Release Notes for Cisco 827 Routers

This document describes new and changed information for the *Cisco 827 Routers Hardware Installation Guide* and the *Cisco 827 Routers Software Configuration Guide*.

For last-minute updates to this release note, refer to the Cisco 827 routers documentation Web site at http://www.cisco.com/univercd/cc/td/doc/product/access/acs_fix/index.htm.

ADSL Cable Requirements

The ADSL cable that you connect to the Cisco 827 router must be 10BaseT Category 5, unshielded twisted-pair (UTP) cable. Using regular telephone cable can introduce line errors.

DHCP Client Support

Follow these steps to configure the router for DHCP client support:

Step 1 Configure the BVI interface by entering the **ip address dhcp client-id Ethernet 0** command.

Specifying the value *client-id ethernet0* means that the MAC address of the Ethernet interface is used as the client ID when the DHCP request is sent. Otherwise, the MAC address of the BVI interface is used as the client ID.

Step 2 Configure NAT:

- **a.** Configure the BVI interface by entering the **ip nat outside** command.
- **b.** Configure the Ethernet interface by entering the **ip nat inside** command.
- **c.** Create an access list under NAT by entering the **access-list 1 permit** *ip address* command to match all Ethernet IP addresses.
- **d.** Configure the source list under NAT by entering the **ip nat inside source list 1 interface BVI 1 overload** command.

Step 3 Configure the Cisco 827 router to act as a DHCP server. This step is optional.

- **a.** At the `config-if` router prompt, enter the **ip dhcp pool** *server name* command.

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b. Enter the **import all** command to have the Cisco 827 router retrieve the Microsoft Windows nameserver (WINS) and domain name system (DNS) server addresses for name resolution.

Configuration Example

The following example shows a configuration of the DHCP client.

```
Current configuration:
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname c827
!
!
ip subnet-zero
ip dhcp excluded-address 10.10.10.1
!
ip dhcp pool SERVER
 network 10.10.10.0 255.255.255.0
 default-router 10.10.10.1
 import all
!
bridge irb
interface Ethernet0
 ip address 10.10.10.1 255.255.255.0
 no ip directed-broadcast
 ip nat inside
!
interface ATM0
 no ip address
 no ip directed-broadcast
 no atm ilmi-keepalive
 bundle-enable
 hold-queue 208 in
!
interface ATM0.1 point-to-point
 no ip directed-broadcast
 pvc 1/100
 encapsulation aal5snap
!
bridge-group 1
!
interface ATM0.2 point-to-point
 ip address 5.0.0.2 255.0.0.0
 no ip directed-broadcast
 pvc 1/101
 protocol ip 5.0.0.1 broadcast
 protocol ip 5.0.0.5 broadcast
 encapsulation aal5snap
!
```

```
!
interface BVI1
 ip address dhcp client-id Ethernet0
 no ip directed-broadcast
 ip nat outside
!
ip nat inside source list 1 interface BVI1 overload
ip classless
ip route 0.0.0.0 0.0.0.0 BVI1
no ip http server
!
access-list 1 permit 10.10.10.0 0.0.0.255
bridge 1 protocol ieee
bridge 1 route ip
!
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
!
!
line con 0
exec-timeout 0 0
transport input none
stopbits 1
line vty 0 4
password lab
login
!
scheduler max-task-time 5000
end
```

Dialer Interface Configuration

The “Configuring the Dialer Interface” section in Chapter 3, “Feature-By-Feature Router Configurations,” of the *Cisco 827 Routers Software Configuration Guide* has an incorrect router prompt in Step 4. The prompt should be `Router(config-if)`.

Easy IP (Phase 1) Configuration

The “Configuring Easy IP (Phase 1)” section in Chapter 3, “Feature-By-Feature Router Configurations,” of the *Cisco 827 Routers Software Configuration Guide* has an incorrect reference in Step 2. The task should refer to the access list defined in Step 1 rather than in Step 2.

MMI Support

The Modem Management Interface (MMI) is software that enables auto-provisioning for the Cisco 827 routers. The MMI uses a fixed PVC to communicate with the Proxy Element (PE) residing on the digital subscriber line access multiplexer (DSLAM). Using MMI, the Cisco 827 router updates the running image and downloads the prescribed configuration using a configuration file or configuration values in a provisioning information database.

Configuring MMI for Auto-Provisioning

The customer premise equipment (CPE) can be automatically configured using the Cisco DSL CPE download, but it can be configured only with the image provisioning feature. The following provisioning configuration files are not supported in this release:

- profiles
- CDCM objects below the CPE level (that is, the ATM VCC objects)
- propVirtual objects and interface objects (ATMif and Ethernetif)

Follow these steps to configure the router for MMI support in configure-terminal mode:

Step 1 To set the configuration approach for MMI, enter the following command:

mmi auto-configure

no mmi auto-configure

If this parameter is enabled, the router is provisioned by the PE. By default, this parameter is enabled.

