



Modem Management Commands

This chapter describes the commands that manage modems existing inside access servers or routers. Cisco Systems does not consider external modems, which physically connect to an access server or router through an asynchronous cable, to be part of its modem management paradigm.

For configuration information and examples, refer to the “Managing Modems” chapter in the *Dial Solutions Configuration Guide*.

clear modem

To reset a manageable modem's hardware on an access server or router, use the **clear modem EXEC** command.

clear modem [*slot/port* | **group** *group-number*]

Syntax Description

slot/port Slot and modem port number. Remember to include the forward slash (/) when entering this variable.

group *group-number* Modem group.

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

This command resets the specified modem or group of modems, or all the modems in the system. The modem hardware is reset for modems that are idle or busied out for long periods of time.

You can construct a logical modem group using the **interface group-async** command.

Example

The following example resets the hardware for manageable modem 1/1:

```
clear modem 1/1
```

clear modem at-mode

To clear an attention (AT) directly connected session to a manageable Microcom modem from a second Telnet session, use the **clear modem at-mode EXEC** command.

clear modem at-mode *slot/port*

Syntax Description

| | |
|------------------|--|
| at-mode | An AT directly connected session. |
| <i>slot/port</i> | Slot and modem port number. Remember to include the forward slash (/) when entering this variable. |

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

An AT directly connected session is usually initiated and closed from the same Telnet session by using the **modem at-mode** command and **Ctrl-C**. However, you can clear an AT directly connected session that was mistakenly left open by enabling the **clear modem at-mode** command from a second Telnet session in to the access server.

Examples

The following example executes the **modem at-mode** command from a Telnet session:

```
modem at-mode 1/1
```

The following example executes the **clear modem at-mode** command from a second Telnet session while the first Telnet session is connected to the modem:

```
router# clear modem at-mode 1/1  
clear "modem at-mode" for modem 1/1 [confirm]  
router#
```

The following output is displayed in the first Telnet session after the modem is cleared by the second Telnet session:

```
Direct connect session cleared by vty0 (171.69.1.164)
```

Related Commands

You can use the master indexes or search online to find documentation or related commands.

modem at-mode

clear modem counters

To clear the statistical counters on a manageable modem installed in an access server, use the **clear modem counters** EXEC command.

clear modem counters [*slot/port* | **group** *group-number*]

Syntax Description

slot/port (Optional) Slot and modem port number. Remember to include the forward slash (/) when entering this variable.

group *group-number* (Optional) Modem group.

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Entering the **clear modem counters** command without specifying an optional keyword or argument resets the modem statistics on each modem and the summary statistics displayed in the **show modem summary** command.

You can create a logical modem group using the **interface group-async** command.

Example

The following example clears the statistical counters on manageable modem 1/1:

```
clear modem counters 1/1
```

copy modem

To copy modem firmware to integrated modems in an access server, use the **copy modem EXEC** command.

```
copy {flash | tftp | rcp} modem
```

Syntax Description

| | |
|--------------|---|
| flash | Copies firmware from Flash memory to the modems. |
| tftp | Copies firmware from a local TFTP server on your network to the modems. |
| rcp | Copies firmware from a local rcp server on your network to the modems. |

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

After you enable this command, you are asked to provide the download destination (a *slot/port* or **all**), the remote host name, and the path leading to the source modem firmware.

If a modem that you want to upgrade is busy with a call when the **copy modem** command is enabled, the upgrade for that modem yields until the active call is dropped. All other idle modems in the upgrade range proceed with the downloading operation.

Examples

The following example copies the modem firmware file called `modem_upgrade` from the TFTP server called `Modem_Server` to modem 2/0, which is installed in a Cisco AS5200 access server:

```
router# copy tftp modem
Modem Numbers (<slot>/<port>[-<slot>/<port>] | group <number> | all)? 2/0
Address or name of remote host [UNKNOWN]? Modem_Server
Source file name? dirt/elem/modem_upgrade
Accessing file 'dirt/elem/modem_upgrade on Modem_Server...'
Loading dirt/elem/modem_upgrade .from 223.255.254.254 (via Ethernet0): ! [OK]

Loading dirt/elem/modem_upgrade from 223.255.254.254 (via Ethernet0):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 237503/278528 bytes]

router#
%MODEM-5-DL_START: Modem (2/0) started firmware download
%MODEM-5-DL_GOOD: Modem (2/0) completed firmware download:
MNPCClass10V.34/V.FCModemRev1.0.23/85.23/85
```

As shown in this example, you might want to upgrade and test one modem's firmware before upgrading the firmware of all the modems on the access server, as shown in the next example.

This example downloads the same modem firmware file from the TFTP server to all the modems in the Cisco AS5200 access server:

```

router# copy tftp modem
Modem Numbers (<slot>/<port>[-<slot>/<port>] | group <number> | all)? all
Address or name of remote host [UNKNOWN]? Modem_Server
Source file name? dirt/elem/modem_upgrade
Accessing file 'dirt/elem/modem_upgrade' on Modem_Server...
Loading dirt/elem/modem_upgrade .from 223.255.254.254 (via Ethernet0): ! [OK]

Loading dirt/elem/modem_upgrade from 223.255.254.254 (via Ethernet0):
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 237503/278528 bytes]

router#
%MODEM-5-DL_START: Modem (2/0) started firmware download
%MODEM-5-DL_START: Modem (2/1) started firmware download
%MODEM-5-DL_START: Modem (2/2) started firmware download
%MODEM-5-DL_START: Modem (2/3) started firmware download
%MODEM-5-DL_START: Modem (2/4) started firmware download
%MODEM-5-DL_START: Modem (2/5) started firmware download
%MODEM-5-DL_START: Modem (2/6) started firmware download
%MODEM-5-DL_START: Modem (2/7) started firmware download
%MODEM-5-DL_START: Modem (2/8) started firmware download
%MODEM-5-DL_START: Modem (2/9) started firmware download
%MODEM-5-DL_START: Modem (2/10) started firmware download
%MODEM-5-DL_START: Modem (2/11) started firmware download
%MODEM-5-DL_START: Modem (2/12) started firmware download
%MODEM-5-DL_START: Modem (2/13) started firmware download
%MODEM-5-DL_START: Modem (2/14) started firmware download
%MODEM-5-DL_START: Modem (2/15) started firmware download
%MODEM-5-DL_START: Modem (2/16) started firmware download
%MODEM-5-DL_START: Modem (2/17) started firmware download
%MODEM-5-DL_START: Modem (2/18) started firmware download
%MODEM-5-DL_START: Modem (2/19) started firmware download
%MODEM-5-DL_START: Modem (2/20) started firmware download
%MODEM-5-DL_START: Modem (2/21) started firmware download
%MODEM-5-DL_START: Modem (2/22) started firmware download
%MODEM-5-DL_START: Modem (2/23) started firmware download
%MODEM-5-DL_GOOD: Modem (2/2) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/10) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/4) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/6) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/7) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/12) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/11) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/13) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/1) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/14) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/19) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/22) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/5) completed firmware download:
MNPCclass10V.34/V.FCModemRev1.0.23/85.23/85

```

```
%MODEM-5-DL_GOOD: Modem (2/8) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/9) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/17) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/0) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/3) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/21) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/16) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/15) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/18) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/20) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
%MODEM-5-DL_GOOD: Modem (2/23) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
```

The following example copies the modem firmware file called STAR.M from Flash memory to the integrated modem 1/2:

```
router# copy flash modem
Modem Numbers (<slot>/<port> | group <number> | all)? 1/2

System flash directory:
File Length Name/status
  1 3539820 as5200-i-m.allcookies
  2 239203 STAR.M
  3 23072 BOOT.105 [3802288 bytes used, 4586320 available, 8388608 total]
Source file name? STAR.M
router#
%MODEM-5-DL_START: Modem (1/2) started firmware download
%MODEM-5-DL_GOOD: Modem (1/2) completed firmware download:
MNPClass10V.34/V.FCModemRev1.0.23/85.23/85
router#
```

modem answer-timeout

To set the amount of time that the Cisco IOS software waits for the Clear to Send (CTS) signal after raising the data terminal ready (DTR) signal in response to RING, use the **modem answer-timeout** line configuration command. Use the **no** form of this command to revert to the default value.

modem answer-timeout *seconds*
no modem answer-timeout

Syntax Description

seconds Specifies the timeout interval in seconds.

Default

15 seconds

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 10.0.

This command is useful for modems that take a long time to synchronize to the appropriate line speed.

For more information, see the “Configuring Modem Support and Asynchronous Devices” chapter in the *Dial Solutions Configuration Guide*.

Example

The following example sets the timeout interval to 20 seconds for the modem connected to lines 3 through 13:

```
line 3 13
  modem answer-timeout 20
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem callin
modem inout

modem at-mode

To open a directly connected session and enter AT command mode, which is used for sending AT commands to Microcom manageable modems, use the **modem at-mode EXEC** command.

modem at-mode *slot/port*

Syntax Description

slot/port Slot and modem port number. Remember to include the forward slash (/) when entering this variable.

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Manageable modems return “OK” if the AT command you transmit is successfully enabled. Press **Ctrl-C** after transmitting an AT command to close the directly connected session.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example opens a directly connected session on modem 1/1, enters AT command mode on modem 1/1, and transmits the AT command **ATH** through the out-of-band feature of modem 1/1:

```
router# modem at-mode 1/1
You are now entering AT command mode on modem (slot 1 / port 1).
Please type CTRL-C to exit AT command mode.
at%v

MNP Class 10 V.34/V.FC Modem Rev 1.0/85

OK
at\s

IDLE          000:00:00
LAST DIAL

NET ADDR:     FFFFFFFF
MODEM HW: SA 2W United States
4 RTS 5 CTS 6 DSR - CD 20 DTR - RI
MODULATION    IDLE
MODEM BPS     28800  AT%G0
MODEM FLOW    OFF    AT\G0
MODEM MODE    AUT    AT\N3
```

modem at-mode

| | | |
|---------------|--------|--------|
| V.23 OPR. | OFF | AT%F0 |
| AUTO ANS. | ON | ATS0=1 |
| SERIAL BPS | 115200 | AT%U0 |
| BPS ADJUST | OFF | AT\J0 |
| SPT BPS ADJ. | 0 | AT\W0 |
| ANSWER MESSGS | ON | ATQ0 |
| SERIAL FLOW | BHW | AT\Q3 |
| PASS XON/XOFF | OFF | AT\X0 |
| PARITY | 8N | AT |

Related Commands

You can use the master indexes or search online to find documentation of related commands.

clear modem at-mode

modem at-mode-permit

To permit a Microcom modem to accept a directly connected session, use the **modem at-mode-permit** line configuration command. The **no** form of this command disables permission for modems to accept a direct connection.

modem at-mode-permit
no modem at-mode-permit

Syntax Description

This command has no keywords or arguments.

Default

Enabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

After you enter this command, enter the **modem at-mode** command to enable a directly connected session on the modem. From AT command mode, you can enter AT commands directly from your terminal session.

For a complete list of supported AT commands, refer to the AT command documentation that came with your access server or router.

The **no modem at-mode-permit** command disables a modem from accepting a direct connection, which is useful for ensuring modem security.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example permits the modem connected to TTY line 1 to accept a directly connected session:

```
line 1
  modem at-mode-permit
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

clear modem at-mode
modem at-mode

modem autoconfigure discovery

To configure a line to discover what kind of modem is connected to the router and to configure that modem automatically, use the **modem autoconfigure discovery** line configuration command. Use the **no** form of this command to disable this feature.

modem autoconfigure discovery

Syntax Description

This command has no arguments or keywords.

