



Configuring 3G Wireless WAN

This chapter provides information about configuring the 3G Wireless WAN interface on Cisco 800M Series ISRs and contains the following sections:

- [Overview of 3G Wireless WAN, page 19](#)
- [3G Wireless WAN Features Supported on Cisco 800M Series ISR, page 19](#)
- [Pre-requisites for Configuring 3G Wireless WAN on Cisco 800M Series ISRs, page 21](#)
- [Restrictions for Configuring 3G Wireless WAN on the Cisco 800M Series ISR, page 21](#)
- [Configuring GSM Mode on Cisco 800M Series ISRs, page 21](#)
- [Configuring CDMA Mode on Cisco 800M Series ISRs, page 28](#)
- [Configuration Examples, page 32](#)
- [Configuring Dual SIM for Cellular Networks, page 33](#)
- [Upgrading Modem Firmware, page 36](#)
- [Related Documents, page 37](#)

Overview of 3G Wireless WAN

3G Wireless WAN offers a highly secure, simplified, and cost-effective WAN alternative to DSL or Frame Relay. In areas where terrestrial broadband services (cable, DSL, or T1) are not available or are expensive, 3G Wireless WAN connectivity can be a viable alternative. Using the integrated services available on the Cisco 800M Series ISR, 3G Wireless WAN can provide instant and mobile communications during disasters and service outages. Cisco 800M Series ISRs support GSM and CDMA 3G Wireless WAN networks through the pluggable 3G WAN module. The primary application for 3G Wireless WAN module is WAN connectivity as a backup data link for critical data applications. However, the 3G wireless interface can also function as the primary WAN connection for the router.

3G Wireless WAN Features Supported on Cisco 800M Series ISR

3G Wireless WAN module on the Cisco 800M Series ISR is based on Sierra Wireless 9090 modem that supports both GSM and CDMA. Technology mode is auto selected based on the current active firmware. The following table lists the GSM/CDMA modes and the supported frequency bands.

Table 3-1 Supported Cellular Modes and Frequencies

Mode	Frequency
GSM/GPRS/EDGE	850/900/1800/1900 MHz
WCDMA	800/850/1900/2100 MHz
CDMA (EVDO Rev A/ 1xRTT)	800/1900 MHz

Cisco 800M Series ISRs support the following 3G Wireless WAN features:

- Dual SIM
- SIM lock and unlock capabilities
- Multiple Profile
- Crash Dump Support
- Diagnostic Monitor Logging
- Firmware upgrade
- Entity MIB

[Table 3-2](#) describes the LEDs on the 3G Wireless WAN module.

Table 3-2 LEDs on the 3G Wireless WAN Module

LED	LED Color	Description
3G RSSI	Solid green	High RSSI (–60 dBm or higher)
	3 Blinks and long pause	Medium RSSI (–74 to –60 dBm)
	2 Blinks and long pause	–89 to –75 dBm
	1 Blink and long pause	–109 to –90dBm
	Off	Low RSSI (less than –100 dBm)
SIM 0	Solid green	SIM 0 is active and connected to UMTS/EVDO.
	Green (1 blink)	SIM 0 is active and connected to GSM/1xRTT.
SIM 1	Solid green	SIM 1 is active and connected to UMTS/EVDO.
	Green (1 blink)	SIM 1 is active and connected to GSM/1xRTT.
WWAN	Green (fast blinking)	Traffic is flowing through the WAN link.

