



Command Reference

This chapter lists new and revised commands specific to the MWAM configuration. The commands are categorized according to the console from which they are executed.

Supervisor Console Commands

The following commands are available at the Supervisor console:

- **mwam module allowed-vlan**
- **mwam module vlan-based**
- **session slot**
- **show mwam module**
- **mwam bootflash access**
- **execute-on**
- **logging listen mwam**
- **mwam module cpu logging**
- **show logging**
- **clear logging slot**

Processor Control Commands

The Processor Control (PC) commands are available when you session into MWAM processor 1 from the Supervisor console. The PC commands provide various functions for MWAM processors.

To access the PC commands, use the **session slot** command to establish a connection to processor 1. Then log into the PC as *root* user with the password *cisco*.

- **show processor**
- **show log**
- **show tech-support**
- **show version**
- **show images**
- **reload**
- **recover-ios**
- **normal-ios**
- **restore**

MWAM Console Commands

The following commands are available at the MWAM console:

- **mwam config-mode**
- **show mwam config-mode**
- **logging main-cpu**
- **show mwam**

Command Details

mwam module allowed-vlan

To configure the Ethernet connectivity from the backplane (i.e., switch fabric) to the individual processors on the MWAM, use the **mwam module allowed-vlan** command in global configuration mode. To remove this configuration, use the **no** form of the command.

```
mwam module slot_number port port_number allowed-vlan vlan-list
```

```
no mwam module slot_number port port_number allowed-vlan vlan-list
```

Syntax Description		
	<i>slot_number</i>	Specifies the slot that the module is plugged into.
	port <i>port_number</i>	Specifies the actual port number (1-3) used to connect to a processor complex within the MWAM (Figure 1-1 shows the port layout).
	allowed-vlan <i>vlan-list</i>	Configures the appropriate VLANs for this port.

Defaults There are no default behavior or values.

Command Modes Global configuration.

Command History	Release	Modification
	12.2(9)ZA	This command was introduced.

Usage Guidelines Each processor is connected to the backplane (i.e., switch fabric) through an Ethernet port connection. When both processors within a complex are enabled, they are required to share the Ethernet port connection, thus their port configurations must be in common.

See Figure 1-1 and Table 1-1 to determine which port corresponds to each processor.

Examples The following example illustrates the **mwam module allowed-vlan** command:

```
router(config)# mwam module 4 port 2 allowed-vlan 101
```

mwam module vlan-based

To assign MWAM traffic to a VLAN QoS policy, use the **mwam module vlan-based** command in global configuration mode. To remove this configuration, use the **no** form of the command.

mwam module *slot_number* **port** *port_number* **vlan-based**

no mwam module *slot_number* **port** *port_number* **vlan-based**

Syntax Description

<i>slot_number</i>	Specifies the slot that the module is plugged into.
<i>port_number</i>	Specifies one of three switch fabric interface ports (1-3) that connect the Supervisor module to the MWAM.

Defaults

There are no default behavior or values.

Command Modes

Global configuration.

Command History

Release	Modification
12.2(14)ZA7	This command was introduced.

Usage Guidelines

Use this command to assign MWAM traffic to a VLAN QoS policy.

See [Figure 1-1](#) and [Table 1-1](#) to determine which port corresponds to each processor.

Examples

The following example illustrates the **mwam module vlan-based** command:

```
Sup-7606(config)# mwam module 5 port 1 vlan-based
Sup-7606(config)# mwam module 5 port 2 vlan-based
Sup-7606(config)# mwam module 5 port 3 vlan-based
```

session slot

To establish a command session to a processor on an MWAM, use the **session slot** command in privileged EXEC mode.

```
session slot slot_number processor processor_number
```

Syntax Description	<i>slot_number</i>	Specifies the slot that the MWAM is plugged into.
	processor <i>processor_number</i>	Specifies the MWAM processor (1-6) to connect to.
	Note	Only MWAM processors 2-6 contain application images; MWAM processor 1 provides control commands for MWAM processors and complexes.

Defaults There are no default behavior or values.

Command Modes EXEC mode.

Command History	Release	Modification
	12.2(9)ZA	This command was introduced.

Usage Guidelines When you session into processor 1, you must enter the user name (*root*) and password (*cisco*).