Default

This command has no default.

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.1.

The modem is identified each time the line is reset. If a modem cannot be detected, the line continues retrying for 10 seconds. When the modem type is determined, this information remains stored until the modem is recycled or disconnected. Discovery mode is much slower than configuring a line directly.

Each time the modem is reset (every time a chat reset script is executed), a string of commands is sent to the modem, the first one being “return to factory-defaults.”

Example

The following example discovers whatever kind of modem is attached to the router or access server:

```
modem autoconfigure discovery
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem autoconfigure type

modem autoconfigure type

To direct a line to attempt to configure the attached modem using the entry for *modem-name*, use the **modem autoconfigure type** line configuration command. Use the **no** form of this command to disable this feature.

```
modem autoconfigure type modem-name  
no modem autoconfigure type
```

Syntax Description

modem-name The name of the modem (such as Codex_3260).

Default

This command has no default.

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.1.

The modem is reconfigured each time the line goes down.

Example

The following example automatically configures the attached modem using the *codex_3260* modemcap entry:

```
modem autoconfigure type Codex_3260
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem autoconfigure discovery

modem autotest

To automatically and periodically perform a modem diagnostics test for modems inside the access server or router, use the **modem autotest** global configuration command. Use the **no** form of this command to disable or turn off the modem autotest service.

modem autotest {**error** *threshold* | **minimum** *modem* | **time** *hh:mm* [*interval*] }
no modem autotest

Syntax Description

| | |
|-------------------------------|---|
| error <i>threshold</i> | Maximum modem error threshold. When the system detects this many errors with the modems, the modem diagnostics test is automatically triggered. Specify a <i>threshold</i> count between 3 and 50. |
| minimum <i>modem</i> | Minimum number of modems that will remain untested and available to accept calls during each test cycle. You can specify between 5 and 48 modems. The default is 6 modems. |
| time <i>hh:mm</i> | Time you want the modem autotest to begin. You must use the military time convention and a required colon (:) between the hours and minutes variables for this feature. For example, 1:30 a.m. is issued as 01:30. |
| <i>interval</i> | (Optional) Long-range time variable used to set the modem autotest more than one day in advance. The range of hours is between 1 hour and 168 hours. For example if you want to run the test once per week, issue 168. There are 168 hours in one week. |

Default

Disabled

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.3.

Example

The following example shows how to set the modem autotest to run once per week at 3:00 a.m. Additionally, the autotest will activate if the system detects a modem error count higher than 40 errors.

- Step 1** Determine the current time set on the access server with the **show clock** EXEC command. In this example, the time and date set is 3:00 p.m, Monday, August 25, 1997:

```
router# show clock
*15:00:01.031 EST Aug 25 1997
```

- Step 2** Enter global configuration mode and set the time you want the modem autotest to activate. In this example, the access server is configured to run the modem autotest each ongoing Tuesday at 3:00 a.m:

```
router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router(config)# modem autotest time 03:00 168
```

- Step 3** Configure the autotest to activate if the system detects a high modem error count. In this example, the autotest activates if the system detects a modem error count higher than 40 errors. For the list of modem errors that are monitored by the **modem autotest** command, see the **show modem call-stats** command.

```
router(config)# modem autotest error 40
router(config)# exit
router#
%SYS-5-CONFIG_I: Configured from console by console
router#
```

- Step 4** Display the results of the modem autotest once the test has run through a test cycle by issuing the **show modem test** EXEC command:

```
router# show modem test
Date Time           Modem  Test           Reason           State Result
5/15 07:25:17 AM  1/0   Back-To-Back   TIME INTERVAL   Idle  FAIL
5/15 07:25:17 AM  1/1   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/2   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/3   Back-To-Back   TIME INTERVAL   Idle  FAIL
5/15 07:25:17 AM  1/4   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/5   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/6   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/7   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/8   Back-To-Back   TIME INTERVAL   Idle  PASS
5/15 07:25:17 AM  1/9   Back-To-Back   TIME INTERVAL   Idle  PASS
...
```

Alternatively, you can view which modems were marked bad by the modem autotest by issuing the **show modem** EXEC command. Bad modems are marked by the letter B. In this example, modems 1/0 and 1/3 are marked bad (identified with a B), which takes them out of commission and unable to participate in dial services:

```
router# show modem
Mdm  Usage  Inc calls  Out calls  Busied  Failed  No  Succ
      0%      Succ  Fail  Succ  Fail  Out  Dial  Answer  Pct.
B 1/0 0%      0      0      0      0      1      0      0      0%
  1/1 0%      0      0      0      0      3      0      0      0%
  1/2 0%      0      0      0      0      1      0      0      0%
B 1/3 0%      0      0      0      0      1      0      0      0%
  1/4 0%      0      0      0      0      1      0      0      0%
  1/5 0%      0      0      0      0      1      0      0      0%
  1/6 0%      0      0      0      0      1      0      0      0%
```

modem autotest

| | | | | | | | | | |
|------|----|---|---|---|---|---|---|---|----|
| 1/7 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/8 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/9 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/10 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/11 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/12 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/13 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/14 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/15 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/16 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/17 | 0% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0% |
| 1/18 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 1/19 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 1/20 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 1/21 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 1/22 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| 1/23 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |

modem bad

To remove an integrated modem from service and indicate it as suspected or proven to be inoperable, use the **modem bad** line configuration command. Use the **no** form of this command to restore a modem to service.

modem bad
no modem bad

Syntax Description

This command has no keywords or arguments.

Default

Disabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

If you mark a modem as inoperable, it appears as *Bad*—without the asterisk (*)—in the *Status* column of the **show modem** command output. A modem marked inoperable by the **modem startup-test** command appears as *Bad** in the **show modem** command output. Use the **no modem bad** command to unmark a modem as *Bad** or *Bad* and restore it for dial-up connection services.

Note Only idle modems can be marked bad by the **modem bad** command. If you want to mark a modem bad that is actively supporting a call, first issued the **modem shutdown** command then issue the **modem bad** command.

Example

The first part of the following example shows a successful connection between modem 2/1 and modem 2/0, which verifies normal operating conditions between these two modems. However, when modem 2/1 is tested against modem 2/3, the back-to-back modem test fails. Therefore, modem 2/3 is suspected or proven to be inoperable. Modem 2/3 is removed from dial-up services through the use of the **modem bad** command on line 28.

```
router# test modem back-to-back 2/1 2/0
Repetitions (of 10-byte packets) [1]: 10
router#
%MODEM-5-B2BCONNECT: Modems (2/1) and (2/0) connected in back-to-back test: CONNECT9600/REL-MNP
%MODEM-5-B2BMODEMS: Modems (2/0) and (2/1) completed back-to-back test: success/
packets = 20/20
router# test modem back-to-back 2/1 2/3
Repetitions (of 10-byte packets) [1]: 10
router#
%MODEM-5-BADMODEMS: Modems (2/3) and (2/1) failed back-to-back test: NOCARRIER
router# configure terminal
router(config)# line 28
```

modem bad

```
router(config-line)# modem bad  
router(config-line)# end
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem startup-test

show modem

test modem back-to-back

modem buffer-size

To configure the size of the history event queue buffer for integrated modems installed in an access server or router, use the **modem buffer-size** command.

modem buffer-size *number*

Syntax Description

| | |
|---------------|---|
| <i>number</i> | Defined number of modem events that each manageable modem is able to store. |
|---------------|---|

Default

100 modem events

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

A large buffer size uses significant amounts of processing memory. If the processing memory is running low, reduce the modem buffer size.

To view modem events, use the **show modem log** command.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example enables each modem in the access server to store 150 modem events:

```
modem buffer-size 150
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

show modem log

modem busyout

To gracefully disable a modem from dialing or answering calls, use the **modem busyout** line configuration command. Use the **no** form of this command to re-enable a modem.

modem busyout
no modem busyout

Syntax Description

This command has no keywords or arguments.

Default

Disabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

The disabling action is not executed until the active modem returns to an idle state. No active connections are interrupted when you use this command.

Example

The following example disables the modem associated with line 1 from dialing and answering calls. You do not specify a *slot/port* number with this command:

```
line 1
modem busyout
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem shutdown

modemcap edit

To change a modem value that was returned from the **show modemcap** command, use the **modemcap edit** global configuration command.

```
modemcap edit modem-name attribute value
```

Syntax Description

| | |
|-------------------|---|
| <i>modem-name</i> | Name of the modem whose values are being edited. |
| <i>attribute</i> | Modem capability, or attribute, as defined by the show modemcap command. |
| <i>value</i> | The AT command equivalent (such as &F). |

Default

This command has no default.

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.1.

Modemcaps are printed within the configuration file. You can edit them using this command.

Configure one attribute of one modem at a time. See the modem-capability values defined by **show modemcap** command.

Example

The following example adds the factory default entry, **&F**, to the configuration file. This entry, and others like it, are stored in a database that is referenced by the configuration file.

```
modemcap edit Codex_3250 factory-default &F
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modemcap entry
show modemcap

modemcap entry

To store and compress information about the capability of a specified modem, use the **modemcap entry** global configuration command. Use the **no** form of this command to disable this feature.

modemcap entry *modem-type*

Syntax Description

modem-type Type of supported modem as specified in Table 10.

Default

The capability values that exist in the specified modem at the time that the command is issued.

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.1.

This command displays the capability of the specified modem.

Modemcaps are printed within the configuration file and are intended to be edited using the **modemcap edit** command. The **modemcap entry** command does not display values that are not set in the modem.

Use **modemcap entry** with the **show modemcap** command to interpret the capability of the specified modem. Table 10 lists the modemcap entries for supported modems.