Pre-requisites for Configuring 3G Wireless WAN on Cisco 800M Series ISRs

The following are prerequisites to configuring the 3G Wireless WAN interface:

- You must have wireless service from a carrier, and you must have network coverage where your router will be physically placed. For a complete list of supported carriers, see the product data sheet.
- You must subscribe to a service plan with a wireless service provider and obtain a Subscriber Identity Module (SIM) card from the service provider. For CDMA, you should get an active Removable User Identity Module (RUIM) card.
- You must check your LEDs for signal strength, as described in [Table 3-2](#).
- To configure your GSM data profile, you need the following information from your service provider:
 - Username
 - Password
 - Access point name (APN)

Restrictions for Configuring 3G Wireless WAN on the Cisco 800M Series ISR

The following restrictions apply to configuring the Cisco 3G wireless interface:

- A data connection can be originated only by the 3G wireless interface. Remote dial-in is not supported.
- Because of the shared nature of wireless communications, the experienced throughput varies depending on the number of active users or the amount of congestion in a given network.
- Cellular networks have higher latency than wired networks. Latency rates depend on the technology and carrier. Latency may be higher when there is network congestion.
- Any restrictions that are part of the terms of service from your carrier also apply to the Cisco 3G wireless interface.
- Short Message Service (SMS) is not supported.
- Global Positioning System (GPS) is not supported.
- Mobile Equipment Personalization (MEP) is not supported.
- Public Land Mobile Network (PLMN) search is not supported.

**Note**

Only one 3G module is supported at a time on the Cisco 800M Series Router. If two 3G modules are present in the 800M Series Router, the 3G module in the second slot will be powered down.

Configuring GSM Mode on Cisco 800M Series ISRs

To configure GSM mode on the 3G cellular Wireless WAN interface, perform these procedures:

- [Data Account Provisioning, page 22](#)
- [Setting up a Data Call, page 24](#)

Data Account Provisioning



Note

To provision your modem, you must have an active wireless account with a service provider. A SIM card must be installed in the GSM 3G wireless module.

To provision your data account, follow these procedures:

- [Verifying Signal Strength and Service Availability, page 22](#)
- [Configuring a GSM Modem Data Profile, page 22](#)

Verifying Signal Strength and Service Availability

To verify the signal strength and service availability on your modem, use the following commands in privileged EXEC mode.

Table 3-3 *Commands for Verifying Signal Strength*

Command or Action	Purpose
<code>show cellular <i>unit</i> network</code>	Displays information about the carrier network, cell site, and available service.
<code>show cellular <i>unit</i> hardware</code>	Displays the cellular modem hardware information.
<code>show cellular <i>unit</i> connection</code>	Displays the current active connection state and data statistics.
<code>show cellular <i>unit</i> radio</code>	Shows the radio signal strength.
<code>show cellular <i>unit</i> profile</code>	Displays information about the modem data profiles created.
<code>show cellular <i>unit</i> security</code>	Shows the security information for the modem, such as active SIM and modem lock status.
<code>show cellular <i>unit</i> all</code>	Shows consolidated information about the modem. The profiles that were created, the radio signal strength, the network security, and so on.



Note

In the configuration procedures given in this chapter, the *unit* argument identifies the router slot, WIC slot, and port separated by slashes (0/0/0).

Configuring a GSM Modem Data Profile

Enter the following command to configure or create a new modem data profile in privileged EXEC mode.

Table 3-4 Configuring a GSM Modem Data Profile

Command	Purpose
cellular <i>unit</i> profile create <i>profile-number</i> <i>apn</i> <i>authentication</i> <i>username</i> <i>password</i> Example: Router# cellular 0/0/0 profile create 3 apn.com chap GSM GSMPassword	Configures a new modem data profile. <ul style="list-style-type: none"> <i>profile-number</i>—Specifies a number for the profile that you are creating. You can create up to 16 profiles. Note For GSM, default data profile is profile1. <ul style="list-style-type: none"> <i>apn</i>—Specifies the access point name. You must get this information from your service provider. <i>authentication</i>—Specifies the type of authentication, for example, CHAP, PAP. <i>username</i>—Specifies the user name provided by your service provider. <i>password</i>—Specifies the password provided by your service provider.

**Note**

For deleting a GSM data profile, use the **cellular** *unit* **profile delete** *profile-number* command.

