Verifying Basic Setup

The information in this chapter applies to the Cisco AS5350XM and Cisco AS5400XM universal gateways. This chapter details the tasks required to verify that your basic system components are functioning normally:

Gigabit Ethernet Configuration

The Cisco AS5350XM and AS5400XM universal gateway Ethernet ports are Gigabit Ethernet ports (labeled GE0 and GE1 on the chassis). The Cisco IOS firmware and software is designed so that configurations for Fast Ethernet will work on the Cisco AS5350XM and AS5400XM universal gateways without requiring any modification by the user.

If the Cisco IOS commands, **write** or **copy running-config startup-config** have been used to save the configuration to NVRAM, then all references to Ethernet interfaces will now be GigabitEther, and the IOS commands, **write terminal** and **show running configuration** will always show GigabitEther.

If you must have FastEther available as a searchable word for any scripts you are using, you can use the ROMMON command, **ethertype fe** to change GigabitEther to FastEther. Once you enter **ethertype fe**, the IOS image will only recognize FastEther. It will *not* recognize GigabitEther.

Analyzing the System Boot Dialog

The Cisco AS5350XM and Cisco AS5400XM universal gateways have a specific boot sequence. To view the boot sequence through a terminal session, you must have a console connection to the gateway before it powers up.

Note If you observe no messages on the console port, verify that the baud rate is configured correctly. The Cisco AS5350XM and Cisco AS5400XM console port can support a baud rate up to 115200.

The following boot sequence occurs. Step numbers and comments are inserted in the example to describe the boot sequence.

Step 1 In the following segment, the gateway decompresses the system boot image, tests the NVRAM for validity, and decompresses the Cisco IOS image.

```
System Bootstrap, Version 12.3(12r)PI6, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2004 by cisco Systems, Inc.
AS5400XM platform with 524288 Kbytes of main memory

Self decompressing the image :
########################################################################################
########################################################################################
################################## [OK]
```

Step 2 Cisco IOS release, available memory, hardware interfaces, and modem lines are displayed.

Note If a feature card type is not recognized, verify that you are running the optimum version of Cisco IOS software. Refer to the hardware-software compatibility matrix, available online at http://cco-sj-1.cisco.com/cgi-bin/front.x/Support/HWSWmatrix/hwswmatrix.cgi

```
Restricted Rights Legend

Use, duplication, or disclosure by the Government is
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(c) of the Commercial Computer Software - Restricted
Rights clause at FAR sec. 52.227-19 and subparagraph
(c) (1) (ii) of the Rights in Technical Data and Computer
Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706

Cisco IOS Software, 5400 Software (C5400-JS-M), Version 12.3(14)T,  RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by Cisco Systems, Inc.
Compiled Sat 29-Jan-05 02:10 by yiyan
Image text-base: 0x60011068, data-base: 0x61F80000

Cisco AS5400XM (BCM) processor (revision 0x21) with 393215K/131072K bytes of memory.
Processor board ID JAB082904P4
SB-1 CPU at 750MHz, Implementation 1025, Rev 0.3, 256KB L2 Cache
Last reset from IOS reload
Manufacture Cookie Info:
 EEPROM Version 0x4, Board ID 0x4BD,
```

```
 Board Hardware Version 1.11, Item Number 800-6572289-01,
 Board Revision 02, Serial Number JAB082904P4.
Processor 0x0, MAC Address badb.adba.d044
2 Gigabit Ethernet interfaces
6 Serial interfaces
648 terminal lines
1 Channelized T3 port
512K bytes of NVRAM.
125184K bytes of ATA External CompactFlash (Read/Write)
```

Step 3 Because the gateway has never been configured, it cannot find a startup configuration file. Therefore, the software asks, "Would you like to enter the initial configuration dialog? [yes/no]"

Enter **no**. In this example, the Cisco IOS software is configured manually. The automatic setup script is not used. Configuring the Cisco IOS software manually develops your expertise.