Table 10 Modemcap Entries for Supported Modems

| Modem Type | Output |
|-----------------------|---|
| hayes_optima | FD=&F:AA=S0=1:DTR=&D2:CD=&C1:TPL=default. |
| codex_3260 | FD=&F:AA=S0=1:CD=&C1:DTR=&D2:HFL=*FL3:SPD=*SC1:BER=*SM3:BCP=*DC1:NER=*SM1:NCP=*DC0:NEC=E0:NRS=Q1:CID=&S1. |
| usr_courier | HFL=&H1&R2:SPD=&B1:BER=&M4:BCP=&K1:NER=&M0:NCP=&K0:TPL=default. |
| usr_sportster | TPL=usr_courier. |
| hayes_optima | HFL=&K3:BER=&Q5:BCP=&Q9:NER=&Q0:NCP=&Q0:TPL=default. |
| viva | HFL=&K3:BER=&Q5:BCP=%C1:NER=&Q6:NCP=%C0:TPL=default. |
| teletbit_t3000 | HFL=S58=2:BER=S180=3:BCP=S190=1:NER=S180=0:NCP=S190=0:TPL=default. |

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modemcap edit
show modemcap

modem hold-reset

To reset and isolate integrated modems for extensive troubleshooting, use the **modem hold-reset** line configuration command. Use the **no** form of this command to restart a modem.

modem hold-reset
no modem hold-reset

Syntax Description

This command has no keywords or arguments.

Default

Disabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

This command is also used to reset a modem that is frozen in a suspended state. Disable the suspended modem with the **modem hold-reset** command, and then restart initialization with the **no modem hold-reset** command.

The **modem hold-reset** command for the V.110 port module resets the processor on board the module only if the command is executed on all 12 ports. If the **modem hold-reset** command is issued on only a portion of the V.110 ports, the processor will not reset.

Example

The following example disables the suspended modem using tty line 4 and resets the modem's initialization:

```
router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router(config)# line 4
router(config-line)# modem hold-reset
router(config-line)# no modem hold-reset
```

The following examples resets a 12-port V.110 port module. You must specify the entire tty line range for the entire bank of ports.

```
router# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
router(config)# line 1 12
router(config-line)# modem hold-reset
router(config-line)# no modem hold-reset
router(config-line)# exit
router(config)#
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem autotest

modem poll retry

To set the maximum number of polling attempts used to retrieve performance statistics from a modem installed in an access server or router, use the **modem poll retry** global configuration command.

modem poll retry *number*

Syntax Description

| | |
|---------------|---|
| <i>number</i> | Maximum number of polling attempts. The configuration range is from 0 to 10 attempts. |
|---------------|---|

Default

Three polling attempts

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Higher settings cause the software to keep polling one modem for status and to avoid polling other modems, which decreases the amount of statistics that are gathered.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example configures the server to attempt to retrieve statistics from a local modem up to five times before discontinuing the polling effort:

```
modem poll retry 5
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

clear modem
modem poll time
modem status-poll

modem poll time

To set the time interval between modem polls, which are used to periodically retrieve and report modem statistics, use the **modem poll time** global configuration command. To restore the 12-second default setting, use the **no** form of this command.

modem poll time *seconds*
no modem poll time *seconds*

Syntax Description

seconds Number of seconds between polls. The configuration range is from 2 to 120 seconds.

Default

12 seconds

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example sets the time interval between polls to 10 seconds:

```
modem poll time 10
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem poll retry
modem status-poll

modem recovery-time

To set the maximum amount of time the call-switching module waits for a local modem to respond to a request before it is considered locked in a suspended state, use the **modem recovery-time** global configuration command. The **no** form of this command sets a 5-minute response time, which is the default setting.

modem recovery-time *minutes*
no modem recovery-time

Syntax Description

minutes Maximum amount of time local modems wait for a response.

Default

5 minutes

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

After the call-switching module resets a suspended modem, it recovers to a default call switching module state.

Example

The following example configures the call-switching module to wait for 8 minutes:

```
modem recovery-time 8
```

modem shutdown

To abruptly shut down an active or idle modem installed in an access server or router, use the **modem shutdown** line configuration command. Use the **no** form of this command to take the modem out of a shutdown state and place it back in service.

modem shutdown
no modem shutdown

Syntax Description

This command has no keywords or arguments.

Default

Disabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Enable the **no modem shutdown** command to restore to service a modem that has been shut down.

Example

The following example abruptly shuts down the modem associated with line 2. All active calls on the modem are dropped immediately.

```
configure terminal
line 2
modem shutdown
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem busyout

modem startup-test

To perform diagnostic testing on each integrated modem during the rebooting process, use the **modem startup-test** global configuration command. Use the **no** form of this command to disable startup testing.

modem startup-test
no modem startup-test

Syntax Description

This command has no keywords or arguments.

Default

Enabled

Command Mode

Global configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

The results of the modem startup test are displayed in the *Status* column of the **show modem** command's output. Modems that pass the diagnostic test are marked as *Idle*, *Busy*, *Downloading*, and *Reset*. Modems that fail the diagnostic test are marked as *Bad**. These modems cannot be used for call connections. Depending on how many modems are installed, this diagnostic test may take from 5 to 15 minutes to complete.

Perform additional testing on an inoperative modem by executing the **test modem back-to-back** command. The **no modem startup-test** command disables startup testing.

Example

The following example performs a startup test on the integrated Cisco AS5200 modems:

```
configure terminal
modem startup-test
```

Display the results of the modem startup test after you restart the system by enabling the **show modem** command.

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem autotest
show modem
test modem back-to-back

modem status-poll

To poll for modem statistics through a modem's out-of-band feature, use the **modem status-poll** line configuration command. Use the **no** form of this command to disable status polling through the out-of-band feature for a specified modem.

modem status-poll
no modem status-poll

Syntax Description

This command has no keywords or arguments.

Default

Enabled

Command Mode

Line configuration

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

This command applies only to manageable modems that have out-of-band ports.

Note This command does not apply to nonmanageable modems, which do not have out-of-band ports.

Example

The following example enables modem status polling through TTY line 1:

```
configure terminal
line 1
modem status-poll
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem poll retry
modem poll time

show modem

To display a high-level performance report for all the modems or a single modem inside an access server or router, use the **show modem EXEC** command.

show modem [*slot/port* | **group number**]

Syntax Description

- slot/port* (Optional) Specifies the location of a slot and modem port. If this number is not specified, statistics for all connected modems are displayed. Remember to include the forward slash (/) when entering this variable.
- group number** (Optional) Specifies a modem group to which a specified modem belongs. The group number range is between 1 and 200.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Displays

The following display shows output information for the **show modem** command for two V.34 modem cards inserted in a Cisco AS5200:

```
router# show modem
```

| Mdm | Usage | Inc calls | | Out calls | | Busied Out | Failed Dial | No Answer | Succ Pct. |
|--------|-------|-----------|------|-----------|------|------------|-------------|-----------|-----------|
| | | Succ | Fail | Succ | Fail | | | | |
| * 1/0 | 17% | 74 | 3 | 0 | 0 | 0 | 0 | 0 | 96% |
| * 1/1 | 15% | 80 | 4 | 0 | 0 | 0 | 1 | 1 | 95% |
| * 1/2 | 15% | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 100% |
| 1/3 | 21% | 62 | 1 | 0 | 0 | 0 | 0 | 0 | 98% |
| 1/4 | 21% | 49 | 5 | 0 | 0 | 0 | 0 | 0 | 90% |
| * 1/5 | 18% | 65 | 3 | 0 | 0 | 0 | 0 | 0 | 95% |
| * 1/6 | 19% | 58 | 2 | 0 | 0 | 0 | 0 | 0 | 96% |
| * 1/7 | 17% | 67 | 5 | 0 | 0 | 0 | 1 | 1 | 93% |
| * 1/8 | 20% | 68 | 3 | 0 | 0 | 0 | 0 | 0 | 95% |
| 1/9 | 16% | 67 | 2 | 0 | 0 | 0 | 0 | 0 | 97% |
| 1/10 | 18% | 56 | 2 | 0 | 0 | 0 | 1 | 1 | 96% |
| * 1/11 | 15% | 76 | 3 | 0 | 0 | 0 | 0 | 0 | 96% |
| * 1/12 | 16% | 62 | 1 | 0 | 0 | 0 | 0 | 0 | 98% |
| 1/13 | 17% | 51 | 4 | 0 | 0 | 0 | 0 | 0 | 92% |
| 1/14 | 16% | 51 | 5 | 0 | 0 | 0 | 0 | 0 | 91% |
| 1/15 | 17% | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 100% |
| 1/16 | 15% | 73 | 3 | 0 | 0 | 0 | 0 | 0 | 96% |
| 1/17 | 17% | 67 | 2 | 0 | 0 | 0 | 0 | 0 | 97% |
| 1/18 | 17% | 61 | 2 | 0 | 0 | 0 | 0 | 0 | 96% |
| * 1/19 | 17% | 74 | 2 | 0 | 0 | 0 | 0 | 0 | 97% |
| 1/20 | 16% | 65 | 1 | 0 | 0 | 0 | 0 | 0 | 98% |
| * 1/21 | 16% | 58 | 3 | 0 | 0 | 0 | 0 | 0 | 95% |
| * 1/22 | 18% | 56 | 4 | 0 | 0 | 0 | 0 | 0 | 93% |
| * 1/23 | 20% | 60 | 4 | 0 | 0 | 0 | 0 | 0 | 93% |

The following display shows output information for the **show modem** command for two V.110 modem cards inserted in a Cisco AS5200:

```

router# show modem
      Mdm  Usage      Inc calls      Out calls  Busied  Failed  No      Succ
      Mdm  Usage      Succ  Fail      Succ  Fail      Out      Dial  Answer  Pct.
0/0      0%      -      -      -      -      0      0      0      -
0/1      0%      -      -      -      -      0      0      0      -
0/2      0%      -      -      -      -      0      0      0      -
0/3      0%      -      -      -      -      0      0      0      -
0/4      0%      -      -      -      -      0      0      0      -
0/5      0%      -      -      -      -      0      0      0      -
0/6      0%      -      -      -      -      0      0      0      -
0/7      0%      -      -      -      -      0      0      0      -
0/8      0%      -      -      -      -      0      0      0      -
0/9      0%      -      -      -      -      0      0      0      -
0/10     0%      -      -      -      -      0      0      0      -
0/11     0%      -      -      -      -      0      0      0      -
1/0      0%      -      -      -      -      0      0      0      -
1/1      0%      -      -      -      -      0      0      0      -
1/2      0%      -      -      -      -      0      0      0      -
1/3      0%      -      -      -      -      0      0      0      -
1/4      0%      -      -      -      -      0      0      0      -
1/5      0%      -      -      -      -      0      0      0      -
1/6      0%      -      -      -      -      0      0      0      -
1/7      0%      -      -      -      -      0      0      0      -
1/8      0%      -      -      -      -      0      0      0      -
1/9      0%      -      -      -      -      0      0      0      -
1/10     0%      -      -      -      -      0      0      0      -
1/11     0%      -      -      -      -      0      0      0      -

```

Table 10 describes the fields in the previous display.

Table 11 Show Modem Field Descriptions

| Field | Description |
|-----------|---|
| Mdm | Slot and modem port number. Also, the following modem states can appear to the left of a slot/modem port number: b—Modem was removed from service with the modem shutdown command or the modem busyout command. B—Modem is suspected to be inoperable or bad. No calls can be made with this modem. The letter B can also mean that a modem firmware download failed for the specified modem. In this case, try unmarking the modem as bad with the no modem bad command and upgrading the modem firmware again. d—The RAM-based DSP code, which supports K56flex, is not configured. The modem will revert to transmitting at 33.6 kbps. D—Modem is currently downloading firmware. R—Modem is held and isolated in a suspended state by the modem hold-reset command. T—Modem is conducting a back-to-back test with another modem. *—Modem is connected or dialing. |
| Usage | Percentage of the total system uptime that all modems are in use. |
| Inc calls | Number of incoming calls that successfully and unsuccessfully connected to a modem. |
| Out calls | Number of outgoing calls that successfully and unsuccessfully dialed out from an available modem. |

Table 11 Show Modem Field Descriptions (Continued)

| Field | Description |
|-------------|---|
| Busied Out | Number of modems that have been manually removed from service. |
| Failed Dial | Number of modems that attempted to dial into the network but failed to make a connection. |
| No Answer | Number of modems that detected an incoming ring but failed to answer the call. |
| Succ Pct. | Successful connection percentage of total available modems. |

The following example shows the statistics and current configurations for the manageable modem 2/10, which exists on a V.34 modem card in a Cisco AS5200. A dash (-) indicates a field that is not available on nonmanageable modems. An x indicates a field that is available and active on manageable modems. See Table 12 for a description of the fields displayed by the **show modem** command.

