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# Advanced RADIUS for Dialup PPP Clients

Document ID: 10361

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## Introduction

### Prerequisites

- Requirements

- Components Used

- Conventions

### Configure

- Network Diagram

- Configuration Notes

- Configurations

### Verify

### Troubleshoot

- Troubleshooting Commands

**NetPro Discussion Forums – Featured Conversations**

**Related Information**

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## Introduction

This document provides a sample configuration for advanced RADIUS for dialup PPP clients.

## Prerequisites

### Requirements

There are no specific requirements for this document.

### Components Used

This document is not restricted to specific software and hardware versions.

### Conventions

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

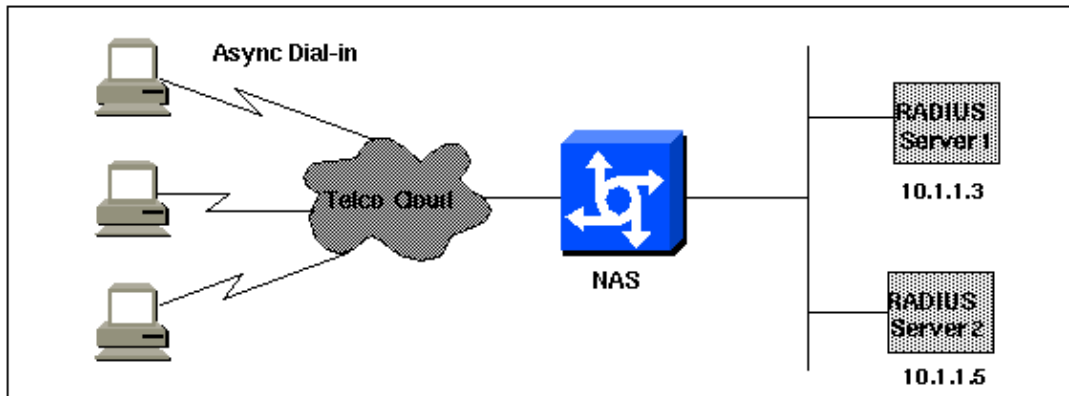
## Configure

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 find more information on the commands used in this document.

### Network Diagram

This document uses this network setup:



## Configuration Notes

Before you begin, ensure that dial-in works. Once the modem can connect and authenticate locally, turn on RADIUS. Then, test authentication to verify that a user can connect and authenticate through RADIUS and turn on authorization.

## Configurations

This document uses these configurations:

- NAS
- Clients File (on server)
- Users File (on server)