Enter **yes** to terminate autoinstall.

```
--- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no

Would you like to terminate autoinstall? [yes]: yes
```

Step 4 This example shows the LAN interfaces and the slots in which feature cards are not inserted. The universal port feature card (formerly called Nextport module) firmware version is displayed (version 1.1.6.81). The gateway attempts to switch to a better clock source but does not find a suitable source because the T1 trunks are not yet configured.

```
00:00:03: %NP_MD-6-SLOT_INSERTED: Slot 1 (108 ports max) inserted
00:00:16: %CARRIER-3-NO_DFC: DFC is not present - DFC 3
00:00:16: %CARRIER-3-NO_DFC: DFC is not present - DFC 4
00:00:16: %CARRIER-3-NO_DFC: DFC is not present - DFC 5
00:00:16: %CARRIER-3-NO_DFC: DFC is not present - DFC 6
00:00:16: %CARRIER-3-NO_DFC: DFC is not present - DFC 7
00:00:19: %LINK-3-UPDOWN: Interface GigabitEthernet0/0, changed state to up
00:00:19: %LINK-3-UPDOWN: Interface GigabitEthernet0/1, changed state to up
00:00:19: %LINK-3-UPDOWN: Interface Serial0/0, changed state to down
00:00:19: %LINK-3-UPDOWN: Interface Serial0/1, changed state to down
00:00:20: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to up
00:00:20: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to down
00:00:20: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0, changed state to down
00:00:20: %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1, changed state to down
00:00:23: %NP_BS-6-MODULE_STARTED: NextPort module 1/0/0 Started - 1.1.6.81
00:00:26: %NP_BS-6-MODULE_STARTED: NextPort module 1/0/1 Started - 1.1.6.81
00:00:30: %NP_MD-6-MODULE_UP: NextPort module 1/0/0 up
00:00:30: %NP_BS-6-MODULE_STARTED: NextPort module 1/0/2 Started - 1.1.6.81
00:00:33: %NP_MD-6-MODULE_UP: NextPort module 1/0/1 up
00:00:37: %NP_MD-6-MODULE_UP: NextPort module 1/0/2 up
00:01:05: %LINK-5-CHANGED: Interface Serial0/0, changed state to administratively down
00:01:05: %LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to administratively
down
00:01:05: %LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to administratively
down
00:01:05: %LINK-5-CHANGED: Interface Serial0/1, changed state to administratively down
00:01:06: %LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed
state to down
00:01:10: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) 5400 Software (C5400-JS-M), Version 12.3(14)T,  RELEASE SOFTWARE (fc1)
TAC:Home:SW:IOS:Specials for info
Copyright (c) 2004 by cisco Systems, Inc.
```

```
Compiled Sun 09-Jul-00 07:06 by beliu
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 1 priority 205 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 2 priority 204 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 3 priority 205 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 4 priority 204 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 5 priority 205 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 6 priority 204 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-SWITCH: Switching to the clock on slot 2 port 7 priority 205 as
the current primary has gone bad
00:01:10: %TRUNK_CLOCK-6-BAD_CLOCKS: There are no good clocks in the system. Remain in
HOLDOVER mode
00:01:10: %TRUNK_CLOCK-6-BAD_CLOCKS: There are no good clocks in the system. Remain in
HOLDOVER mode
00:01:10: %TRUNK_CLOCK-6-BAD_CLOCKS: There are no good clocks in the system. Remain in
HOLDOVER mode
00:01:10: %TRUNK_CLOCK-6-BAD_CLOCKS: There are no good clocks in the system. Remain in
HOLDOVER mode
00:01:10: %TRUNK_CLOCK-6-BAD_CLOCKS: There are no good clocks in the system. Remain in
HOLDOVER mode
```