```

router> show modem 2/10
Mdm Typ Status Tx/Rx G Duration TX RX RTS CTS DSR DCD DTR
2/10 V34 Idle 33600/33600 1 00:00:00 x x x x

Modem 2/10, Microcom MNP10 V34 Modem (Select), Async35, TTY35
Firmware (Boot) Rev: 2.1(9) (1.0(5))
Modem config: Incoming and Outgoing
Protocol: reliable/MNP, Compression: V42bis
Management port config: Status polling and AT session
Management port status: Status polling and AT session
TX signals: 0 dBm, RX signals: 0 dBm

Last clearing of "show modem" counters never
0 incoming completes, 0 incoming failures
0 outgoing completes, 0 outgoing failures
0 failed dial attempts, 0 ring no answers, 0 busied outs
0 no dial tones, 0 dial timeouts, 0 watchdog timeouts
0 no carriers, 0 link failures, 0 resets 0 recover oob
0 protocol timeouts, 0 protocol errors, 0 lost events

Connection Speeds 75 300 600 1200 2400 4800
# of connections 0 0 0 0 0 0
Connection Speeds 7200 9600 12000 14400 16800 19200
# of connections 0 0 0 0 0 0
Connection Speeds 21600 24000 26400 28800 31200 33600
# of connections 0 0 0 0 0 1
    
```

The following example displays example output for a nonmanageable V.34 modem module. Notice that unavailable fields are marked with dashes (-):

```

router# show modem 1/1
Mdm Typ Status Tx/Rx G Duration TX RX RTS CTS DSR DCD DTR
1/1 - Idle 19200/19200 0 00:01:05 - - - - - -

Modem 1/1, AS5200 Non-Manageable Modem
Firmware (Boot) Rev: Unknown
Modem config: Unknown
Management config: Not Manageable Modem

Last clearing of "show modem" counters never
- incoming completes, - incoming failures
- outgoing completes, - outgoing failures,
0 failed dial attempts, 0 ring no answers, 0 busied outs
0 no dial tones, 0 dial timeouts, 0 watchdog timeouts
- no carriers, - link failures, 0 resets
- protocol timeouts, - protocol errors, - lost events
    
```

| | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|
| Connection Speeds | 75 | 300 | 600 | 1200 | 2400 | 4800 |
| # of connections | 0 | 0 | 0 | 0 | 0 | 0 |
| Connection Speeds | 7200 | 9600 | 12000 | 14400 | 16800 | 19200 |
| # of connections | 0 | 0 | 0 | 0 | 0 | 0 |
| Connection Speeds | 21600 | 24000 | 26400 | 28800 | 31200 | 33600 |
| # of connections | 0 | 0 | 0 | 0 | 0 | 0 |

The following display shows output information for the **show modem slot/port** command for V.110 modem cards:

```
router# show modem 0/1
Mdm Typ      Status Tx/Rx    G Duration TX  RX  RTS  CTS  DSR  DCD  DTR
0/1          Idle   -/-      1 00:00:00 -  -  -   -   -   -   -
```

```
Modem 0/1, V.110 Terminal Adaptor (Unmanaged), Async2, TTY2
Firmware (Boot) Rev: Unmanaged (Unmanaged)
Modem config: Incoming and Outgoing
Management config: Unmanaged
```

```
Last clearing of "show modem" counters never
- incoming completes, - incoming failures
- outgoing completes, - outgoing failures
0 failed dial attempts, 0 ring no answers, 0 busied outs
- no dial tones, - dial timeouts, 0 watchdog timeouts
- no carriers, - link failures, 0 resets, - recover oob
- protocol timeouts, - protocol errors, - lost events
```

| | | | | | | |
|-------------------|-------|-------|-------|-------|-------|-------|
| Connection Speeds | 75 | 300 | 600 | 1200 | 2400 | 4800 |
| # of connections | - | - | - | - | - | - |
| Connection Speeds | 7200 | 9600 | 12000 | 14400 | 16800 | 19200 |
| # of connections | - | - | - | - | - | - |
| Connection Speeds | 21600 | 24000 | 26400 | 28800 | 31200 | 32000 |
| # of connections | - | - | - | - | - | - |
| Connection Speeds | 33600 | 34000 | 36000 | 38000 | 40000 | 42000 |
| # of connections | - | - | - | - | - | - |
| Connection Speeds | 44000 | 46000 | 48000 | 50000 | 52000 | 54000 |
| # of connections | - | - | - | - | - | - |
| Connection Speeds | 56000 | | | | | |
| # of connections | - | | | | | |

The type of display output generated from the **show modem slot/port** command depends on the version of Cisco IOS software running on the router or access server. For example, the following shows example output for a 56K modem card, which carries digital modems that transmit at 56 kbps. (In truth, 56K modems do not modulate or demodulate data. A pure digital-to-digital connection is made.) See Table 12 for a description of the fields displayed by this modem card.

```
router# show modem 0/0
Mdm Typ      Status Tx/Rx    G Duration TX  RX  RTS  CTS  DSR  DCD  DTR
0/0          Idle   0/0      0 00:00:00          x   x   x           x
```

```
Modem 0/0, Microcom MNP10 K56 Modem (Select), TTY1
Firmware (Boot) Rev: 3.1(16) (3.0(4))
DSP Controller (SPX) Rev: 1.1(0) (1.1(0))
Modem config: Incoming and Outgoing
Protocol: Normal, Compression: None
Management port config: Status polling and AT session
Management port status: Status polling and AT session
TX signals: 0 dBm, RX signals: 0 dBm
```

```
Last clearing of "show modem" counters never
0 incoming completes, 0 incoming failures
0 outgoing completes, 0 outgoing failures
0 failed dial attempts, 0 ring no answers, 0 busied outs
```

show modem

```

0 no dial tones, 0 dial timeouts, 0 watchdog timeouts
0 no carriers, 0 link failures, 1 resets 0 recover oob
0 protocol timeouts, 0 protocol errors, 0 lost events

```

Transmit Speed Counters:

```

Connection Speeds      75      300      600      1200     2400     4800
# of connections        0        0        0        0        0        0
Connection Speeds     7200     9600    12000    14400    16800    19200
# of connections        0        0        0        0        0        0
Connection Speeds    21600    24000    26400    28800    31200    32000
# of connections        0        0        0        0        0        0
Connection Speeds    33600    34000    36000    38000    40000    42000
# of connections        0        0        0        0        0        0
Connection Speeds    44000    46000    48000    50000    52000    54000
# of connections        0        0        0        0        0        0
Connection Speeds    56000
# of connections        0

```

Receive Speed Counters:

```

Connection Speeds      75      300      600      1200     2400     4800
# of connections        0        0        0        0        0        0
Connection Speeds     7200     9600    12000    14400    16800    19200
# of connections        0        0        0        0        0        0
Connection Speeds    21600    24000    26400    28800    31200    32000
# of connections        0        0        0        0        0        0
Connection Speeds    33600    34000    36000    38000    40000    42000
# of connections        0        0        0        0        0        0
Connection Speeds    44000    46000    48000    50000    52000    54000
# of connections        0        0        0        0        0        0
Connection Speeds    56000
# of connections        0

```

Table 12 describes the fields in the previous four displays, which were created using the **show modem slot/port** command. This table applies to all modem module types.

Table 12 Show Modem Slot/Port Field Descriptions

| Field | Description |
|--------|--|
| Mdm | Slot and modem number. |
| Typ | Modulation type, which can be any of the following values: Bel103, Bel212, V21, V22, V22bis, V23, V32, V32bis, VFC, V34, V17, V27, V33 and K56Flx |
| Status | <p>Current status of the modem. Possible values include:</p> <ul style="list-style-type: none"> • Conn—Modem is connected to a remote host. • B—Inoperable state, which is configured by the modem bad command. • B*—Inoperable state, which is configured by the modem startup-test command during initial power-up testing. • b—Modem is busied out. This can be manually configured by the modem busyout line configuration command. • Reset—Modem is in reset mode. • D/L—Modem is downloading firmware. • Bad FW—Downloaded modem firmware is not operational. • Busy—Modem is out of service and not available for calls. • Idle—Modem is ready for incoming and outgoing calls. |

Table 12 Show Modem Slot/Port Field Descriptions (Continued)

| Field | Description |
|-------------------|---|
| Tx/Rx | Transmission and receiving speed for the most recently connected call. |
| G | Modem group number assigned to the modem. The group number 0 means the modem is not part of any group. |
| Duration | Time duration of the current call or the last call. |
| Modem functions | <p>The following modem functions are displayed on manageable modems. A field that is available and turned on is marked with an <i>x</i>. An unavailable field is marked with a dash (-).</p> <p>TX—Transmit Data. The DTE transmits data to the DCE.</p> <p>RX—Receive Data. The DCE receives data from the DTE.</p> <p>RTS—Request To Send. The DTE signals to the DCE that the DTE accepts data into its buffers.</p> <p>CTS—Clear To Send. The DCE signals to the DTE that the DCE accepts data into its buffers.</p> <p>DSR—Data Set Ready. The modem is ready to start communication.</p> <p>DCD—Data Carrier Detect. The DCE indicates to the DTE that a call is present and established with a remote modem. Dropping the DCD function terminates the session.</p> <p>DTR—Data Terminal Ready. The DTE indicates to the DCE that it accepts calls.</p> |
| Firmware | Installed modem firmware. |
| Modem config | Current modem configuration, which includes the fields Incoming, Outgoing, Incoming and Outgoing, and Unknown. |
| Protocol | Protocol the modem is running such as Normal, Direct, reliable/MNP4, and reliable/LAPM (Link Access Procedure for Modems). |
| Compression | Compression algorithm running on the modem, such as None, V42bis, and MNP5. |
| Management config | Indicates if the modem is configured for out-of-band feature polling. |
| TX signals | Transmit signal levels. For modulations that do not support signal to noise calculations, the ratio is 0. |
| RX signals | Transmit signal levels. |

Table 12 Show Modem Slot/Port Field Descriptions (Continued)

| Field | Description |
|--|--|
| Last clearing of “show modem” counters | <p>Last time the modem’s counters were cleared using the clear modem counters command. A summary of modem events also appears.</p> <ul style="list-style-type: none"> • Incoming completes and failures—Total number of incoming connection requests that the modem answered and successfully or unsuccessfully connected with the remote DCE. • Outgoing completes and failures—Total number of outgoing connection requests that the modem dialed and successfully or unsuccessfully connected with the remote DCE. • Failed dial attempts—Number of times the modem attempted to dial out but the call failed to leave the modem. • Ring no answers—Number of times the integrated modem detected ringing but did not answer the incoming call. • Busied outs—Number of times the integrated modem was intentionally taken out of service (for example, the modem busyout command was enabled on the modem). • No dial tones—Number of times the dial-out attempt failed because the modem failed to detect a dial tone. • Dial timeouts—Number of times the modem has timed out while attempting to dial. • Watchdog timeouts—Number of times the modem internal watchdog timer has expired. • No carriers—Number of times the modem disconnected because no carrier was present. • Link failures—Number of times the modem has detected a link failure. • Resets—Number of times the modem has been reset. • recover oob—Number of times the out-of-band feature has been cleared and re-initialized. • Protocol timeouts and errors—Number of times the modem protocol failed to make a call connection. • Lost events—Number of incomplete modem events performed by the modem. |
| Transmit Speed Counters: | List of connection speeds that were transmitted by the modem. |
| Receive Speed Counters: | List of connection speeds that were received by the modem. |
| Connection Speeds # of connections | <p>A complete summary of possible connection speeds and the actual number of connections that occurred at those speeds. Depending on which modem port module and version of software you are running, possible connection speeds range from 75 to 56,000 bps. The number of successful connections are displayed directly beneath the connection speed identifier. For example, the following output shows that three connections were made at 56 kbps.</p> <pre> Connection Speeds 56000 # of connections 3 </pre> |

The following example shows the sample display for modem group 1, which is composed of modem 1/0 through modem 1/23:

