APPENDIX C

Using Profiles with Cisco 700 Series Routers

This section defines profiles and describes how to use profiles with the Cisco 700 series routers.

A profile is a set of configurations customized for and associated with a specific remote device. After being defined by the user, profiles are saved and stored in the Cisco 700 series router's nonvolatile random access memory (NVRAM), the memory used to store the router's configurations.

This appendix contains the following sections:

- Profile Overview
- Configuring New Profiles
- Modifying User Profiles
- Displaying Profile Configurations
- Profiles and Calls

Profile Overview

Instead of using one set of configurations to operate with all remote devices, you can customize your Cisco 700 series router to use individual configuration sets, or profiles, customized for each remote device.

This section provides an overview of profiles and includes the following sections:

- Profile Parameters
- Permanent Profiles
- System Level

- Profile Template
- Active and Inactive Profiles
- Connections

Profile Parameters

Profile parameters are parameters that can be configured on a per-profile basis and, therefore, apply only to the connection with the remote router. After creating a new profile, these parameters can be reconfigured within that profile.

Any configuration changes to profile parameters while in profile mode apply only to that profile.

Table C-1 lists parameters that can be configured on a profile basis.

Table C-1 Profile Parameters

Profile Parameter	Profile Parameter
Line speed	PPP authentication (outgoing)
Auto calling	Loopback
Demand	Bridge filters (address, type, and user-defined)
Timeout	CPP passwords (client and host)
Called number	CHAP host secret
Encapsulation	PAP host password
Protocol	Callback
Learning	Callback ID security
Bridging	Callback receive numbers
Passthrough	All IP parameters, including filters
Compression	All IPX parameters, including filters
Subnet mask	Ringback number

Permanent Profiles

The Cisco 700 series routers are configured with three permanent profiles. Permanent profiles can be modified, but not deleted:

- LAN—Determines how data is passed from the router to the LAN.
- Internal—Determines how data is passed between the bridge engine and the IP/IPX router.
- Standard—Used for incoming ISDN connections that do not have a profile. The Standard profile does not support routing. This profile should be used to provide the appropriate configuration and security measures for unknown callers.

System Level

The system level is indicated by the system-level prompt, shown as follows:

```
Router_name>
```

Note Use the **set systemname** command to configure the router name.

The system level is composed of both system and profile parameters.

Changing any profile parameters at this level changes the values for the profile template. For more information about the profile template, refer to the section “Profile Template,” later in this appendix.

System Parameters

System parameters are independent of profiles and affect the router as a system. System parameters can be changed only at the system-level prompt, shown as follows:

```
Router_name>
```

Table C-2 lists the system parameters.

Table C-2 System Parameter Set

System Parameter	System Parameter
Caller ID parameters	PPP[1] parameters
Date and time	Screen length
Directory number	Screen echo
Delay time	SNMP[2] parameters
Forwarding mode	SPIDs[3]
Multidestination dialing	Switch type
Numbering plan	System password
Patterns	Power Source 1 detect
Passthru	System name
Power Source 1 detect	Address age time
Call waiting	Country group
Local and remote access	CPP[4] parameters
PPP client password	PPP client secret
Phone 1 and 2	Voice priority

1. PPP = Point-to-Point Protocol.
2. SNMP = Simple Network Management Protocol.
3. SPID = Service Profile Identifier.
4. CPP = Combinet Packet Protocol.

Profile Template

The profile template consists of all the profile parameters as they are configured at the system level. All profiles are based on the profile template by inheriting these values. The profile template is modified by configuring profile parameters at the system level.

Any profile that has a specific profile parameter redefined within the profile is not affected by a change to the profile template configuration.

After you configure the profile template, you can customize individual profiles by entering profile mode for the profile and redefining the profile's parameters.

Active and Inactive Profiles

Profiles are either active or inactive. An active profile immediately creates a virtual connection to that profile's associated remote device. After creating a virtual connection, a demand call can be made to that profile's associated remote device.

Inactive profiles have no connection associated with them. No demand calls can be made with a profile that is configured as inactive.

Activity status is configured with the **set profile** command. To display these settings for an individual profile, use the **show profile** command while in profile mode for the profile.

At any time after the router is powered up, you can manually configure individual profiles to be inactive or active with the **set active** command.

Connections

This section describes how profiles are related to connections.

A connection is a dynamically created pipeline of packets to a remote site.

Connections are closely related to profiles because all connections are associated with a profile that defines the configuration of the connection.

A virtual connection is a connection without any existing physical channels. A physical connection is a connection with one or more existing physical channels. Profiles can be set to be either active or inactive. After a profile is created, setting it to active creates a *virtual connection* to the associated remote device. After a call is made to the associated remote device, the connection becomes an physical connection.

Virtual and physical connections behave similarly; the only difference is that physical connections are forwarding packets. Virtual connections exist in order to monitor packet traffic until a demand filter causes a call to be initiated. After this happens, the virtual connection becomes an active connection.

If the remote user makes a call to you, the remote device is identified and associated with the virtual connection created by the user's profile. When the router accepts the call, a virtual connection becomes a physical connection, even if the profile was configured to inactive with the **set inactive** command.