Step 5 Enter the **show version** command to check the system hardware, Cisco IOS image name, uptime, and restart reason:

```
Router> show version

Cisco Internetwork Operating System Software
IOS (tm) 5400 Software (C5400-JS-M), Version 12.3(14)T,  RELEASE SOFTWARE (fc1)
Copyright (c) 2004 by cisco Systems, Inc.
Compiled Mon 19-Feb-04 04:10 by
Image text-base: 0x60008968, data-base: 0x61180000

ROM: System Bootstrap, Version 12.0(19991122:230447)
BOOTFLASH: 5350 Software (C5350-BOOT-M), Version 12.0(19991112:131]

AS5400 uptime is 1 day, 4 hours, 29 minutes
System returned to ROM by reload at 12:34:33 UTC Tue Nov 30 1999
System image file is "flash:c5350-js-mz.xm.Feb19"

cisco AS5400 (R7K) processor (revision L) with 131072K/65536K bytes of memory.
Processor board ID 99290068
R7000 CPU at 250Mhz, Implementation 39, Rev 1.0, 256KB L2, 2048KB L3 Cache
Last reset from warm-reset
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
Primary Rate ISDN software, Version 1.1.
Manufacture Cookie Info:
 EEPROM Type 0x0001, EEPROM Version 0x01, Board ID 0x31,
 Board Hardware Version 1.21, Item Number 800-5171-01,
 Board Revision 011, Serial Number 99290068,
 PLD/ISP Version 0.0,  Manufacture Date 2-Aug-1999.
Processor 0xFF, MAC Address 0x0503EFF5F4C
Backplane HW Revision FF.FF, Flash Type 5V
2 GigabitEthernet/IEEE 802.3 interface(s)
2 Serial network interface(s)
108 terminal line(s)
8 Channelized T1/PRI port(s)
```

```
512K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read/Write)
8192K bytes of processor board Boot flash (Read/Write)

Configuration register is 0x2102
```

Table 2 describes the significant output fields in the previous example.

Table 2 show version Command Field Descriptions

Field	Description
`AS5400 uptime is....`	Watch for unscheduled reloads by inspecting this field.
`System returned to ROM by reload at....`	This line tells you why the gateway last reloaded. If the field displays “power-on,” a power interruption caused the reload.
`System image file is....`	The gateway booted from this image location.

Checking the Initial Running Configuration

The Cisco IOS software creates an initial running configuration. Inspect the configuration to get familiar with the default settings. User input is shown in boldface type.

```
Router> enable
Password:
Router# show running-config

Building configuration...

Current configuration : 7653 bytes
!
version 12.1
no service single-slot-reload-enable
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Router
!
no boot startup-test
logging rate-limit console 10 except errors
!
!
resource-pool disable
!
!
voice-fastpath enable
ip subnet-zero
no ip routing
no ip finger
ip name-server 172.16.11.48
ip name-server 172.16.2.132
ip name-server 172.16.2.133
!
```

```
call rsvp-sync
!
!
fax interface-type modem
mta receive maximum-recipients 0
!
!
controller T1 1/0
!
controller T1 1/1
!
controller T1 1/2
!
controller T1 1/3
!
controller T1 1/4
!
controller T1 1/5
!
controller T1 1/6
!
controller T1 1/7
!
!
interface GigabitEthernet0/0
 ip address 172.21.101.21 255.255.255.0
 no ip route-cache
 no ip mroute-cache
 duplex auto
 speed 100
 no mop enabled
!
interface GigabitEthernet0/1
 no ip address
 no ip route-cache
 no ip mroute-cache
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0
 no ip address
 no ip route-cache
 no ip mroute-cache
 shutdown
 fair-queue
 clockrate 2000000
!
interface Serial0/1
 no ip address
 no ip route-cache
 no ip mroute-cache
 shutdown
 clockrate 2000000
!
interface Async4/00
 no ip address
 no ip route-cache
!
interface Async4/01
 no ip address
 no ip route-cache
!
interface Async4/02
```

```
 no ip address
 no ip route-cache
.
.
.
interface Async4/107
 no ip address
 no ip route-cache
!
interface Group-Async0
 no ip address
 no ip route-cache
 no group-range
!
ip kerberos source-interface any
ip classless
no ip http server
!
!
line con 0
 logging synchronous
 transport input none
line aux 0
 logging synchronous
line vty 0 4
 password cisco
 login
line 4/00 4/107
 no flush-at-activation
 modem InOut
!
scheduler allocate 10000 400
end
```

The Cisco AS5350XM or Cisco AS5400XM universal gateway displays every asynchronous interface it recognizes. Therefore, if your system has a large number of asynchronous interfaces, the running configuration will be very long. To aggregate the asynchronous interfaces, you must assign them to a group-async interface using the command **group-range**. See the "Configuring the Asynchronous Group Interface" section on page 6.