Example: Configuring GSM Data Profile

This example shows the GSM profiles created on the cellular interface 0/1/0.

```
Router# show cellular 0/1/0 profile

Profile 1 = ACTIVE*
-----
PDP Type = IPv4
PDP address = 117.96.4.183
Access Point Name (APN) = airtelgprs.com
Authentication = None
Username:
Password:
Primary DNS address = 125.22.47.102
Secondary DNS address = 125.22.47.103

Profile 4 = INACTIVE
-----
PDP Type = IPv4
Access Point Name (APN) = aircel.com
Authentication = CHAP
Username: aircel1
Password: aircel

Profile 11 = INACTIVE
-----
PDP Type = IPv4
Access Point Name (APN) = vodafone
Authentication = None
Username:
```

```
Password:

Profile 15 = INACTIVE
-----
PDP Type = IPv4
Access Point Name (APN) = aircel.com
Authentication = CHAP
Username: aircell
Password: aircel

* - Default profile

Configured default profile for active SIM 0 is profile 1.
```

Setting up a Data Call

A data call is a call setup through a signaling protocol on the Public Switching Telephony Network (PSTN) to a Network Access Server (NAS) to transfer data, either as a byte stream (for example, terminal emulation) or in a packet format (for example, PPP packets) from a data terminal (such as a PC) to a data network.

To setup a data call, perform the following tasks:

- [Configuring a Cellular Interface, page 24](#)
- [Configuring DDR, page 25](#)
- [Configuring DDR Backup, page 27](#)

Configuring a Cellular Interface

To configure the cellular interface, enter the following commands, beginning in privileged EXEC mode.

SUMMARY STEPS

1. **configure terminal**
2. **interface cellular *unit***
3. **encapsulation slip**
4. **asynchronous mode interactive**
5. **ip address negotiated**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode from the terminal.
Step 2	interface cellular <i>unit</i> Example: Router(config)# interface cellular 0/0/0	Specifies the cellular interface.
Step 3	encapsulation slip Example: Router(config-if)# encapsulation slip	Specifies slip encapsulation for an interface configured for dedicated asynchronous mode or dial-on-demand routing.
Step 4	asynchronous mode interactive Example: Router(config-if)# asynchronous mode interactive	Returns a line from dedicated asynchronous network mode to interactive mode, enabling the slip and ppp commands in privileged EXEC mode.
Step 5	ip address negotiated Example: Router(config-if)# ip address negotiated	Specifies that the IP address for a particular interface is dynamically obtained.

**Note**

When the cellular interface requires a static IP address, the address may be configured as **ip address negotiated**. Through IP Control Protocol (IPCP), the network ensures that the correct static IP address is allocated to the device. If a tunnel interface is configured with the **ip address unnumbered cellular interface** command, the actual static IP address must be configured under the cellular interface, in place of **ip address negotiated**. For a sample cellular interface configuration, see the [“Basic Cellular Interface Configuration”](#) section on page 3-32.

Configuring DDR

Perform these steps to configure dial-on-demand routing (DDR) for the cellular interface.

SUMMARY STEPS

1. **configure terminal**
2. **interface cellular *unit***
3. **dialer in-band**
4. **dialer idle-timeout *seconds***
5. **dialer string *string***
6. **dialer group *number***

7. **exit**
8. **dialer-list** *dialer-group protocol protocol-name {permit | deny | list access-list-number | access-group}*
9. **ip access-list** *access-list-number permit ip-source-address*
10. **line** *unit*
11. **script dialer** *regex*
12. **exit**
13. **chat-script** *script-name* "" "AT!CALL *profile-number*#" TIMEOUT *timeout-value* "OK"
14. **interface cellular** *unit*
15. **dialer string** *string*

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 2	interface cellular <i>unit</i> Example: Router(config)# interface cellular 0/0/0	Specifies the cellular interface.
Step 3	dialer in-band Example: Router(config-if)# dialer in-band	Enables DDR and configures the specified serial interface for in-band dialing.
Step 4	dialer idle-timeout <i>seconds</i> Example: Router(config-if)# dialer idle-timeout 30	Specifies the duration of idle time, in seconds, after which a line will be disconnected.
Step 5	dialer string <i>string</i> Example: Router(config-if)# dialer string multimode	Specifies the number or string to dial. Use the name of the chat script here.
Step 6	dialer-group <i>number</i> Example: Router(config-if)# dialer-group 1	Specifies the number of the dialer access group to which a specific interface belongs.

