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Configuring a Cisco 1417 Router with NAT, DHCP Server, and Easy IP Using PPPoA with the aal5mux ppp Command

Document ID: 12829

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Introduction

Prerequisites

- Requirements
- Components Used
- Conventions

Configure

- Network Diagram
- Configurations

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Related Information

Introduction

This document provides a sample configuration for a Cisco 1417 Digital Subscriber Line (DSL) Router that connects to a Cisco 6130 DSL Access Multiplexer (DSLAM) and terminates on a Cisco 6400 Universal Access Concentrator–Node Route Processor (UAC–NRP).

The Cisco 1417 configuration has Point to Point Protocol over ATM (PPPoA) with Network Address Translation (NAT). The IP address negotiation is turned on. The Cisco 1417 also serves as a DHCP server for the local Ethernet clients.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on these software and hardware versions:

- Cisco 1417 DSL Router Cisco IOS® Software Release 12.1(1.3)T
- Cisco 6400 UAC–NRP Cisco IOS Software Release 12.0(7)DC
- Cisco 6400 UAC–NSP Cisco IOS Software Release 12.0(4)DB
- Cisco 6130 DSLAM–NI2 Cisco IOS Software Release 12.1(1)DA

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

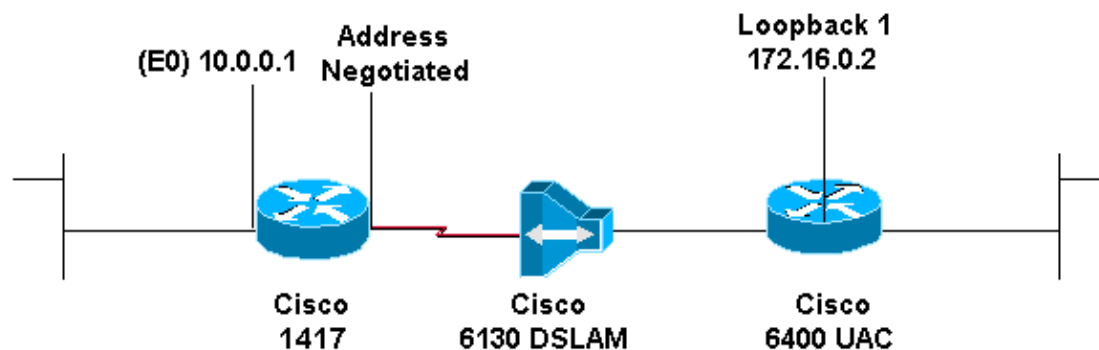
Configure

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 this network setup:



Configurations

This document uses these configurations:

- Cisco 1417-1
- Cisco 6400-NRP1

Cisco 1417-1
Current configuration: ! version 12.1 service timestamps debug datetime msec service timestamps log datetime msec no service password-encryption ! 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
ip nat inside
!
interface ATM0
no ip address
atm vc-per-vp 4096
no atm ilmi-keepalive
pvc 1/44
encapsulation aal5mux ppp dialer
dialer pool-member 1
!
interface Dialer0
ip address negotiated
ip nat outside
encapsulation ppp
dialer pool 1
dialer max-call 4096
dialer-group 1
ppp authentication chap callin
ppp chap hostname <user_name>
ppp chap 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
!
line con 0
end

```

Cisco 6400-NRP1

Note: The user name and password values must match the user name and password values of the remote device.

```

Current configuration:
!
version 12.0
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname NRP1
!
username <user_name> password <password>
!
redundancy
main-cpu
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 ATM0/0/0.3 point-to-point
no ip directed-broadcast
no ip mroute-cache
pvc 1/44
encapsulation aal5mux ppp Virtual-Templatel
!
!
interface Ethernet0/0/1
no ip address
no ip directed-broadcast
!
interface Ethernet0/0/0
no ip address
no ip directed-broadcast
shutdown
!
interface FastEthernet0/0/0
no ip address
no ip directed-broadcast
half-duplex
!
interface Virtual-Templatel
ip unnumbered Loopback1
no ip directed-broadcast
peer default ip address pool <pool_name>
ppp authentication chap
!
ip local pool <pool_name> 172.18.0.1 172.18.0.10
ip classless
ip http server
!
!
!
line con 0
transport input none
line aux 0
line vty 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.

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

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most recent conversations available in this technology.

NetPro Discussion Forums – Featured Conversations for DSL

Network Infrastructure: Remote Access

Service Providers: VPN Service Architectures
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Related Information

- **Cisco 1400 Series Router Installation and Configuration Guide**
- **Cisco 6400 Carrier-Class Broadband Aggregator (Cisco 6400 Universal Access Concentrator)**
- **Technical Support & Documentation – Cisco Systems**

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