

Configuring a Cisco 827 Router With NAT, a DHCP Server, and Easy IP Using PPPoA (aal5mux ppp)

Document ID: 12888

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Introduction

This sample configuration shows a Cisco 827 Digital Subscriber Line (DSL) Router connecting to a Cisco 6130 Digital Subscriber Line Access Multiplexer (DSLAM) and terminating on a Cisco 6400 Universal Access Concentrator (UAC). The Cisco 827 has been configured with PPP over ATM (PPPoA) with Network Address Translation (NAT) and IP address negotiation turned on. The Cisco 827 is also functioning as a server for its local Ethernet clients.

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.

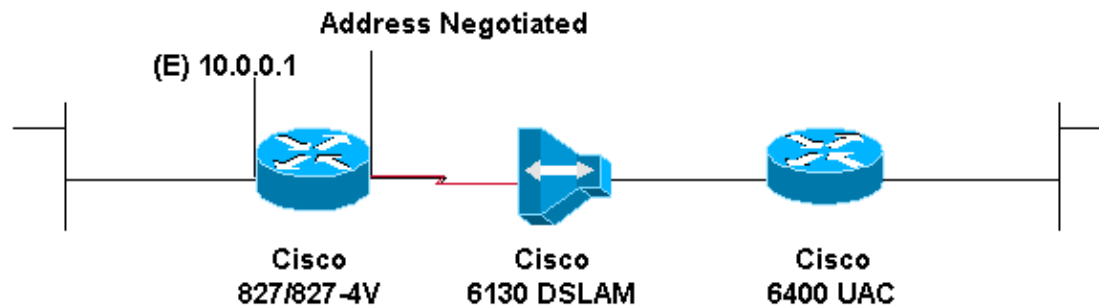
Configure

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

This document uses the configurations shown below.

- Cisco 827
- Cisco Access 6400 NRP1

```
Cisco 827
!
version 12.1
service timestamps debug datetime msec
service timestamps datetime msec
!
hostname R1
!
ip subnet-zero
!
ip dhcp excluded-address 10.0.0.1
!
ip dhcp pool pool name
    network 10.0.0.0 255.0.0.0
    default-router 10.0.0.1
!
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 1/150
        encapsulation aal5mux ppp dialer
```

```

dialer pool-member 1
!
hold-queue 224 in
!
interface Dialer0
 ip address negotiated
 no ip directed-broadcast
 ip nat outside
 encapsulation ppp
 dialer pool 1
 dialer-group 1
 ppp pap sent-username username password password
!
ip nat inside source list 101 interface Dialer0 overload
ip classless
ip route 0.0.0.0 0.0.0.0 Dialer0
no ip http server
!
access-list 101 permit ip 10.0.0.0 0.255.255.255 any
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 Access 6400 NRP1

```

username username password password

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

!
interface ATM0/0/0.200 point-to-point
 no ip directed-broadcast
 no ip route-cache
 pvc 1/301
  encapsulation aal5mux ppp Virtual-Templatell
!
interface Virtual-Templatell
 ip unnumbered Ethernet0/0/0
 no ip directed-broadcast
 peer default ip address pool pool name
 ppp authentication pap
!
ip local pool pool name 172.17.0.1 172.17.0.10

```

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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Service Providers: VPN Service Architectures

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Updated: Nov 23, 2007

Document ID: 12888