```
router# show modem group 1
          Incoming calls      Outgoing calls      Busied      Failed      No      Succ
Grp  Usage  Succ  Fail  Avail  Succ  Fail  Avail  Out  Dial  Ans  Pct.
1    0%    0    0    24    0    0    24    0    0    0    0%
```

Modem Group 1: 1/0, 1/1, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9, 1/10, 1/11, 1/12, 1/13,
1/14, 1/15, 1/16, 1/17, 1/18, 1/19, 1/20, 1/21, 1/22, 1/23

show modem at-mode

To display a list of the manageable Microcom modems that have open AT sessions and a list of users logged in to those sessions, use the **show modem at-mode** EXEC command.

show modem at-mode

Syntax Description

This command has no arguments or keywords.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Displays

The following output shows that modem 1/1 has one open AT directly connected session:

```
router# show modem at-mode
Active AT-MODE management sessions:
Modem      User's Terminal
1/1 0 cty 0
```

show modem call-stats

To display the local disconnect reasons for all modems inside an access server or router, use the **show modem call-stats EXEC** command.

```
show modem call-stats [slot]
```

Syntax Description

slot (Optional) Specifies the slot number, which limits the display output to a particular range of modems in the system.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.3.

Use this command to find out why a modem ended its connection or why a modem is not operating at peak performance.

Local disconnect reasons for a particular modem are listed across the top of the screen display. For example, see `lostCarr`, `dtrDrop`, `rmtLink`, `wdogTimr`, `compress`, `retrain`, `inacTout`, and `linkFail` in the following output:

```
router# show modem call-stats

dial-in/dial-out call statistics

      lostCarr  dtrDrop  rmtLink  wdogTimr  compress  retrain  inacTout  linkFail
Mdm
* 0/0
* 0/1
```

In the body of the screen display, the number of times an error occurred on a specific modem is displayed (see the # column). The % column shows the total running percent that a modem was logged for the specified disconnect reason with respect to the entire modem pool. For example, out of all the times the `lostCarr` error occurred on all the modems in the system, the `lostCarr` error occurred 2% of the time on modem 0/0.

```
router# show modem call-stats

dial-in/dial-out call statistics

      lostCarr  dtrDrop  rmtLink  wdogTimr  compress  retrain  inacTout  linkFail
Mdm   #   %   #   %   #   %   #   %   #   %   #   %   #   %
* 0/0   6   2   2   3   1   0   0   0   0   0   0   0   0   0   0
* 0/1   5   2   2   3   2   1   0   0   0   0   0   0   0   0   0
```

Bad or malfunctioning modems are detected by an unusually high number of disconnect counters for a particular disconnect reason. For example, if modem 1/0 had an astronomically high number of compression errors compared to the remaining modems in system, modem 1/0 would probably be bad or inoperable.

To reset the counters displayed by the **show modem call-stats** command, issue the **clear modem counters** command.

Note Remote disconnect reasons are not described by this command.

Sample Displays

The following example shows call statistics for the **show modem call-stats** command. Due to the screen size limitation of most terminal screen displays, all the possible disconnect reasons cannot be displayed at the same time. Only the top eight most frequently experienced disconnect reasons are displayed.

See Table 13 for descriptions of the fields and end-connection events in the following sample display.

```

router# show modem call-stats

dial-in/dial-out call statistics

      lostCarr  dtrDrop  rmtLink  wdogTimr  compress  retrain  inactTout  linkFail
Mdm   #   %   #   %   #   %   #   %   #   %   #   %   #   %   #   %
* 0/0   6   2   2   3   1   0   0   0   0   0   0   0   0   0   0
* 0/1   5   2   2   3   2   1   0   0   0   0   0   0   0   0   0
  0/2   5   2   2   3   4   3   0   0   0   0   0   0   0   0   0
* 0/3   5   2   2   3   2   1   0   0   0   0   0   0   0   0   0
* 0/4   5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/5   5   2   2   3   2   1   0   0   0   0   0   0   0   0   0
* 0/6   4   1   2   3   2   1   0   0   0   0   0   0   0   0   0
* 0/7   4   1   2   3   4   3   0   0   0   0   0   0   0   0   0
* 0/8   6   2   1   1   3   2   0   0   0   0   0   0   0   0   0
* 0/9   5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/10  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 0/11  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
  0/12  5   2   2   3   2   1   0   0   0   0   0   0   0   0   0
* 0/13  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/14  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/15  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/16  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/17  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 0/18  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 0/19  5   2   1   1   3   2   0   0   0   0   0   0   0   0   0
* 0/20  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/21  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 0/22  5   2   1   1   11  10  0   0   0   0   0   0   0   0   0
* 0/23  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/0   4   1   2   3   2   1   0   0   0   0   0   0   0   0   0
* 2/1   5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/2   5   2   2   3   0   0   0   0   0   0   0   0   0   0   0
* 2/3   5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/4   5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/5   5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/6   4   1   1   1   1   0   0   0   0   0   0   0   0   0   0
* 2/7   5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 2/8   5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 2/9   4   1   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/10  5   2   1   1   0   0   0   0   0   0   0   0   0   0   0
* 2/11  5   2   1   1   5   4   0   0   0   0   0   0   0   0   0
* 2/12  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/13  5   2   1   1   1   0   0   0   0   0   0   0   0   0   0
* 2/14  5   2   1   1   2   1   0   0   0   0   0   0   0   0   0
* 2/15  4   1   1   1   3   2   0   0   0   0   0   0   0   0   0
* 2/16  4   1   1   1   3   2   0   0   0   0   0   0   0   0   0
* 2/17  5   2   2   3   9   8   0   0   0   0   0   0   0   0   0
* 2/18  4   1   1   1   1   0   0   0   0   0   0   0   0   0   0
* 2/19  3   1   1   1   2   1   0   0   0   0   0   0   0   0   0
    