If this parameter is disabled, the router is configured by the start up configuration file.

Step 2 To set the polling interval for the router to check the PE for any updated image or configuration files, enter the following command:

mmi polling-interval *time*

where time is the number of seconds. The polling-interval range is from 1 to 65535, with the default set to 60 seconds.

Step 3 To set the ATM PVC so the MMI communicates with the PE, enter the following command:

mmi pvc *vpi/vci*

where vpi/vci is the virtual path identifier/virtual channel identifier. The default PVC for MMI is 0/16 ilmi, but if it is not available, you must set the specific PVC for the router to communicate with the PE.

Step 4 To set the timer to monitor the image file download, enter the following command in configure terminal mode:

mmi snmp-timeout *time*

where *time* is 1 to 1800 seconds, which is the allowed interval to download any two consecutive blocks. If you enter the **no mmi snmp-timeout** command, the default time is set to 180 seconds.

Step 5 To eliminate the ADSL line training delay, enter the following command:

dsl operating-mode auto

If the DSLAM is using a Cisco 4xDMT ADI-based card, enter the following command:

dsl operating-mode ansi-dmt

Step 6 To set up the debug process for MMI, enter the following command:

debug mmi

Step 7 Save the configuration file to NVRAM and reload. The router's OK LED on the front panel blinks while the image is being auto-provisioned. The PVC is set up when the reboot occurs.

MMI Configuration Example

The following example shows an MMI configuration:

```
820-voice1#sh run
Building configuration...

Current configuration :947 bytes
!
version 12.1
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname 820-voice1
!
no logging buffered
no logging buffered
logging rate-limit console 10 except errors
!
mmi polling-interval 1000
no mmi auto-configure
mmi pvc 0/16
debug mmi
ip subnet-zero
no ip finger
!
!
!
interface Ethernet0
 no ip address
shutdown
!
interface Virtual-Template1
 no ip address
!
interface ATM0
 no ip address
 pvc 0/101
!
 bundle-enable
 dsl operating-mode auto
!
```

```
ip classless
no ip http server
!
snmp-server manager
!
voice-port 1
!
voice-port 2
!
voice-port 3
!
voice-port 4
>
line con 0
 transport input none
 stopbits 1
line vty 0 4
 login
!
scheduler max-task-time 5000
end
```

Notes for the DSL Provider

To use the Cisco automated configuration solution with the Cisco 827 CPEs, follow these steps:

Step 1 Enable the MMI configuration, as described in the previous section.

Step 2 Ping from the DSLAM to the CPE to ensure the DSLAM is a proxy element host.

Step 3 Store the MMI configuration file on an FTP server that acts as the proxy element's image server.

Step 4 Use Cisco DSL CPE Manager (CDCM) to add the configuration file to the proxy element's image table. The image file can also be added to the PE.

Step 5 Use CDCM to deploy the CPE. You can manually deploy it or use autodiscovery to deploy multiple CPE's.

Step 6 Use CDCM to provision an image for each CPE, which associates a specific configuration file to the CPE.

For more information on the Cisco DSL CPE image provisioning, refer to the following documents:

- *Cisco DSL CPE Automated Configuration Solution Guide*
- *Cisco DSL CPE Manager*

Multilink PPP and Interleaving

Multilink PPP fragments large data packets so that small voice packets can be interleaved within them. However, apart from first-in-first-out (FIFO) queuing, no other kind of output queuing mechanisms are currently supported with PPP over ATM. Consequently, when multilink PPP is configured on the Cisco 827 routers, the big packets are fragmented, but interleaving of small voice packets within them does not occur.

NAT Support for H.323 Signaling

Currently, NAT does not support alerting H.225 messages. Therefore, NAT communication cannot be established between the router end points.

NAT support for H.323 signaling is limited to the Netmeeting application.