	Command or Action	Purpose
Step 7	exit Example: Router(config-if)# exit	Enters the global configuration mode.
Step 8	dialer-list dialer-group protocol protocol-name {permit deny list access-list-number access-group} Example: Router(config)# dialer-list 1 protocol ip list 1	Creates a dialer list for traffic of interest and permits access to an entire protocol.
Step 9	ip access-list access-list-number permit ip-source-address Example: Router(config)# ip access list 1 permit any	Defines traffic of interest.
Step 10	line unit Example: Router(config-line)# line 3	Specifies the line configuration mode.
Step 11	script dialer regexp Example: Router(config-line)# script-dialer multimode	Specifies a default modem chat script.
Step 12	exit Example: Router (config-line)# exit	Exits line configuration mode.
Step 13	chat-script script-name "" "AT!CALL" TIMEOUT timeout-value "OK" Example: Router(config)# chat-script multimode "" "AT!CALL" TIMEOUT 60 "OK"	Defines the Attention Dial Tone (ATDT) commands when the dialer is initiated.
Step 14	interface cellular unit Example: Router(config)# interface cellular 0	Specifies the cellular interface.
Step 15	dialer string string Example: Router(config)# dialer string multimode	Specifies the dialer script (defined using the chat script command).

Configuring DDR Backup

To monitor the primary connection and initiate the backup connection when needed, the router can use the following method:

- Floating Static Route—The route through the backup interface has an administrative distance that is greater than the administrative distance of the primary connection route and therefore would not be in the routing table until the primary interface goes down.

Configuring DDR Backup Using Floating Static Route

To configure a floating static default route on the secondary interface beginning in the global configuration mode, perform the following tasks.



Note

Make sure you have ip classless enabled on your router.

SUMMARY STEPS

1. **configure terminal**
2. **ip route** *network-number network-mask {ip-address | interface} [administrative distance] [name name]*

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 2	ip route <i>network-number network-mask {ip-address interface} [administrative distance] [name name]</i> Example: Device(config-if)# ip route 209.165.200.225 255.255.255.224 Dialer 2 253 name name1	Establishes a floating static route with the configured administrative distance through the specified interface. Note A higher administrative distance should be configured for the route through the backup interface so that it is used only when the primary interface is down.

Configuring CDMA Mode on Cisco 800M Series ISRs

Perform the following procedures for configuring CDMA mode on Cisco 800M Series 3G WWAN module:

- [Activating the Modem, page 29](#)
- [Setting up a Data Call, page 29](#)

Activating the Modem

Manual activation of the CDMA modem is not supported. The activation and provisioning procedures may differ depending upon your carrier. To activate the CDMA modem, contact your service provider.

Setting up a Data Call

Perform these procedures to set up a data call for CDMA mode.

- [Configuring a Cellular Interface, page 24](#)
- [Configuring DDR, page 25](#)
- [Configuring DDR Backup, page 27](#)

Configuring a Cellular Interface

To configure the cellular interface, enter the following commands, beginning in privileged EXEC mode.

SUMMARY STEPS

1. **configure terminal**
2. **interface cellular *unit***
3. **encapsulation slip**
4. **asynchronous mode interactive**
5. **ip address negotiated**

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode from the terminal.
Step 2	interface cellular <i>unit</i> Example: Router(config)# interface cellular 0/0/0	Specifies the cellular interface.
Step 3	encapsulation slip Example: Router(config-if)# encapsulation slip	Specifies slip encapsulation for an interface configured for dedicated asynchronous mode or dial-on-demand routing.