```

show modem call-stats

| | | | | | | | | | | | | | | | |
|--------|-----|---|----|---|-----|---|---|---|---|---|---|---|---|---|---|
| * 2/20 | 7 | 3 | 1 | 1 | 8 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/21 | 5 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/22 | 4 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/23 | 5 | 2 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 233 | | 59 | | 110 | | 0 | | 0 | | 0 | | 0 | | 0 |

dial-out call statistics

| Mdm | noCarr | | noDitone | | busy | | abort | | dialStrg | | autoLgon | | dialTout | | rmtHgup | |
|--------|--------|---|----------|---|------|---|-------|---|----------|---|----------|---|----------|---|---------|---|
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| * 0/0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/4 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/7 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/9 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/11 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/14 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/16 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/17 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/18 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/19 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/22 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 0/23 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/1 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/5 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/7 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/8 | 7 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/9 | 4 | 1 | 1 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/10 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/12 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/13 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/14 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/15 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/16 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/17 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/18 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/19 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/21 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/22 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| * 2/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 84 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | |

Table 13 Show Modem Call-Stats Field Descriptions

| Field | Description |
|----------------------------------|--|
| dial-in/dial-out call statistics | This category of disconnect reasons can happen only in dial-in or dial-out scenarios. |
| wdogTimr | Watchdog timeout. An obscure firmware problem occurred. This is a rare disconnect reason. |
| compress | Compression. An error was detected during decompression, which caused the internal decompression dictionary to overflow. This could be caused by a modem dialing in that is using a slightly different compression algorithm. |
| retrain | Retrain failure. A connection was lost and not re-established after three attempts. |
| inacTout | Inactivity timeout. The time specified in the AT/T command has expired. No modem data transfers were detected during that period. |
| linkFail | Link failure. The protocol level link failed while using MNP-10 or LAPM in reliable mode. |
| moduFail | Modulation error. An error was detected at the DSP chip level, which caused a disconnect. |
| mnpProto | MNP10 protocol error. An uncorrectable error occurred during a MNP-10 connection. |
| lapmProt | LAPM protocol error. An uncorrectable error occurred during a LAPM connection. |
| lostCarr | Lost carrier. The modem firmware detected a carrier drop during a connection. The cause for the carrier drop could be the loss of signal from the remote modem or the result of a error detection. |
| dtrDrop | DTR drop. The modem disconnected because the DTR signal from the host became inactive. |
| userHgup | User hang up. The modem disconnected because a command such as ATH was detected. |
| rmtlink | Remote link disconnect. If an MNP-10 reliable link is established, the remote modem sends the disconnect reason across the link before disconnecting. The disconnect reason displayed is LOCAL (remote link disconnect) and REMOTE (the reason the remote modem disconnected). |
| trminate | Terminate. A password security error occurred in the Microcom HDMS. This error occurs only with Microcom modems. |
| callBkfa | Callback failed. This error applies to leased line connections only. A switched line connection failed and a connection still cannot be made on the leased line. |
| dial-out call statistics | This category of disconnect reasons can happen only in a dial-out scenario. |
| noCarr | No carrier. The called number answered, but no answer tone was detected after the appropriate wait. |
| noDitone | No dialtone. No dial tone was detected after the modem went off hook. |
| busy | Busy. A busy signal was detected while the local modem was attempting to dial. |
| abort | Abort. A character was received from the remote host after the dial command was issued and before a connection was established. |
| dialStrg | Dialstring error. An invalid character was detected in the dial string, which forced the dial attempt to terminate. |
| autoLgon | Autologon error. An autologon sequence did not successfully complete. |

Table 13 Show Modem Call-Stats Field Descriptions (Continued)

| Field | Description |
|--------------|--|
| dialTout | Dial timeout. When a semicolon is used as a dial modifier, the modem returns to the command state as indicated by an "OK." This allows a continuation of the dial string. If a period of time elapses as specified in the S7 register without the dial string completing, the attempt is aborted with dial timeout as the disconnect reason. |
| rmtHgup | Remote hangup. The modem disconnected because the remote modem disconnected the call and dropped DTR. |
| blacklst | Blacklist. In a country that supports blacklisting, an attempt was made to go off hook with a null dial string (ATD). |
| ccpNssn | CCP not seen. The credit card prompt (also known as Bong) was not detected. |
| faxClasz | FAX class 2 error. An abnormal termination to a fax transmission was detected. |
| Total | Total number of times the disconnect reason occurred among all the modems in the system. |

show modem connect-speeds

To display connection speed statistics for all the modems running in an access server or router, use the **show modem connect-speeds** EXEC command.

show modem connect-speeds [*max-speed* [*slot*]]

Syntax Description

| | |
|------------------|--|
| <i>max-speed</i> | (Optional) Maximum speed you want displayed in the shifting speed window. You can specify from 12,000 to 56,000 bps. |
| <i>slot</i> | (Optional) Specifies the slot number, which limits the display output to a particular range of modems in the system. |

Default

The maximum speed displayed is 12,000 bps.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.3.

Because most terminal screens are not wide enough to display the entire range of connection speeds at one time (for example, 75 to 56000 bps), the *max-speed* variable is used. This variable specifies the contents of a shifting baud-rate window, which provides you with a snap shot of modem connection speeds for your system. If you want to see a snap shot of lower baud rates, specify a lower connection speed. If you want to see a snap shot of higher baud rates, specify a higher connection speed.

The *max-speed* variable also rounds up to the nearest recognizable baud rate by the software, so you do not need to memorize or enter exact connection speeds. For example, if you enter a maximum baud rate of **22059**, the system software automatically rounds the value up to **24000**.

To display a complete picture of all the connection speeds and counters on the system, you must enter a series of commands. Each time you issue the **show modem connect-speeds** *max-speed* command, only nine baud rate columns can be displayed at the same time. Table 14 shows a range of commands that you can issue, one at a time, to see a complete picture of the total possible connection speeds on your access server.

Table 14 Connect Speed Displays for the Show Modem Connect-Speeds Command

| Command | Connect Speed Range Displayed |
|--|--------------------------------------|
| show modem connect-speeds 56000 | 40,000 to 56,000 bps |
| show modem connect-speeds 38000 | 24,000 to 38,000 bps |
| show modem connect-speeds 21600 | 2,400 to 21,600 bps |
| show modem connect-speeds 12000 | 75 to 1200 bps |

The **show modem connect-speeds** command displays a log of connection speed statistics starting from the last time the access servers or router was power cycled or the **clear modem counters** command was issued. If you want to create a monthly report of the connection speeds achieved by the modems, issue the **clear modem counters** command at the beginning of the month and issue the **show modem connect-speeds** command at the end of the month.

Note The Cisco IOS software does not accept commas (,) in the connect speed field. For example, enter **28000** not **28,000**.

Sample Displays

See Table 15 for descriptions of the fields shown in the following displays.

The following display shows connection speed statistics up to 28000 bps:

```
router# show modem connect-speeds 28800

transmit connect speeds

  Mdm    9600  12000  14400  16800  19200  21600  24000  26400  28800  TotCnt
* 1/0    0      0      0      0      3      4      6      37     23     74
* 1/1    0      0      3      1      0      4      9      41     20     80
* 1/2    0      0      2      0      1      3      10     37     26     82
  1/3    1      0      0      0      0      3      15     35      7     62
  1/4    0      0      0      0      4      2      8      20     13     49
* 1/5    0      0      4      0      1      0      4      38     17     65
* 1/6    0      0      2      1      0      1      9      32     11     57
* 1/7    1      0      2      0      0      5      10     31     18     67
* 1/8    0      0      0      1      1      1      10     42     11     68
  1/9    0      0      2      1      2      4      4      30     23     67
  1/10   0      0      0      0      0      2      5      26     22     56
* 1/11   0      0      0      0      3      1      16     38     17     76
* 1/12   0      0      0      0      0      3      7      40     12     62
  1/13   0      0      0      1      2      3      11     20     14     51
  1/14   0      0      2      0      0      2      7      26     12     51
  1/15   0      0      1      1      1      2      6      29     25     65
  1/16   2      0      2      0      1      5      10     37     15     73
  1/17   0      0      0      0      0      2      10     33     22     67
  1/18   0      0      2      2      0      2      12     17     25     61
* 1/19   2      0      3      0      1      2      9      35     20     74
  1/20   0      0      2      2      2      2      8      28     21     65
* 1/21   0      1      2      0      1      2      5      23     21     58
* 1/22   0      0      1      0      1      1      5      27     21     56
* 1/23   0      0      2      0      0      4      8      30     15     60
Tot      6      1     32     10     24     60     204    752    431    1546
Tot %    0      0      2      0      1      3     13     48     27

receive connect speeds

  Mdm    9600  12000  14400  16800  19200  21600  24000  26400  28800  TotCnt
* 1/0    0      0      1      0      1      2      9      35     25     74
* 1/1    0      0      3      0      1      3      10     42     18     80
* 1/2    0      0      2      0      1      4      8      40     26     82
  1/3    1      0      0      0      0      1      10     36     14     62
  1/4    0      0      1      0      2      2      8      22      8     49
* 1/5    0      1      4      0      0      0      9      32     17     65
* 1/6    0      0      2      0      0      0      7      33     14     57
* 1/7    0      0      2      1      1      0      6      39     18     67
* 1/8    0      0      0      0      1      0      11     43     12     68
  1/9    1      0      3      0      0      0      8      33     22     67
```

show modem connect-speeds

| | | | | | | | | | | |
|--------|---|---|----|----|----|----|-----|-----|-----|------|
| 1/10 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 31 | 17 | 56 |
| * 1/11 | 0 | 0 | 0 | 1 | 1 | 1 | 14 | 43 | 16 | 76 |
| * 1/12 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 43 | 12 | 62 |
| 1/13 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 26 | 13 | 51 |
| 1/14 | 0 | 0 | 2 | 1 | 0 | 0 | 5 | 27 | 14 | 51 |
| 1/15 | 0 | 0 | 1 | 0 | 1 | 2 | 3 | 36 | 22 | 65 |
| 1/16 | 1 | 0 | 3 | 1 | 2 | 0 | 8 | 37 | 20 | 73 |
| 1/17 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 36 | 22 | 67 |
| 1/18 | 0 | 1 | 1 | 0 | 0 | 2 | 4 | 30 | 20 | 61 |
| * 1/19 | 0 | 0 | 3 | 2 | 1 | 1 | 6 | 42 | 18 | 74 |
| 1/20 | 0 | 1 | 2 | 1 | 2 | 1 | 2 | 37 | 18 | 65 |
| * 1/21 | 0 | 0 | 3 | 3 | 1 | 2 | 2 | 28 | 18 | 58 |
| * 1/22 | 0 | 0 | 1 | 0 | 1 | 0 | 5 | 32 | 16 | 56 |
| * 1/23 | 0 | 0 | 2 | 0 | 0 | 1 | 8 | 35 | 13 | 60 |
| Tot | 3 | 3 | 36 | 10 | 17 | 25 | 172 | 838 | 413 | 1546 |
| Tot % | 0 | 0 | 2 | 0 | 1 | 1 | 11 | 54 | 26 | |

The following display shows connection speed statistics up to 56000 bps:

router# **show modem connect-speeds 56000**

transmit connect speeds

| Mdm | 40000 | 42000 | 44000 | 46000 | 48000 | 50000 | 52000 | 54000 | 56000 | TotCnt |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1/0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tot | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tot % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

receive connect speeds

| Mdm | 40000 | 42000 | 44000 | 46000 | 48000 | 50000 | 52000 | 54000 | 56000 | TotCnt |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1/0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | | | | | | | | | | |
|-------|---|---|---|---|---|---|---|---|---|---|
| 1/11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1/23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tot | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tot % | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 15 Show Modem Connect-Speeds Field Descriptions

| Field | Description |
|-------------------------|--|
| transmit connect speeds | Connection speeds for calls initiated by the system. |
| Mdm <i>slot/port</i> | Specified slot and port number assigned to the modem. |
| speed counters | The transmit and receive speed counters are 75, 300, 600, 1200, 2400, 4800, 7200, 9600, 12000, 14400, 16800, 19200, 21600, 24000, 26400, 28800, 31200, 33600, 32000, 34000, 36000, 38000, 40000, 42000, 44000, 46000, 48000, 50000, 52000, 54000, and 56000 bps. |
| TotCnt | For the specified modem, the sum of the number of times a connection was initiated or received at one of the specified connection rates (75 to 56,000 bps). |
| Tot | For all modems loaded in the system, the total number of times a call was initiated or received at the specified speed. |
| Tot % | Percentage of the total number of calls that were initiated or received at the specified speed. |
| receive connect speeds | Connection speeds for incoming calls. |

show modem cookie

To display information about the modem cookie, use the **show modem cookie** EXEC command.

show modem cookie

Syntax Description

This command has no arguments or keywords.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Displays

The following display shows output information for the **show modem cookie** command for a V.34 carrier card and two modem cards:

```
router# show modem cookie

Hex dump of modem board HW version info:

Slot 1:
  Carrier card:
    0000: 1802 0200 0000 0000 0000 0000 0000 0000
    0010: 0000 0000 0000 0000 0000 0000 0000 0000
  Modem Module 0:
    0000: 0C01 3033 3030 3031 4D69 6372 6F63 6F6D
    0010: 204D 4E50 3130 2056 3334 204D 6F64 656D
  Modem Module 1:
    0000: 0C01 3033 3030 3031 4D69 6372 6F63 6F6D
    0010: 204D 4E50 3130 2056 3334 204D 6F64 656D
```

Table 16 describes significant fields in the previous display.

Table 16 Show Modem Cookie Field Descriptions

| Field | Description |
|-----------------|---|
| Slot 1: | The slot carrying the carrier and modem card. |
| Carrier card: | Carrier card and its cookie parameters. |
| Modem Module 0: | Modem card and its cookie parameters. |

show modem csm

To display the internal status of the call switching module for modems inside access servers or routers, use the **show modem csm EXEC** command.