PPP over AAL5SNAP Encapsulation Support

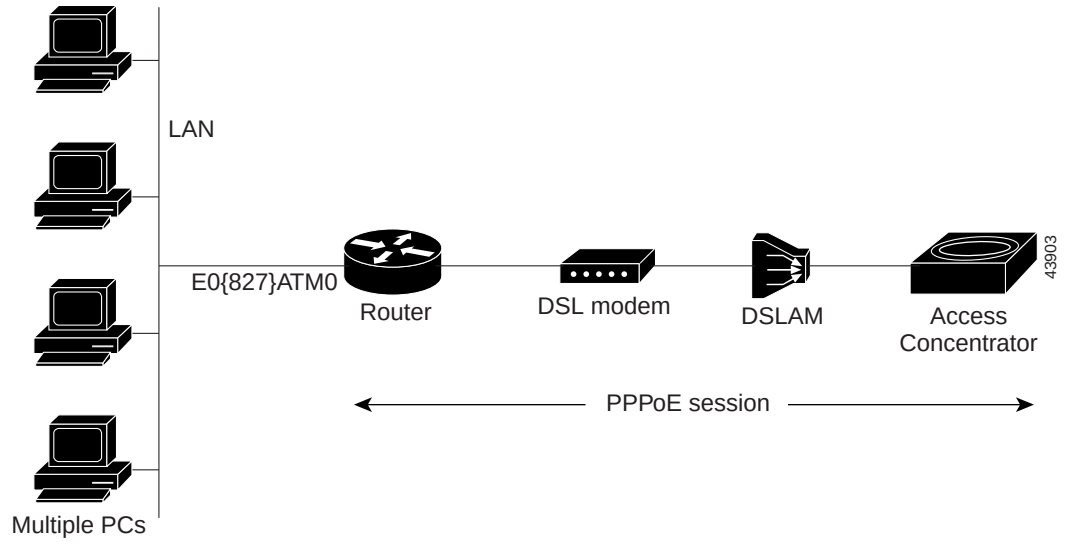
PPP over AAL5SNAP encapsulation is currently not supported, although the context-sensitive help mentions that it can be configured.

PPP over Ethernet Support

This feature supports the PPP over Ethernet (PPPoE) client on an ATM permanent virtual circuit (PVC). Only one PPPoE client on a single ATM PVC is supported. The PPPoE client over an ATM interface is supported for all 820 platforms.

The following figure depicts a typical deployment scenario for PPPoE support:

Figure 1 PPPoE Deployment Scenarios



A PPPoE session is initiated on the client side by the network described above. If the session has a timeout or is disconnected, the PPPoE client immediately attempts to reestablish the session.

Follow these steps to configure the router for PPPoE client support:

Step 1 Configure the virtual private dialup network (VPDN) group number.

a. Enter the **vpdn enable** command in global configuration mode.

b. Configure the VPDN group by entering the **vpdn group** *tag* command.

c. Specify the dialing direction by entering the **request-dialin** command in the VPDN group.

d. Specify the type of protocol in the VPDN group by entering the **protocol pppoe** command.

Step 2 Configure the ATM interface with PPPoE support.

a. Configure the ATM interface by entering the **interface atm 0** command.

b. Specify the ATM PVC by entering the **pvc** *number* command.

c. Configure the PPPoE client and specify the dialer interface to use for cloning by entering the **pppoe-client dial-pool-number** *number* command.

Step 3 Configure the dialer interface by entering the **int dialer** *number* command.

a. Configure the IP address as negotiated by entering the **ip address negotiated** command.

b. Configure authentication for your network by entering the **ppp authentication** protocol command. This step is optional.

c. Configure the dialer pool number by entering the **dialer pool** *number* command.

d. Configure the dialer-group number by entering the **dialer-group** *number* command.

e. Configure a dialer list corresponding to the dialer-group by entering the **dialer-list 1 protocol ip permit** command.

Note Multiple PPPoE clients can run on a different PVCs, in which case, each client has to use a separate dialer interface and a separate dialer pool, and the PPP parameters need to be applied on the dialer interface.

If you enter the **clear vpdn tunnel pppoe** command with a PPPoE client session already established, the PPPoE client session terminates and the PPPoE client immediately tries to reestablish the session.

Configuration Example

The following example shows a configuration of a PPPoE client.

```
vpdn enable
vpdn-group 1
request-dialin
protocol pppoe

int atm0

pvc 1/100
pppoe-client dial-pool-number 1

int dialer 1
ip address negotiated
ppp authentication chap
dialer pool 1
dialer-group 1
```

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- http://www.cisco.com
- http://www-china.cisco.com
- http://www-europe.cisco.com

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- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:

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  http://www.cisco.com/go/subscription

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If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

http://www.cisco.com/tac

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

http://www.cisco.com/register/

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

http://www.cisco.com/tac/caseopen

Contacting TAC by Telephone

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http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

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- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available. .

Use this document in conjunction with the *Cisco 827 Routers Hardware Installation Guide*, the *Regulatory Compliance and Safety Information* document for your router, the *Cisco 827 Routers Software Configuration Guide*, and the Cisco IOS configuration guides and command references.