	Command or Action	Purpose
Step 4	asynchronous mode interactive Example: Router(config-if)# asynchronous mode interactive	Returns a line from dedicated asynchronous network mode to interactive mode, enabling the slip and ppp commands in privileged EXEC mode.
Step 5	ip address negotiated Example: Router(config-if)# ip address negotiated	Specifies that the IP address for a particular interface is obtained via PPP and IPCP address negotiation.

Configuring DDR

Perform these steps to configure dial-on-demand routing (DDR) for the cellular interface.

SUMMARY STEPS

1. **configure terminal**
2. **interface cellular** *unit*
3. **dialer in-band**
4. **dialer idle-timeout** *seconds*
5. **dialer string** *string*
6. **dialer group** *number*
7. **exit**
8. **dialer-list** *dialer-group* **protocol** *protocol-name* {**permit** | **deny** | **list** *access-list-number* | **access-group**}
9. **ip access-list** *access-list-number* **permit** *ip-source-address*
10. **line** *unit*
11. **script dialer** *regexp*
12. **exit**
13. **chat-script** *script name* """ "AT!CALL *profile-number*#" **TIMEOUT** *timeout-value* "OK"
14. **interface cellular** *unit*
15. **dialer string** *string*

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Router# configure terminal	Enters global configuration mode.
Step 2	interface cellular <i>unit</i> Example: Router(config)# interface cellular 0/0/0	Specifies the cellular interface.
Step 3	dialer in-band Example: Router(config-if)# dialer in-band	Enables DDR and configures the specified serial interface for in-band dialing.
Step 4	dialer idle-timeout <i>seconds</i> Example: Router(config-if)# dialer idle-timeout 30	Specifies the duration of idle time, in seconds, after which a line will be disconnected.
Step 5	dialer string <i>string</i> Example: Router(config-if)# dialer string multimode	Specifies the number or string to dial. Use the name of the chat script here.
Step 6	dialer-group <i>number</i> Example: Router(config-if)# dialer-group 1	Specifies the number of the dialer access group to which a specific interface belongs.
Step 7	exit Example: Router(config-if)# exit	Enters the global configuration mode.
Step 8	dialer-list <i>dialer-group</i> protocol <i>protocol-name</i> {permit deny list <i>access-list-number</i> access-group } Example: Router(config)# dialer-list 1 protocol ip list 1	Creates a dialer list for traffic of interest and permits access to an entire protocol.
Step 9	ip access-list <i>access-list-number</i> permit <i>ip-source-address</i> Example: Router(config)# ip access-list 1 permit any	Defines traffic of interest.

	Command or Action	Purpose
Step 10	line <i>unit</i> Example: Router(config-line)# line 0/0/0	Specifies the line configuration mode.
Step 11	script dialer <i>regex</i> Example: Router(config-line)# script-dialer multimode	Specifies a default modem chat script.
Step 12	exit Example: Router (config-line)# exit	Exits line configuration mode.
Step 13	chat-script <i>script-name</i> "" "AT!CALL" TIMEOUT <i>timeout-value</i> "OK" Example: Router(config)# chat-script multimode "" "AT!CALL" TIMEOUT 60 "OK"	Defines the Attention Dial Tone (ATDT) commands when the dialer is initiated.
Step 14	interface cellular <i>unit</i> Example: Router(config)# interface cellular 0/0/0	Specifies the cellular interface.
Step 15	dialer string <i>string</i> Example: Router(config)# dialer string multimode	Specifies the dialer script (defined using the chat script command).

Configuring DDR Backup

The configuration tasks for configuring DDR backup is same for GSM and CDMA. To configure DDR back up for CDMA, See the [Configuring DDR Backup, page 27](#) for GSM and perform the steps.