Group-async interfaces are templates used to control the configuration of multiple asynchronous interfaces on the gateway. Each asynchronous interface corresponds to one of the modem lines and uses the same number as its corresponding line. Configuring the asynchronous interfaces as a group-async interface saves you time and configuration file size.

Investigating Memory Usage

Use the **show memory summary** command to perform these tasks:

- Understand how memory is used for different processor and I/O memory processes.
- Identify memory fragmentation and memory leaks.
  - Memory leak—Memory that is not released back to the processor. Memory leaks are indicated by steady decreases of free memory. However, the preferred way to track memory leaks is to monitor the FreeMem variable in the OID MIB (object-identifier Management Information Base).
  - Memory fragmentation—Memory that is indicated by the largest block of memory not being equal to the lowest block. Fragmentation increases as the numbers grow further apart.

```
Router# show memory summary

                Head    Total(b)     Used(b)     Free(b)   Lowest(b)  Largest(b)
Processor   61952B00   107664640    24210716    83453924    82827184    82866768
      I/O   40000000    67108880    28952352    38156528    38156528    38156412
.
.
.
```

The sum of the used and free memory equals the total memory. Most of the **show memory summary** command output has been removed for brevity.

Note Do not enter the **show memory summary** command with the **terminal length 0** command enabled. If you do, many screens of output might interrupt your session.

Note To learn more about management information bases (MIBs), see the online references at http://www.cisco.com/univercd/cc/td/doc/product/software/.
Select your Cisco IOS release and search under new feature documentation.

Inspecting CPU Utilization

Enter the **show process cpu** command and then the **show process cpu history** command to investigate high CPU utilization. High utilization causes network performance problems. For example, knowing when the router is running at over 50 percent utilization is critical. The router might start dropping packets if an unexpected traffic burst comes through or if Open Shortest Path First (OSPF) is recalculated. Fast switching can also be used to reduce CPU utilization.

```
Router# show process cpu

CPU utilization for five seconds: 0%/0%; one minute: 1%; five minutes: 1%
 PID  Runtime(ms)  Invoked  uSecs    5Sec   1Min   5Min TTY Process
   1           0    20232      0   0.00%  0.00%  0.00%   0 Load Meter
   2           0       12      0   0.00%  0.00%  0.00%   0 EST msg processing
   3      305688    23808  12839   0.00%  0.39%  0.29%   0 Check heaps
   4           0        1      0   0.00%  0.00%  0.00%   0 Chunk Manager
   5           4       10    400   0.00%  0.00%  0.00%   0 Pool Manager
   6           0        2      0   0.00%  0.00%  0.00%   0 Timers
   7         112    20205      5   0.00%  0.00%  0.00%   0 ALARM_TRIGGER_SC
   8           0        2      0   0.00%  0.00%  0.00%   0 Serial Background
   9           0        1      0   0.00%  0.00%  0.00%   0 RM PROCESS
  10           0        1      0   0.00%  0.00%  0.00%   0 RM PROCESS
  11           0        1      0   0.00%  0.00%  0.00%   0 RM PROCESS
  12           0        1      0   0.00%  0.00%  0.00%   0 RM PROCESS
  13           0        2      0   0.00%  0.00%  0.00%   0 CAS Process
  14         220     2803     78   0.00%  0.00%  0.00%   0 ARP Input
  15           0     5058      0   0.00%  0.00%  0.00%   0 HC Counter Timer
  16           0        2      0   0.00%  0.00%  0.00%   0 DDR Timers
  17           0        2      0   0.00%  0.00%  0.00%   0 Dialer event
  18           4        2   2000   0.00%  0.00%  0.00%   0 Entity MIB API
  19           0        1      0   0.00%  0.00%  0.00%   0 SERIAL A'detect
  20           0        1      0   0.00%  0.00%  0.00%   0 Critical Background
  21          72    13826      5   0.00%  0.00%  0.00%   0 Net Background
 PID  Runtime(ms)  Invoked  uSecs    5Sec   1Min   5Min TTY Process
43           0        3      0   0.00%  0.00%  0.00%   0 AAA Accounting
.
```

.
.