```
show modem csm [slot/port | group number]
```

Syntax Description

| | |
|---------------------|--|
| <i>slot/port</i> | (Optional) Specifies the location of a slot and modem port. If this number is not specified, statistics for all connected modems are displayed. Remember to include the forward slash (/) when entering this variable. |
| <i>group number</i> | (Optional) Specifies the location of a specific group of modems. If this number is not specified, statistics for all modems in the access server are displayed. The group number range is between 1 and 200. |

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Displays

The following example displays the call switching module information for modem 1/2 on a Cisco AS5200:

```
router# show modem csm 1/2

MODEM_INFO: slot 1, port 2, unit 130, modem_mask=0x0004, modem_port_offset=0
tty_hwidb=0x00000000, modem_tty=0x004370A8, mgmt_tty=0x004370A8, modem_pool=0x0041D99C
csm_status(0): CSM_STATUS_UNLOCKED
csm_state(0x00000000)=CSM_OC_STATE, csm_event_proc=0x0005B448
invalid_event_count=0, wdt_timeout_count=0
wdt_timestamp_started is not activated
wait_for_dialing:False, wait_for_bchan:False
pri_chnl=TDM_ISDN_STREAM(s0, c0), modem_chnl=TDM_ISDN_STREAM(s0, c0)
dchan_idb_start_index=0, dchan_idb_index=0, call_id=0x0000, bchan_num=0
csm_event=CSM_EVENT_NONE, cause=0x0000, phone_num=
ring_indicator=0, oh_state=0, oh_int_enable=0, modem_reset=0
ring_no_answer=0, ic_failure=0, ic_complete=0
dial_failure=0, oc_failure=0, oc_complete=0
oc_busy=0, oc_no_dial_tone=0, oc_dial_timeout=0
remote_link_disc=0, busyout=0, modem_reset=0
call_duration_started=00:00:00, call_duration_ended=00:00:00,
total_call_duration=00:00:00
The calling party phone number = 4082968388
The called party phone number = 4085267406
```

Table 17 describes significant fields in the previous display.

Table 17 Show Modem CSM Field Descriptions

| Field | Description |
|---|---|
| MODEM_INFO | Displays internal data structure information. |
| csm_status | Displays the status of the call switching module. Possible displays include unlocked, active call, busyout req, shutdown, bad modem, modem hold, back-to-back, file downloading, and reset. |
| csm_state | Displays the current state of the call switching module. Possible states include idle and connected. Incoming calls are marked <i>IC</i> and outgoing calls are marked <i>OC</i> . |
| Modem counters | Counters for different modem events. |
| The calling party phone number The called party phone number | Phone numbers for the dialing integrated modem and the remote modem. |

show modem log

To display the modem history event status performed on a manageable modem or group of modems, use the **show modem log EXEC** command.

```
show modem log [slot/port | group number]
```

Syntax Description

| | |
|---------------------|--|
| <i>slot/port</i> | (Optional) Specifies the location of a slot and modem port. If this number is not specified, statistics for all connected modems are displayed. Remember to include the forward slash (/) when entering this variable. |
| group number | (Optional) Specifies the location of a specific group of modems. If this number is not specified, statistics for all modems in the access server are displayed. The group number range is between 1 and 200. |

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Display

The following example shows the event log status for a manageable modem. It also identifies the time elapsed since each modem event was performed (for example, 01:02:41 means the modem event occurred 1 hour, 2 minutes, and 41 seconds ago). To escape from the log display mode, press the keys **Ctrl-c**.

```
router# show modem log 0/0

Modem 0/0 Events Log:
01:03:03: Startup Response: Microcom MNP10 K56 Modem (Select)
      Modem (boot) firmware = 3.1(16) (3.0(4))
      DSP Controller (SPX) rev = 204.173(0) (143.191(0))
01:03:03: Control Reply: 0xFF1F
01:03:03: RS232 event: RTS noDTR* CTS* DSR* noDCD* noRI noTST
01:03:03: RS232 event: RTS noDTR CTS DSR noDCD noRI noTST
01:03:03: Modem State event: Idle
01:03:03: End connection event: Retransmits for MNP block (TX/RX) = 0/0
      Duration = 0:00:00, Number of TX/RX char = 0/0
      Local Disc Reason = Lost Carrier
      Remote Disc Reason = Unknown
01:03:04: Phone number event:
01:02:51: DTR event: DTR On
01:02:51: RS232 event: RTS DTR* CTS DSR noDCD noRI noTST
00:39:52: Startup Response: Microcom MNP10 K56 Modem (Select)
      Modem (boot) firmware = 3.1(16) (3.0(4))
      DSP Controller (SPX) rev = 1.1(0) (1.1(0))
00:39:52: Control Reply: 0xFF1F
00:39:52: RS232 event: RTS noDTR* CTS* DSR* noDCD* noRI noTST
00:39:52: RS232 event: RTS noDTR CTS DSR noDCD noRI noTST
00:39:53: Modem State event: Idle
00:39:53: End connection event: Retransmits for MNP block (TX/RX) = 0/0
      Duration = 0:00:00, Number of TX/RX char = 0/0
```

```

Local Disc Reason = Lost Carrier
Remote Disc Reason = Unknown
00:39:53: Phone number event:
00:39:32: DTR event: DTR On
00:39:32: RS232 event: RTS DTR* CTS DSR noDCD noRI noTST

```

Table 18 describes significant fields in the previous display.

Table 18 Show Modem Log Field Descriptions

| Field | Description |
|-------------------------------|--|
| Modem <slot/port> Events Log: | The modem for which log events are currently displayed. |
| Startup Response: | List of information describing the modem type, modem firmware, and DSP controller version (for 56K modems only). |
| Control Reply | Indicates the events the modem will be monitoring. |
| RS232 event | Detected modem signaling. |
| Modem State event | Current state of the modem, which can be any of the following: <ul style="list-style-type: none"> • Conn—Modem is connected to a remote host. • Bad—Inoperable state, which is configured by the modem bad command. • Bad*—Inoperable state, which is configured by the modem startup-test command during initial power-up testing. • Reset—Modem is in reset mode. • D/L—Modem is downloading firmware. • Bad FW—Downloaded modem firmware is not operational. • Busy—Modem is out of service and not available for calls. • Idle—Modem is ready for incoming and outgoing calls. |
| End connection event | Descriptions or reasons why a connection was terminated: <ul style="list-style-type: none"> • Duration—Time a connection was up between the local and remote devices. • Number of TX/RX char—Transmit and receive characters exchanged during the connection time. • Local or remote disc reason—Reason why the local or remote modem disconnected: <ul style="list-style-type: none"> — Lost Carrier—The modem firmware detects a drop in Carrier Detect during a connection. — DSP Task Hung—The DSP chip malfunctioned and failed to reset. |
| Phone number event | Descriptive information about the last dialed or current phone number. |

show modem summary

To display a high-level report for all manageable modems dialing into and out of the network, use the **show modem summary EXEC** command.

show modem summary

Syntax Description

This command has no arguments or keywords.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Sample Display

The following is sample display output for the **show modem summary** command:

```
router# show modem summary

          Incoming calls      Outgoing calls      Busied   Failed   No   Succ
Usage    Succ  Fail  Avail  Succ  Fail  Avail  Out    Dial   Ans  Pct.
 17%   1547   64   11    0    0   11    0     3     3   96%
```

Table 19 describes the fields in the previous display.

Table 19 Show Modem Summary Field Descriptions

| Fields | Descriptions |
|-----------------------------|--|
| Incoming and Outgoing calls | Calls dialing into and out of the modem. <ul style="list-style-type: none"> Usage—Percentage of the total system uptime that all the modems are in use. Succ—Total calls successfully connected. Fail—Total calls that did not successfully connect. Avail—Total modems available for use in the system. |
| Busied Out | Total number of times the modems were taken out of service with the modem busy command or the modem shutdown command. |
| Failed Dial | Total number of attempts the modems did not hang up or there was no dial tone. |
| No Ans | Total number of times call ringing was detected, but the calls were not answered by a modem. |
| Succ Pct. | Successful connection percentage of total available modems. |

show modem test

To display the modem test log, use the **show modem test** EXEC command.

show modem test

Syntax Description

This command has no arguments or keywords.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

The modem test log displays the results of the modem diagnostics test, which is issued with the **modem autotest** global configuration command.

Sample Display

The following display shows output information for the **show modem test** command for a V.34 modem card:

```

router# show modem test
Date Time           Modem Test           Reason           State Result
5/15 07:25:17 AM 1/0 Back-To-Back      TIME INTERVAL   Idle FAIL
5/15 07:25:17 AM 1/1 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/2 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/3 Back-To-Back      TIME INTERVAL   Idle FAIL
5/15 07:25:17 AM 1/4 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/5 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/6 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/7 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/8 Back-To-Back      TIME INTERVAL   Idle PASS
5/15 07:25:17 AM 1/9 Back-To-Back      TIME INTERVAL   Idle PASS
...

```

Table 20 describes the field in the previous display.

Table 20 Show Modem Test Field Descriptions

| Fields | Descriptions |
|--------|--|
| Date | Date the back-to-back test occurred for the specified modem. |
| Time | Time the test occurred. |
| Modem | Specified modem that performed a back-to-back test. |
| Test | Operation performed by the specified modem. |
| Reason | Reason the modem performed a back-to-back test. |
| State | Current operational state of the modem. |
| Result | Result of the back-to-back test for the specified modem. |

show modem version

To display version information about the modem firmware, controller and DSP code (for 56K modems only), and boot code, use the **show modem version** EXEC command.

show modem version

Syntax Description

This command has no arguments or keywords.

Command Mode

User and Privileged EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

This command is very useful for verifying the version of modem firmware running on the system after a modem firmware upgrade.

Sample Displays

The following example displays information for modem firmware, which includes modem firmware version, boot code version, controller and DSP code version (56K modem modules only), modem board hardware version, and carrier card information. This particular example displays information for 56K modem cards installed in a Cisco AS5200.

If the version number is displayed as 0.0.0, verify that out-of-band status polling is functioning.