Configuration Examples

This section provides the following configuration examples:

- [Basic Cellular Interface Configuration, page 32](#)
- [Tunnel over Cellular Interface Configuration, page 33](#)

Basic Cellular Interface Configuration

The following example shows how to configure a cellular interface (GSM/CDMA) to be used as a primary WAN connection. It is configured as the default route.

```
Router# show running-config
```

```

!
chat-script multimode "" "AT!CALL1" TIMEOUT 20 "OK"
interface Cellular0/0/0
ip address negotiated
encapsulation slip
load-interval 30
dialer in-band
dialer idle-timeout 0
dialer string multimode
dialer-group 1
no peer default ip address
async mode interactive
routing dynamic
ip route 0.0.0.0 0.0.0.0 Cellular0/0/0
dialer-list 1 protocol ip permit
line 3
script dialer multimode
modem InOut
no exec
transport input all
transport output all

```

Tunnel over Cellular Interface Configuration

The following example shows how to configure the static IP address when a tunnel interface is configured with the **ip address unnumbered** *cellular interface* command:

```

interface Tunnel2
ip unnumbered Cellular0/0/0
tunnel source Cellular0/0/0
tunnel destination 128.107.248.254

interface Cellular0/0/0
bandwidth receive 1400000
ip address 23.23.0.1 255.255.0.0
ip nat outside
ip virtual-reassembly
encapsulation slip
no ip mroute-cache
dialer in-band
dialer idle-timeout 0
dialer string dial<carrier>
dialer-group 1
async mode interactive
! traffic of interest through the tunnel/cellular interface
ip route 10.10.0.0 255.255.0.0 Tunnel2

```

Configuring Dual SIM for Cellular Networks

The Dual SIM feature implements auto-switch and fail over between two cellular networks. This feature is enabled by default with SIM slot 0 being the primary slot and slot 1 being the secondary (fail over) slot.

Usage Guidelines for Configuring a Dual SIM

Follow these guidelines while you configure a dual SIM:

- Configure the SIM profile for slots 0 and 1 using the **sim profile** command.
- For auto-switch and fail over to work, configure the chat script without a specific profile number.
- If SIM profile is not configured, profile #1 is used by default.
- If fail over timer is not configured, the default failover timeout is 2 minutes.
- If SIM primary slot is not configured, the default primary SIM is slot 0.

**Note**

Dual SIM feature is supported only when the same firmware image is used for both the SIM cards.

SUMMARY STEPS

1. **configure terminal**
2. **controller cellular** *unit*
3. **sim primary** *slot*
4. **sim max-retry** *number*
5. **sim authenticate** [**0** | **7**] *pin slot* {**0** | **1**}
6. **failover** *timeout-period*
7. **sim profile** *number* [*ims number*] *slot* {**0** | **1**}

DETAILED STEPS

	Command or Action	Purpose
Step 1	configure terminal Example: Device# configure terminal	Enters the global configuration mode.
Step 2	controller cellular <i>unit</i> Example: Device(config)# controller cellular 0/0 or Device(config)# controller cellular 0/1	Enters the cellular controller configuration mode.
Step 3	sim primary <i>slot</i> Example: Device(config-controller)# sim primary slot 1	(Optional) Enters either slot number 0 or 1 of the primary SIM.
Step 4	sim max-retry <i>number</i> Example: Device(config-controller)# gsm sim max-retry 20	(Optional) Specifies the maximum number of fail over retries from 1 to 65535. The default value is 10.

	Command or Action	Purpose
Step 5	sim authenticate [0 7] <i>pin</i> slot {0 1} Example: Device(config-controller)# gsm sim authenticate 0 1234 slot 0	Authenticates the SIM CHV1 code
Step 6	failovertimer <i>timeout-period</i> Example: Device(config-controller)# failovertimer 6	(Optional) By default, the fail over time period is 2 minutes before the primary SIM switches over to the secondary SIM if service becomes unavailable. Specify a fail over timeout value between 1 and 7 minutes before a switchover occurs.
Step 7	sim profile <i>number</i> slot {0 1} Example: Device(config-controller)# sim profile 1 slot 0	Applies the configured profile number to the SIM and its slot number. The default (primary) slot is 0. You must also identify the primary and secondary SIM for the configured profile when two SIMs are presented.

**Note**

Before you start the modem crash dump, turn off the SIM switch over by configuring the **sim max-retry** 0 command.