Configuring New Profiles

This section describes how to create new profiles and contains the following sections:

- Creating a New Profile
- Configuring Profile IDs
- Activating Profiles
- Moving Among Profiles

Creating a New Profile

Create a new profile with the **set user** command. New profiles by default inherit all of the profile template values.

After creating a new profile, you automatically enter profile mode for that profile. Profile mode is indicated by the system prompt, which appear as the system name followed by the profile name, as follows:

```
Home:JohnS>
```

Configuring Profile IDs

After creating the profile, you should configure the profile with the Media Access Control (MAC)-layer address of the remote device that is associated with the profile. Use the **set profile id** command to do this.

Note This step is required only when using Combinet Packet Protocol (CPP). When using Point-to-Point Protocol (PPP), the system name of the calling unit is mapped to the profile of the same name.

If an incoming call is received from a remote device using its MAC-layer address as its user ID, your router uses that MAC-layer address to locate the associated user profile. The correct profile should have the matching MAC-layer address entered as its user address. After it is located, all of the profile's parameters are used during the call process.

An outgoing call made with a profile does not require that a user address be entered into the profile.

Activating Profiles

Use the **set active** command to configure a profile to be either active or inactive.

Moving Among Profiles

The **change user** command is used to move between profiles as well as to return to the system level when in profile mode.

To enter the profile mode for any existing profile, enter the **change user** command with the profile's name, as follows:

```
cd profile name
```

To return to the system level from profile mode, enter the **change user** command without a profile name, as follows:

```
cd
```

Modifying User Profiles

This section describes how to modify existing user profiles and contains the following sections:

- Removing Profile-Based Values
- Deleting Profiles
- Changing Profile Names

Removing Profile-Based Values

Remove any parameter value that you set locally within a profile with the **unset** command, as follows:

Step 1 Use the **change user** command to enter profile mode for the profile in which you want to remove a parameter:

```
Host> cd Profile
```

Step 2 Use the **unset** command to remove the profile-based parameter from the profile:

```
Host:Profile> unset number
```

After you issue this command, the parameter that you removed inherits its value from the router's profile template.

For a complete list of values that can be deleted with the **unset** command, refer to the *Cisco 750 Series and Cisco 760 Series Command Reference* publication.

Deleting Profiles

Use the **reset user** command to delete any user profiles from the router.

The three permanent profiles (described in the section "Permanent Profiles," earlier in this appendix) cannot be deleted.

This command also closes any connection associated with the profile.

Changing Profile Names

Use the **set profile user** command to change the name of an existing profile. Use this command while in profile mode for the profile that you want to affect. In the following example, the profile name is being changed from SanJose to NorthSanJose:

```
766:SanJose> set profile user NorthSanJose
766:NorthSanJose>
```

Displaying Profile Configurations

You can use any of the **show** commands while in profile mode, just as you do at the system level.

In profile mode, some **show** commands only display profile parameters. Parameter values that have been redefined at the profile level are indicated with a <*>. All other parameter values are inherited from the profile template.

Profiles and Calls

This section describes how profiles affect ISDN calling and contains the following sections:

- Incoming Calls
- Outgoing Calls

Incoming Calls

When the router receives an incoming call, the calling unit provides its MAC-layer address. The router it searches both active and inactive profiles that have the same MAC-layer address configured with the **set user id** command. If it finds an active or inactive profile with the matching user ID, the router uses the configuration parameters of that profile while communicating with the remote router. It does not matter if the matching profile is active or inactive at the time of the call; the call process proceeds in the same way.

Note The preceding paragraph applies only when using Combinet Packet Protocol (CPP). When using PPP, the system name of the calling unit is mapped to the profile of the same name.

After the call is finished, the physical link between the two devices is disconnected. However, the *virtual connection* to the remote router might still exist, depending on how the profile has been configured with the command **set profile**: either keep active on disconnection or deactivate on disconnection.

If the profile is configured to keep active after a link disconnects, a virtual connection remains with the remote device. If the profile is configured to become inactive after a link disconnects, both the physical link and the virtual connection to the remote router are disconnected until another call is received from the same remote router.

If there are no active or inactive profiles that have a user ID that matches the remote router's MAC-layer address, the profile *Standard* becomes active for the duration of the call. The Standard profile is a profile used for calls from devices with no associated profile. The following section describes how to configure the standard profile to prevent calls from unknown callers from being connected.

Using the Standard Profile

The Standard profile is one of the three default profiles configured in the router.

The Standard profile cannot be deleted, but can be modified just like any other profile. The Standard profile's default configuration is activated on power up and remains active after call disconnection.

The Standard profile can be used to prevent unknown calls from being connected to the router. The simplest way to do this is to configure the profile with a random value for the following parameters:

- PPP host password—Configured with the **set ppp password** command
- PPP secret—Configured with the **set ppp password** command
- CPP password—Configured with the **set password** command

Outgoing Calls

Outgoing calls are affected by the activity status (active or inactive) of user profiles.

To make an on-demand call to a remote router using the remote router's associated profile, the profile must be active. No demand calls are made to a remote device with an inactive profile.