
 encapsulation ppp

```

```

dialer pool 1
dialer-group 1
ppp authentication chap callin
ppp chap hostname username2
ppp chap password password2

!
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 6130 NI-2

```

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
!
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
no service pad
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 ATM2/0/0 3 100
  atm pvc 4 100 interface ATM1/0/0 4 100
!
ip classless
!
end

```

**Note:** The R2 DSL router terminates on the following Cisco 6400-NRP2.

#### Cisco 6400-NRP2

```

Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NR1
!
username
  username2
  password
  password2

!--- The username and password values must match
!--- the username and password values of the remote device.

!
ip subnet-zero
!
interface Loopback0
  ip address 172.19.0.2 255.255.0.0
  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
  no ip directed-broadcast
  no ip route-cache
  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-NRP2

```

Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
!
hostname NRP2
!
username
  username2
  password
  password2

!--- The username and password values must match
!--- the username and password values of the remote device.

!
redundancy
  main-cpu
  auto-sync standard
  no secondary console enable
ip subnet-zero
!
interface Loopback0
  ip address 172.18.0.2 255.255.0.0
  no ip directed-broadcast
!
interface ATM0/0/0
  no ip address
  no ip directed-broadcast
  no ip mroute-cache
  no atm ilmi-keepalive
!
interface ATM0/0/0.3 point-to-point
  no ip directed-broadcast
  no ip mroute-cache
  pvc 3/100
    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
  shutdown
!
interface Virtual-Template1
  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.

## NetPro Discussion Forums – Featured Conversations

Networking Professionals Connection is a forum for networking professionals to share questions, suggestions, and information about networking solutions, products, and technologies. The featured links are some of the most recent conversations available in this technology.

<a href="#">NetPro Discussion Forums – Featured Conversations for DSL</a>
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<a href="#">Network Infrastructure: Remote Access</a>
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<a href="#">Service Providers: VPN Service Architectures</a>
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## Related Information

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

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