```
router# show modem version
```

| Mdm | Modem module Number | Firmware Rev | Boot Rev | DSP Rev |
|------|------------------------|-----------------|-------------|---------------|
| 0/0 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/1 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/2 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/3 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/4 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/5 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/6 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/7 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/8 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/9 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/10 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/11 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |
| 0/12 | 1 | 2.2(8) | 1.0(5) | |
| 0/13 | 1 | 2.2(8) | 1.0(5) | |
| 0/14 | 1 | 2.2(8) | 1.0(5) | |
| 0/15 | 1 | 2.2(8) | 1.0(5) | |
| 0/16 | 1 | 2.2(8) | 1.0(5) | |
| 0/17 | 1 | 2.2(8) | 1.0(5) | |
| 0/18 | 1 | 2.2(8) | 1.0(5) | |
| 0/19 | 1 | 2.2(8) | 1.0(5) | |
| 0/20 | 1 | 2.2(8) | 1.0(5) | |
| 0/21 | 1 | 2.2(8) | 1.0(5) | |
| 0/22 | 1 | 2.2(8) | 1.0(5) | |
| 0/23 | 1 | 2.2(8) | 1.0(5) | |
| 2/0 | 0 | 3.1(21) | 3.0(4) | 1.1(0)/1.1(0) |

show modem version

```
2/1          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/2          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/3          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/4          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/5          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/6          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/7          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/8          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/9          0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/10         0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/11         0      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/12         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/13         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/14         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/15         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/16         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/17         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/18         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/19         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/20         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/21         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/22         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
2/23         1      3.1(21)  3.0(4)   1.1(0)/1.1(0)
```

Modem board HW version info:

Slot 0:

Carrier card:

hw version= 8, number_of_ports= 24, max_modules= 2, max_oob_ports= 2

Modem Module 0:

number_of_modems= 12, option_bits= 1,
rev_num= 02.00, vendor_model_number= 02,
vendor_banner= Microcom MNP10 K56 Modem

Modem Module 1:

number_of_modems= 12, option_bits= 1,
rev_num= 03.00, vendor_model_number= 01,
vendor_banner= Microcom MNP10 V34 Modem

Slot 2:

Carrier card:

hw version= 7, number_of_ports= 24, max_modules= 2, max_oob_ports= 2

Modem Module 0:

number_of_modems= 12, option_bits= 1,
rev_num= 02.00, vendor_model_number= 02,
vendor_banner= Microcom MNP10 K56 Modem

Modem Module 1:

number_of_modems= 12, option_bits= 1,
rev_num= 02.00, vendor_model_number= 02,
vendor_banner= Microcom MNP10 K56 Modem

The next example displays modem version information for V.110 modem cards for unmanaged modems:

```
router# show modem version
```

| Mdm | Modem module Number | Firmware Rev | Boot Rev |
|-----|---------------------|--------------|-----------|
| 0/0 | 0 | Unmanaged | Unmanaged |
| 0/1 | 0 | Unmanaged | Unmanaged |
| 0/2 | 0 | Unmanaged | Unmanaged |
| 0/3 | 0 | Unmanaged | Unmanaged |
| 0/4 | 0 | Unmanaged | Unmanaged |
| 0/5 | 0 | Unmanaged | Unmanaged |
| 0/6 | 0 | Unmanaged | Unmanaged |
| 0/7 | 0 | Unmanaged | Unmanaged |

| | | | |
|------|---|-----------|-----------|
| 0/8 | 0 | Unmanaged | Unmanaged |
| 0/9 | 0 | Unmanaged | Unmanaged |
| 0/10 | 0 | Unmanaged | Unmanaged |
| 0/11 | 0 | Unmanaged | Unmanaged |
| 1/0 | 0 | Unmanaged | Unmanaged |
| 1/1 | 0 | Unmanaged | Unmanaged |
| 1/2 | 0 | Unmanaged | Unmanaged |
| 1/3 | 0 | Unmanaged | Unmanaged |
| 1/4 | 0 | Unmanaged | Unmanaged |
| 1/5 | 0 | Unmanaged | Unmanaged |
| 1/6 | 0 | Unmanaged | Unmanaged |
| 1/7 | 0 | Unmanaged | Unmanaged |
| 1/8 | 0 | Unmanaged | Unmanaged |
| 1/9 | 0 | Unmanaged | Unmanaged |
| 1/10 | 0 | Unmanaged | Unmanaged |
| 1/11 | 0 | Unmanaged | Unmanaged |
| 1/12 | 1 | Unmanaged | Unmanaged |
| 1/13 | 1 | Unmanaged | Unmanaged |
| 1/14 | 1 | Unmanaged | Unmanaged |
| 1/15 | 1 | Unmanaged | Unmanaged |
| 1/16 | 1 | Unmanaged | Unmanaged |
| 1/17 | 1 | Unmanaged | Unmanaged |
| 1/18 | 1 | Unmanaged | Unmanaged |
| 1/19 | 1 | Unmanaged | Unmanaged |
| 1/20 | 1 | Unmanaged | Unmanaged |
| 1/21 | 1 | Unmanaged | Unmanaged |
| 1/22 | 1 | Unmanaged | Unmanaged |
| 1/23 | 1 | Unmanaged | Unmanaged |
| 2/0 | 0 | Unmanaged | Unmanaged |
| 2/1 | 0 | Unmanaged | Unmanaged |
| 2/2 | 0 | Unmanaged | Unmanaged |
| 2/3 | 0 | Unmanaged | Unmanaged |
| 2/4 | 0 | Unmanaged | Unmanaged |
| 2/5 | 0 | Unmanaged | Unmanaged |
| 2/6 | 0 | Unmanaged | Unmanaged |
| 2/7 | 0 | Unmanaged | Unmanaged |
| 2/8 | 0 | Unmanaged | Unmanaged |
| 2/9 | 0 | Unmanaged | Unmanaged |
| 2/10 | 0 | Unmanaged | Unmanaged |
| 2/11 | 0 | Unmanaged | Unmanaged |
| 2/12 | 1 | Unmanaged | Unmanaged |
| 2/13 | 1 | Unmanaged | Unmanaged |
| 2/14 | 1 | Unmanaged | Unmanaged |
| 2/15 | 1 | Unmanaged | Unmanaged |
| 2/16 | 1 | Unmanaged | Unmanaged |
| 2/17 | 1 | Unmanaged | Unmanaged |
| 2/18 | 1 | Unmanaged | Unmanaged |
| 2/19 | 1 | Unmanaged | Unmanaged |
| 2/20 | 1 | Unmanaged | Unmanaged |
| 2/21 | 1 | Unmanaged | Unmanaged |
| 2/22 | 1 | Unmanaged | Unmanaged |
| 2/23 | 1 | Unmanaged | Unmanaged |

Modem board HW version info:

Slot 0:

Carrier card:

hw version= 3, number_of_ports= 12, max_modules= 1, max_oob_ports= 1

Modem Module 0:

number_of_modems= 12, option_bits= 1,
rev_num= 03.01, vendor_model_number= 01,
vendor_banner= V.110 Terminal Adaptor

show modem version

```

Slot 1:
Carrier card:
  hw version= 8, number_of_ports= 24, max_modules= 2, max_oob_ports= 2
Modem Module 0:
  number_of_modems= 12, option_bits= 1,
  rev_num= 03.01, vendor_model_number= 01,
  vendor_banner= V.110 Terminal Adaptor
Modem Module 1:
  number_of_modems= 12, option_bits= 1,
  rev_num= 03.01, vendor_model_number= 01,
  vendor_banner= V.110 Terminal Adaptor

Slot 2:
Carrier card:
  hw version= 8, number_of_ports= 24, max_modules= 2, max_oob_ports= 2
Modem Module 0:
  number_of_modems= 12, option_bits= 1,
  rev_num= 03.00, vendor_model_number= 01,
  vendor_banner= V.110 Terminal Adaptor
Modem Module 1:
  number_of_modems= 12, option_bits= 1,
  rev_num= 03.00, vendor_model_number= 01,
  vendor_banner= V.110 Terminal Adaptor

```

Table 21 describes the fields shown in the previous displays of the **show modem version** command.

Table 21 Show Modem Version Field Descriptions

| Fields | Descriptions |
|------------------------------|---|
| Mdm | Slot and port number for the specified modem. |
| Modem module Number | Card number associated with the carrier card. |
| Firmware Rev | Modem firmware version, or one of the following: <ul style="list-style-type: none"> Unknown—Indicates that the retrieved version is 0.0.0. Unknown (F)—Indicates that the modem’s out-of-band feature has failed. Unknown (NP)—Indicates that the user has disabled the status polling for this modem using the no modem status-polling command. |
| Boot Rev | Modem boot version, or one of the following: <ul style="list-style-type: none"> Unknown—Indicates that the retrieved version is 0.0.0. Unknown (F)—Indicates that the modem’s out-of-band feature has failed. Unknown (NP)—Indicates that the user has disabled the status polling for this modem using the no modem status-polling command. |
| DSP Rev | Controller and DSP version, which is displayed for the 56K modems only. The first column of numbers correspond to the controller version. The second column of numbers, which begin with a forward slash (/), correspond to the DSP version. |
| Modem board HW version info: | Modem hardware board information. |
| Slot | Slot number used for the carrier card. |
| Carrier card | Modem carrier card. |
| hw version | Modem carrier card hardware version. |

Table 21 Show Modem Version Field Descriptions (Continued)

| Fields | Descriptions |
|---------------------|--|
| number_of_ports | Maximum number of modem ports that can be installed in the carrier card. |
| max_modules | Maximum number of modem cards that can be installed in a carrier card. |
| max_oob_ports | Maximum out-of-band ports used in the carrier card. |
| Modem Module | Modem card. |
| number_of_modems | Number of modems installed in the modem card. |
| option_bits | Signal level of the modem A-law and the U-law. |
| rev_num | Modem card version number. |
| vendor_model_number | Vendor modem model number. |
| vendor_banner | Type of banner displayed by the modem vendor. |

test modem back-to-back

To diagnose an integrated modem that may not be functioning properly, use the **test modem back-to-back EXEC** command.

test modem back-to-back *first-slot/port second-slot/port*

Syntax Description

| | |
|-------------------------|--|
| <i>first-slot/port</i> | Slot and modem number of the first test modem. Remember to include the forward slash (/) when entering this variable. |
| <i>second-slot/port</i> | Slot and modem number of the second test modem. Remember to include the forward slash (/) when entering this variable. |

Default

Disabled

Command Mode

EXEC

Usage Guidelines

This command first appeared in Cisco IOS Release 11.2.

Use this command to perform back-to-back testing of two modems. You might need to enable this command on several different combinations of modems to determine which one is not functioning properly.

Example

The following example performs a back-to-back modem test between modem 2/0 and modem 2/1 and removes modem 2/1 (which is associated with TTY line 26) from all dial-in and dial-out services:

```
router# test modem back-to-back 2/0 2/1
back2back 2/0 2/1
Repetitions (of 10-byte packets) [1]:
router#
%MODEM-5-B2BCONNECT: Modems (2/0) and (2/1) connected in back-to-back test:
CONNECT9600/REL-MNPM
%MODEM-5-B2BMODEMS: Modems (2/0) and (2/1) completed back-to-back test: success/packets
= 2/2
```

Related Commands

You can use the master indexes or search online to find documentation of related commands.

modem bad