The **show processes cpu history** command displays in ASCII graphical form the total CPU usage on the router over a period of time: one minute, one hour, and 72 hours, displayed in increments of one second, one minute, and one hour, respectively. Maximum usage is measured and recorded every second; average usage is calculated on periods over one second.

```
Router# show process cpu history


                                    11111
     44               11111          99999               33333
100
 90
 80
 70
 60
 50
 40
 30
 20                                 *****
 10                                 *****
    0....5....1....1....2....2....3....3....4....4....5....5....
              0    5    0    5    0    5    0    5    0    5

               CPU% per second (last 60 seconds)


     1
     924444444444444444344444444434434444444444434444444424444
100
 90
 80
 70
 60
 50
 40
 30
 20  *
 10  *
    0....5....1....1....2....2....3....3....4....4....5....5....
              0    5    0    5    0    5    0    5    0    5

               CPU% per minute (last 60 minutes)
              * = maximum CPU%   # = average CPU%

                                1
                           1    0
     4444444444444444444449444440
100                             *
 90                             *
 80                             *
 70                             *
 60                             *
 50                             *
 40                             *
 30                             *
 20                        *    *
 10                        *    *
    0....5....1....1....2....2....3....3....4....4....5....5....6....6....7.
              0    5    0    5    0    5    0    5    0    5    0    5    0
```

```
                    CPU% per hour (last 72 hours)
                  * = maximum CPU%   # = average CPU%
```

If you see high utilization numbers in the top line of the output, for example over 50 percent, inspect the columns 5Sec, 1Min, and 5Min. Find the process that uses the most CPU power.

Displaying Component Status Using the Health Monitor

The health monitor allows you to see the status of different components of your universal gateway.

The **show health-monitor summary** command shows the status of the following components:

- Chassis: Power supply, temperature, fans
- Memory: Processor, I/O memory
- Feature cards

The **show health-monitor summary** command provides high-level component status.

The **show health-monitor** command shows more details, such as the status of subcomponents.

The following example shows the display output of the **show health-monitor** command:

```
AS5400# show health-monitor
Chassis:
   Power Supply                          Failure
      Redundant Power System is present.
      PS Input Voltage status:     failure
      PS Output Voltage status:    failure
      PS Fan status:                normal
      PS Thermal status:            normal
      PS OverVoltage status:        normal
   Temperature                                OK
   Fans                                       OK

Memory:
   Free Memory processor                      OK
   Memory Fragmentation Processor             OK
   Free Memory I/O                            OK
   Memory Fragmentation I/O                   OK
   Detailed summary:
               Head    Total(b)     Used(b)     Free(b)   Lowest(b)  Largest(b)
Processor   62EC07E0   219412512    67221920   152190592   142181548   139874020
      I/O   40000000    67110380    46387964    20722416    20722416    20706928

DFC's:
   Slot 1 (NP108 DFC)                         OK
   Slot 2 (NP108 DFC)                         OK
   Slot 3 (NP108 DFC)                         OK
   Slot 4 (NP60 DFC)                          OK
   Slot 5 (NP108 DFC)                         OK, 1 SPE's BAD
   Slot 7 (CT3 DFC)                           OK
AS5400#
AS5400#
AS5400#
AS5400#
AS5400#show health-monitor summ
AS5400#show health-monitor summary ?
  |  Output modifiers
  <cr>
```

The following example shows the display output of the **show health-monitor summary command**:

```
AS5400# show health-monitor summary
Chassis:
   Power Supply                              Failure
   Temperature                                    OK
   Fans                                           OK

Memory:
   Free Memory processor                          OK
   Memory Fragmentation Processor                 OK
   Free Memory I/O                                OK
   Memory Fragmentation I/O                       OK

DFC's:
   Slot 1 (NP108 DFC)                             OK
   Slot 2 (NP108 DFC)                             OK
   Slot 3 (NP108 DFC)                             OK
   Slot 4 (NP60 DFC)                              OK
   Slot 5 (NP108 DFC)                             OK
   Slot 7 (CT3 DFC)                               OK
```

Using the Interface Queue Wedge Monitor

The Interface Queue Wedge Monitor displays information about interface queue wedges and the times that they occur. An interface queue is wedged when the packet count that is being transmitted (output queue) or received (input queue) is equal to or greater than the maximum packet count size of the queue, and consequently, no more packets are transmitted or received.