NAS
<pre> version 11.2 service timestamps debug datetime msec service timestamps log uptime service password-encryption no service udp-small-servers no service tcp-small-servers ! hostname nasX ! aaa new-model aaa authentication login default radius local aaa authentication login no_radius enable aaa authentication ppp default if-needed radius aaa authorization network radius aaa accounting exec start-stop radius aaa accounting network start-stop radius ! enable password cisco ! username cisco password letmein ip subnet-zero no ip domain-lookup ip name-server 10.6.1.1 async-bootp dns-server 10.1.1.3 async-bootp nbns-server 10.1.1.24 ! interface Ethernet0/0  ip address 10.1.1.21 255.255.255.0  no keepalive </pre>

```
!  
interface Serial0/0  
  no ip address  
  shutdown  
!  
interface Ethernet0/1  
  no ip address  
  shutdown  
!  
interface Serial1/0  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing  
  async mode interactive  
  dialer in-band  
  dialer rotary-group 0  
  no cdp enable  
!  
interface Serial1/1  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing  
  async mode interactive  
  dialer in-band  
  dialer rotary-group 0  
  no cdp enable  
!  
interface Serial1/2  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing  
  async mode interactive  
  dialer in-band  
  dialer rotary-group 0  
  no cdp enable  
!  
interface Serial1/3  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing  
  async mode interactive  
  dialer in-band  
  dialer rotary-group 0  
  no cdp enable  
!  
interface Serial1/4  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing  
  async mode interactive  
  dialer in-band  
  dialer rotary-group 0  
  no cdp enable  
!  
interface Serial1/5  
  physical-layer async  
  no ip address  
  encapsulation ppp  
  async default routing
```

```

async mode interactive
dialer in-band
dialer rotary-group 0
no cdp enable
!
interface Serial1/6
physical-layer async
no ip address
encapsulation ppp
async default routing
async mode interactive
dialer in-band
dialer rotary-group 0
no cdp enable
!
interface Serial1/7
physical-layer async
no ip address
encapsulation ppp
async default routing
async mode interactive
dialer in-band
dialer rotary-group 0
no cdp enable
!
interface Dialer0
ip unnumbered Ethernet0/0
ip tcp header-compression passive
encapsulation ppp
peer default ip address pool Cisco3640-Group-120
dialer in-band
dialer-group 1
no cdp enable
ppp authentication pap
!
router rip
version 2
redistribute connected
network 10.1.1.0
no auto-summary
!
ip local pool Cisco3640-Group-120 10.1.1.80 10.1.1.88
no ip classless
ip http server
!
dialer-list 1 protocol ip permit
dialer-list 1 protocol appletalk permit
!

!--- The following two lines are for the RADIUS server; the first is for the
!--- RADIUS being used for authentication but not accounting. In the second,
!--- accounting information is sent, too, but not authenticating.
!--- If you wish accounting to go to the first, change the 0 to 1646.

!
radius-server host 10.1.1.3 auth-port 1645 acct-port 0
radius-server host 10.1.1.5 auth-port 0 acct-port 1646
radius-server key cisco
!
line con 0
exec-timeout 0 0
login authentication no_radius
line 17 24
autoselect during-login

```

```
autoselect ppp
modem InOut
transport input all
stopbits 1
speed 57600
flowcontrol hardware
line aux 0
line vty 0 4
exec-timeout 0 0
end
```

#### Clients File (on server)

```
!--- Note: This assumes Livingston RADIUS.

# Handshake with router--router needs "radius-server key cisco":
10.1.1.21 cisco
```

#### Users File (on server)

```
!--- Note: This assumes Livingston RADIUS.

# User who can telnet in to configure:
admin Password = "admin"
User-Service-Type = Login-User
# ppp/chap authentication line 1 - password must be cleartext per chap spec
#
# This user gets an IP address from a pool on the router.
chapuser Password = "chapuser"
User-Service-Type = Framed-User,
Framed-Protocol = PPP
# ppp/chap authentication line 1 - password must be cleartext per chap spec
#
# This user has a statically assigned IP address
chapadd Password = "chapadd"
User-Service-Type = Framed-User,
Framed-Protocol = PPP,
Framed-Address = 10.10.10.10
```

## Verify

There is currently no verification procedure available for this configuration.

## Troubleshoot

Use this section to troubleshoot your configuration.

## Troubleshooting Commands

**Note:** Refer to Important Information on Debug Commands before you use **debug** commands.

- **debug ppp negotiation** – To determine if a client is passing PPP negotiation; this is when you check for address negotiation.
- **debug ppp authentication** – To determine if a client is passing authentication. If you are using a version prior to Cisco IOS® Software Release 11.2, issue the **debug ppp chap** command instead.

- **debug ppp error** – To display protocol errors and error statistics associated with PPP connection negotiation and operation.
- **debug aaa authentication** – To determine which method is being used to authenticate (which should be RADIUS, unless the RADIUS server is down) and whether the users are passing authentication.
- **debug aaa authorization** – To determine which method is being used for authorization and whether the users are passing it.
- **debug aaa accounting** – To watch accounting records that are sent.
- **debug radius** – To watch user attributes that are exchanged with the server.

## 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.

NetPro Discussion Forums – Featured Conversations for Access
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Network Infrastructure: Remote Access
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## Related Information

- **Dial Technology Support Pages**
- **Tools and Utilities – Cisco Systems**
- **Technical Support & Documentation – Cisco Systems**

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