

# Table of Contents

<b><u>Configuring a Cisco SOHO77 Router With IP Unnumbered E0, DHCP, PPPoA, and PPP-PAP</u></b> .....	1
<u>Document ID: 12921</u> .....	1
<u>Introduction</u> .....	1
<u>Prerequisites</u> .....	1
<u>Requirements</u> .....	1
<u>Components Used</u> .....	1
<u>Conventions</u> .....	2
<u>Configure</u> .....	2
<u>Network Diagram</u> .....	2
<u>Configurations</u> .....	2
<u>Verify</u> .....	3
<u>Troubleshoot</u> .....	3
<u>Related Information</u> .....	3

# Configuring a Cisco SOHO77 Router With IP Unnumbered E0, DHCP, PPPoA, and PPP-PAP

Document ID: 12921

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## Introduction

### Prerequisites

- Requirements
- Components Used
- Conventions

### Configure

- Network Diagram
- Configurations

### Verify

### Troubleshoot

### Related Information

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## Introduction

This sample configuration shows a Cisco SOHO77 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 SOHO77 is configured as a Dynamic Host Configuration Protocol (DHCP) server with point-to-point protocol (PPP) over ATM (PPPoA).

The Internet Service Provider (ISP) has given the subscriber a range of IP addresses, 10.0.0.1 to 10.0.0.x, with a mask of 255.0.0.0. IP address 10.0.0.1 is manually configured on the Ethernet interface of the Cisco SOHO77. The remaining IP addresses are assigned to a DHCP pool and leased to local LAN devices attached to the Ethernet network of the Cisco SOHO77.

## 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 SOHO77 Customer Premises Equipment (CPE) IOS® Software Release 12.1(3)XP2
- Cisco 6400 UAC-Node Route Processor (NRP) IOS Software Release 12.1(3)DC1
- Cisco 6400 UAC-Node Switch Processor (NSP) IOS Software Release 12.1(3)DB
- Cisco 6130 DSLAM-NI2 IOS Software Release 12.1(5)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

For more information on document conventions, refer to the Cisco Technical Tips Conventions.

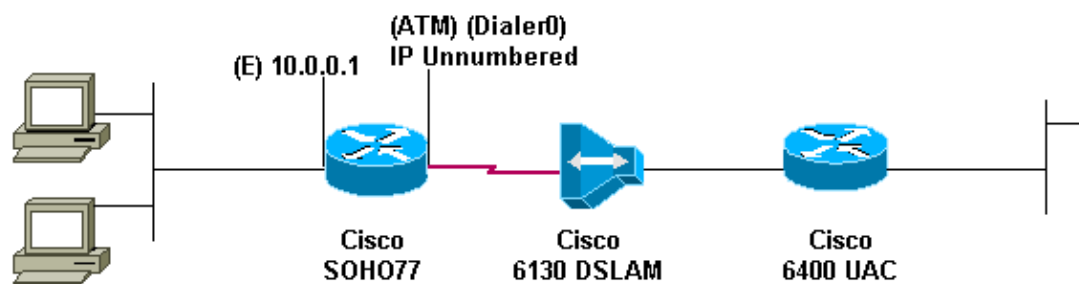
## Configure

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 the network setup shown in this diagram.



## Configurations

This document uses the configuration shown here.

```
Cisco SOHO77
!
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

!--- The DHCP pool does not lease this address; its used by interface E0.

!
ip dhcp pool
<pool name>
network 10.0.0.0 255.0.0.0

!--- Adjust this for your range of addresses.

default-router 10.0.0.1

!--- Default gateway is assigned to local devices.

!
```

```
interface Ethernet0
 ip address 10.0.0.1 255.0.0.0
 no ip directed-broadcast
 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 unnumbered Ethernet0
 no ip directed-broadcast
 encapsulation ppp
 dialer pool 1
 dialer-group 1
 ppp pap sent-username
<username>
 password
<password>
!
 ip classless
 ip route 0.0.0.0 0.0.0.0 Dialer0
 no ip http server
!
 dialer-list 1 protocol ip permit
!
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 Technology Support Information](#)
- [Cisco DSL Product Support Information](#)
- [Technical Support – Cisco Systems](#)

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