The Interface Queue Wedge Monitor is enabled or disabled using following commands.

- **interface-monitor enable**
- **[no] interface-monitor enable**

The Interface Queue Wedge Monitor is disabled by default.

When the Interface Queue Wedge Monitor is enabled, it monitors all the input and output queue wedge interfaces. The **show wedged-interfaces** [**output/input**] command displays the queue wedged interfaces.

The **show wedged-interfaces output** command displays the output queue wedge interfaces and their respective time-since-wedges.

The **show wedged-interfaces input** command displays the input queue wedge interfaces and their respective time-since-wedges.

Interface Queue Wedge Output Procedure

When the Interface Queue Wedge Monitor is enabled, and an interface (such as a GigabitEthernet0/0 output queue is already wedged, the following message is displayed on the console, syslog, and buffer:

```
Eg:  00:39:15: %HHM-3-INTFWEDGE: GigabitEthernet0/0 Output Queue Wedged
```

The following procedure shows an example of how to enable, disable, and show the results of a wedged interface output:

Step 1 Enable the Interface Queue Wedge Monitor.

```
AS5400# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
AS5400#(config)# interface-monitor enable
AS5400#(config)# ^Z
```

```
AS5400#
```

Step 2 Show interfaces. (In this case, some interfaces are already wedged.)

```
AS5400# show wedged-interfaces output
Interface Name             Time Since Wedge
Async4/00                  00:23:33
Async4/01                  00:23:26
Async4/02                  00:23:21
Async4/03                  00:23:15
GigabitEthernet0/0            00:24:35
GigabitEthernet0/1            00:24:50
Virtual-Access2            00:38:19
Virtual-Access3            00:38:19
AS5400#
```

Step 3 Show the interface wedge process running.

```
AS5400# show proc cpu | i Intf
  39           0       341          0  0.00%  0.00%  0.00%   0 Intf Wedge Monit
AS5400#
```

Step 4 Disable the interface monitor.

```
AS5400# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
AS5400#(config)# no interface-monitor enable
AS5400#(config)# ^Z
AS5400#
AS5400#
```

Step 5 Show the interface wedge process running again. (No process is running now.)

```
AS5400# show proc cpu | i Intf
AS5400#
```

Step 6 Show the wedged interface output. (No output.)

```
AS5400# show wedged-interfaces output
Interface Name             Time Since Wedge
AS5400#
AS5400#
```

Step 7 Enable the Interface Queue Wedge Monitor again.

```
AS5400# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
AS5400#(config)# interface-monitor enable
AS5400#(config)# ^Z

AS5400#
00:39:03: %HHM-3-INTFWEDGE: Async4/00 Output Queue Wedged
00:39:04: %SYS-5-CONFIG_I: Configured from console by console
00:39:06: %HHM-3-INTFWEDGE: Async4/01 Output Queue Wedged
00:39:09: %HHM-3-INTFWEDGE: Async4/02 Output Queue Wedged
00:39:12: %HHM-3-INTFWEDGE: Async4/03 Output Queue Wedged
00:39:15: %HHM-3-INTFWEDGE: GigabitEthernet0/0 Output Queue Wedged
00:39:18: %HHM-3-INTFWEDGE: GigabitEthernet0/1 Output Queue Wedged
00:39:39: %HHM-3-INTFWEDGE: Virtual-Access2 Output Queue Wedged
00:39:42: %HHM-3-INTFWEDGE: Virtual-Access3 Output Queue Wedged
AS5400#
AS5400#
AS5400#
```

Step 8 Show wedge output.

```
AS5400# show wedge output
Interface Name              Time Since Wedge
Async4/00                   00:25:26
Async4/01                   00:25:20
Async4/02                   00:25:15
Async4/03                   00:25:08
GigabitEthernet0/0          00:26:29
GigabitEthernet0/1          00:26:44
Virtual-Access2             00:40:12
Virtual-Access3             00:40:12
AS5400#
```