Configuration Examples

The following example shows how to configure a dual SIM:

```
router# configure terminal
router(config)# controller Cellular 0/0
router(config-controller)# sim profile 1 slot 0
router(config-controller)# sim primary slot 1
router(config-controller)# sim max-retry 20
router(config-controller)# sim failovertimer 5
```

Configuring SIM Lock and Unlock

Use the following commands for locking or unlocking the SIM.

Table 3-5 Commands for Manually Switching the SIM

Command	Purpose
cellular sim {lock unlock}	Locks or unlocks the SIM.
cellular unit sim [lock unlock] <i>pin</i>	Locks or unlocks the SIM.
cellular unit sim unlock <i>newpin</i>	Unlocks the SIM.

Upgrading Modem Firmware

The 3G Wireless WAN module for Cisco 800M Series ISRs comes with SL9090 modem from Sierra Wireless. The firmware for the modem is upgradable using Cisco IOS commands. The firmware can be downloaded from the wireless software download page on Cisco.com.

Use the following procedure to upgrade the modem firmware:



Note

Before upgrading the modem to a new firmware version, please check if the new firmware version has been certified by your wireless service provider. Using an uncertified firmware version on the modem may impact the wireless service provider network adversely. See the following web link for the latest certified firmware version for your carrier and IOS compatibility:
http://www.cisco.com/en/US/prod/routers/networking_solutions_products_genericcontent0900aecd80601f7e.html

- Step 1** Go to the 3G firmware download website and select the carrier:
<http://software.cisco.com/download/navigator.html?mdfid=279119319&flowid=6999>
- Step 2** Download the appropriate firmware release under Wireless Integrated Switches and Routers.
- Step 3** Copy the files to the device's flash.
- Step 4** Use the following command to initiate the firmware upgrade process:
microcode reload cellular bay slot slot modem-provision flash:

Switching Modem Firmware Image

The 3G Wireless WAN module can support firmware images for GSM and CDMA and support carrier switching. Only one firmware image is supported at a time. Auto switching between different firmware packages is not supported.

You can use the following commands for switching modem firmware:

Command	Description
show cellular unit microcode	Displays the list firmware images available on the modem.
cellular 0/0/0 microcode activate firmware-id	Activates the specified modem firmware.



Note

Once you perform the modem firmware switching, you need to perform the modem power cycle using **test cellular unit modem-power-cycle** command. To enable test commands, you should enter the **service internal** command in global configuration mode.

This example shows displaying the list of firmware images using **show cellular unit microcode** command and activating a specific firmware package using **cellular microcode activate firmware-id** command.

```
Router# show cellular 0/1/0 microcode
Modem:
```

```
-----
ID   Carrier           Technology  Version   Status
1   Verizon            CDMA       02000007  INACTIVE
2   Generic            UMTS       02010303  ACTIVE
3   Sprint              CDMA       02010001  INACTIVE
4   China Telecom      CDMA       02000001  INACTIVE
```

```
Router# cellular 0/0/0 microcode activate 2
```

```
*****
```

```
The interface will be Shut Down for Firmware Activation This will terminate any active
data connections.
```

```
*****
```

```
Please wait while selected firmware is activated ...
```

```
Modem radio has been turned off.
```

```
*Feb 6 13:08:13.627: %CISCO800-2-MODEM_DOWN: Cellular0/0/0 modem is now DOWN.....
```

```
Firmware activated successfully
```

Related Documents

Topic	Document Title
GSM	Configuring Cisco EHWIC and 880G for 3.7G (HSPA+)/3.5G (HSPA)
CDMA	Configuring Cisco EHWIC and 880G for 3G (EV-DO Rev A)
DM Log Collection and modem crashdump support	Cisco 3G and 4G Serviceability Enhancement User Guide
MIB <ul style="list-style-type: none"> CISCO-ENTITY-VENDORTYPE-OID-MIB CISCO-WAN-3G-MIB 	MIB Locator Tool

