Configuring a Cisco 675 CPE to Support PPPoE Clients Terminating on a Cisco 6400 UAC

Document ID: 12861

Introduction

This document provides a sample configuration that shows how to support a Point−to−Point Protocol over Ethernet (PPPoE) client when it is connected to the Ethernet interface of a Cisco 675 DSL Customer Premises Equipment (CPE).

The Cisco 675 is configured with RFC1483 bridging and terminates on a Cisco 6400 Universal Access Concentrator (UAC) that has been configured to support PPPoE using a multipoint asynchronous transfer mode (ATM) subinterface.

The PPPoE feature allows you to initiate a PPP session on a simple bridging Ethernet connected client. The session is transported over the ATM link via encapsulated Ethernet−bridged frames. The session can terminate at either a local exchange carrier central office or an Internet service provider (ISP) point of presence.

PPPoE is a client−initiated connection. On the CPE side, a PC with an Ethernet network interface card (NIC) and the PPPoE client code are established. This PC and other PCs are connected to the Cisco 675 Ethernet segment.

The Cisco 675 WAN interface (labeled "WALL" on the back of the Cisco 675 CPE) is connected to the DSL service (DSL line). In this example, the DSL line then connects to the Cisco 6130 Digital Subscriber Line Access Multiplexer (DSLAM) and terminates on a Cisco 6400 UAC.

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 675 CBOS Version 2.3.5
- 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 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.

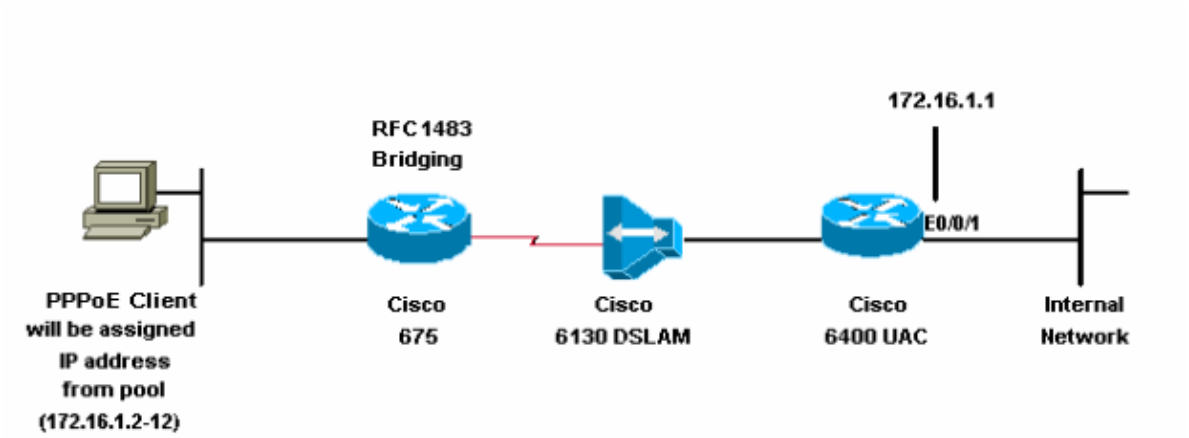
Configure

In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

Network Diagram

This document uses this network setup:



Configurations

Note: In the Cisco 6400 NRP configuration, you set the maximum transmission unit (MTU). Refer to Troubleshooting MTU Size in PPPoE Dialin Connectivity for more information on how to change the MTU size.

PC Configuration
Set IP addressing to automatically obtain an IP address. Set WINS to use DHCP for WINS resolution.

Ensure that no default gateway is set.

It might be necessary to set a domain name because DHCP cannot pass this information.

Make sure you have PPPoE client software installed in your PC (that is, WinPoET).

Cisco 675 CPE

```
cbos#show run
[[ Spanning Tree = Section Start ]]
MAC Bridge = enabled, rfc1483
```

Commands to Issue to the Cisco 675

```
cbos#set bridging rfc1483 enabled
You must use "write" then reboot for changes to take effect.
cbos#set int wan0-0 close

cbos#set int wan0-0 vpi 3

cbos#set int wan0-0 vci 100

cbos#set int wan0-0 open

cbos#write
NVRAM written.

cbos#reboot
```

Cisco 6400 NRP

```
Current configuration:
!
version 12.0
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname NRP1
!
username
<username>
 password
<password>


!--- Username/password must match
!--- client username/password.

!
redundancy
main-cpu
auto-sync standard
no secondary console enable
ip subnet-zero
ip cef
!
vpdn enable
!
vpdn-group 1
accept-dialin
```

```
protocol pppoe
virtual-template 1
pppoe limit per-mac 101
pppoe limit per-vc 102
!
interface ATM0/0/0
no ip address
no ip directed-broadcast
no ip mroute-cache
no atm ilmi-keepalive
!
interface ATM0/0/0.1 multipoint
no ip directed-broadcast
pvc 3/100
encapsulation aal5snap
protocol pppoe
!
interface Ethernet0/0/1
ip address 172.16.1.1 255.255.0.0
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-Template1

!--- Do not use a static IP assignment within a
!--- virtual template; routing problems can occur.

ip mtu 1492
ip unnumbered Ethernet0/0/1

!--- Always use the ip unnumbered command when
!--- configuring a virtual template.

no ip directed-broadcast
ip mroute-cache
peer default ip address pool
<pool name>

ppp authentication chap
!
ip local pool
<pool name>
 172.16.1.2 172.16.1.12
ip classless
no ip http server
!
line con 0
!
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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Related Information

- **Cisco DSL Router Configuration and Troubleshooting Guide**
- **Network Scenarios for Cisco 826/827/828/831/837 and SOHO 76/77/78/91/96**
- **Advanced Router Configuration for Cisco 826/827/828/831/837 and SOHO 76/77/78/91/96PPPoE on ATM**
- **Troubleshooting Cisco 826/827/828/831/837 and SOHO 76/77/78/91/96**
- **Configuring the Cisco 6400**
- **PPPoE on ATM**
- **Asymmetric Digital Subscriber Line (ADSL) Support Page**
- **Technical Support & Documentation − Cisco Systems**

Updated: Jun 01, 2005 Document ID: 12861