Step 9 Show the interface wedge process running again. (Process is running now.)

```
AS5400# show proc cpu | i Intf
  39           0        25          0  0.00%  0.00%  0.00%   0 Intf Wedge Monit
```

Wedge Interface Input Procedure

The following procedure shows an example of how to enable, disable, and show the results of wedged interface input:

Step 1 Show wedged interfaces. (Interfaces are already wedged.)

```
AS5400# show wedged-interfaces input
Interface                   Time Since Wedge
Async4/00                   00:21:58
Async4/01                   00:21:51
Async4/02                   00:21:26
Async4/03                   00:21:21
GigabitEthernet0/0          11:58:28
GigabitEthernet0/1          11:58:46
Virtual-Access2             00:08:46
Virtual-Access3             00:08:46
AS5400#
AS5400#
```

Step 2 Show the interface wedge process running.

```
AS5400# show proc cpu | i Intf
  39           0        21          0  0.00%  0.00%  0.00%   0 Intf Wedge Monit
AS5400#
AS5400#
AS5400#
```

Step 3 Disable the interface monitor.

```
AS5400# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
AS5400#(config)# no interface-monitor enable
AS5400#(config)# ^Z
AS5400#
AS5400#
AS5400#
```

Step 4 Show the interface wedge process running again. (No process is running now.)

```
AS5400# show proc cpu | i Intf
AS5400#
AS5400#
```

Step 5 Show the wedged interface input. (No input.)

```
AS5400# show wedged-interfaces output
Interface                  Time Since Wedge
AS5400#
AS5400#
```

Step 6 Enable the Interface Queue Wedge Monitor again.

```
AS5400# configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
AS5400#(config)# interface-monitor enable
AS5400#(config)# ^Z
AS5400#
AS5400#

AS5400#
12:00:50: %HHM-3-INTFWEDGE: Async4/00 Input Queue Wedge
12:00:53: %HHM-3-INTFWEDGE: Async4/01 Input Queue Wedge
12:00:56: %HHM-3-INTFWEDGE: Async4/02 Input Queue Wedge
12:00:59: %HHM-3-INTFWEDGE: Async4/03 Input Queue Wedge
12:01:02: %HHM-3-INTFWEDGE: GigabitEthernet0/0 Input Queue Wedge
12:01:05: %HHM-3-INTFWEDGE: GigabitEthernet0/1 Input Queue Wedge
12:01:26: %HHM-3-INTFWEDGE: Virtual-Access2 Input Queue Wedge
12:01:29: %HHM-3-INTFWEDGE: Virtual-Access3 Input Queue Wedge
AS5400#
AS5400#
```

Step 7 Show the interface wedge process running again. (The process is running now.)

```
AS5400# show proc cpu | i Intf
  39           8       110         72  0.00%  0.00%  0.00%   0 Intf Wedge Monit
AS5400#
```

Step 8 Show the wedge input.

```
AS5400# show wedged-interfaces input
Interface                  Time Since Wedge
Async4/00                  00:24:14
Async4/01                  00:24:06
Async4/02                  00:23:42
Async4/03                  00:23:37
GigabitEthernet0/0         12:00:44
GigabitEthernet0/1         12:01:01
Virtual-Access2            00:11:02
Virtual-Access3            00:11:02
```

Where to Go Next

At this point you should go to these references:

- Chapter 3, "Basic Configuration Using the Command-Line Interface," to commission your Cisco AS5350XM or Cisco AS5400XM universal gateway.
- For additional basic configuration information, see the *Cisco IOS Dial Technologies Configuration Guide* and *Cisco IOS Dial Technologies Command Reference* publications for your Cisco IOS software release, available online at Cisco.com. For more advanced configuration topics, see the Cisco IOS software configuration guide, feature modules, and command reference publications that pertain to your Cisco IOS software release.

- For troubleshooting information, see the *System Error Messages* and *Debug Command Reference* publications for your Cisco IOS software release.