Examples The following example illustrates the **session slot** command for processor 2 on the MWAM in slot 9:

```
Sup-7606#session slot 9 processor 2
The default escape character is Ctrl-^, then x.
You can also type 'exit' at the remote prompt to end the session
Trying 127.0.0.92 ... Open
```

```
proc2-9>
```

```
Press RETURN to get started!
```

```
proc2-9>
```

The following example illustrates the **session slot** command for processor 1 on the MWAM in slot 9:

```
Sup-7606#session slot 9 processor 1
The default escape character is Ctrl-^, then x.
You can also type 'exit' at the remote prompt to end the session
Trying 127.0.0.91 ... Open
```

```
SVCMWAM Image version 2.1(0.1b)
```

```
Tue Oct 14 11:04:43 EDT 2003
Copyright (c) 2002-2003 by cisco Systems, Inc.
All rights reserved.
Kernel 2.4.10.komodo on an i686
login: root
Password:
```

```
SVCMWAM Image version 2.1(0.1b)
Tue Oct 14 11:04:43 EDT 2003
Copyright (c) 2002-2003 by cisco Systems, Inc.
All rights reserved.
```

```
SVCMWAM Image version 2.1(0.1b)
Tue Oct 14 11:04:43 EDT 2003
Copyright (c) 2002-2003 by cisco Systems, Inc.
All rights reserved.
```

```
root@mwam-9#
```

show mwam module

To display connectivity information about the individual processors on the MWAM, use the **show mwam module** command in privileged EXEC mode.

```
show mwam module slot_number port port_number {state | traffic}
```

Syntax Description	slot_number	Displays the slot that the module is plugged into.
	port port_number	Displays the actual port number (1-3) used to connect to a processor complex within an MWAM (Figure 1-1).
	state	Displays the interface status.
	traffic	Displays the interface statistics.

Defaults There are no default behavior or values.

Command Modes EXEC mode.

Command History	Release	Modification
	12.2(9)ZA	This command was introduced.

Examples The following example illustrates the **show mwam module** command:

```
Sup-7606#sho mwam mod 7 port 1 state
Mwam module 7 data-port 1:
  Switchport: Enabled
  Administrative Mode: trunk
  Operational Mode: trunk
  Administrative Trunking Encapsulation: dot1q
  Operational Trunking Encapsulation: dot1q
  Negotiation of Trunking: Off
  Access Mode VLAN: 1 (default)
  Trunking Native Mode VLAN: 1 (default)
  Trunking VLANs Enabled: 1-999
  Pruning VLANs Enabled: 2-1001
  Vlans allowed on trunk:1-999
  Vlans allowed and active in management domain:1,3,11-12,17,60
  Vlans in spanning tree forwarding state and not pruned:
    1,3,11-12,17,60
  Allowed-vlan : 1-999

Sup-7606#sho mwam mod 7 port 1 traffic
Specified interface is up line protocol is up
  Hardware is C6k 1000Mb 802.3, address is 0010.7b00.0cb0 (bia 0010.7b00.0cb0)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 1000Mb/s
  Last input never, output never, output hang never
```

```

Last clearing of "show interface" counters never
Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 67
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 1000 bits/sec, 3 packets/sec
  0 packets input, 0 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 input packets with dribble condition detected
  46504312 packets output, 2501255885 bytes, 0 underruns
  0 output errors, 0 collisions, 10 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier
  0 output buffer failures, 0 output buffers swapped out

```

Sup-7606#sho mwam mod 7 port 2 state

```

Mwam module 7 data-port 2:
  Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1-999
Pruning VLANs Enabled: 2-1001
Vlans allowed on trunk:1-999
Vlans allowed and active in management domain:1,3,11-12,17,60
Vlans in spanning tree forwarding state and not pruned:
  1,3,11-12,17,60
Allowed-vlan : 1-999

```

Sup-7606#sho mwam mod 7 port 2 traffic

```

Specified interface is up line protocol is up
Hardware is C6k 1000Mb 802.3, address is 0010.7b00.0cb1 (bia 0010.7b00.0cb1)
MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
Full-duplex, 1000Mb/s
Last input 00:00:09, output never, output hang never
Last clearing of "show interface" counters never
Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 68
Queueing strategy: fifo
Output queue :0/40 (size/max)
5 minute input rate 1000 bits/sec, 1 packets/sec
5 minute output rate 1000 bits/sec, 2 packets/sec
  24922473 packets input, 430882532 bytes, 0 no buffer
  Received 93145 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
  0 input packets with dribble condition detected
  26261319 packets output, 4263983434 bytes, 0 underruns
  0 output errors, 0 collisions, 10 interface resets
  0 babbles, 0 late collision, 0 deferred
  0 lost carrier, 0 no carrier
  0 output buffer failures, 0 output buffers swapped out

```

Sup-7606#sho mwam mod 7 port 3 state

```

Mwam module 7 data-port 3:
  Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk

```



```
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
Trunking VLANs Enabled: 1-999
Pruning VLANs Enabled: 2-1001
Vlans allowed on trunk:1-999
Vlans allowed and active in management domain:1,3,11-12,17,60
Vlans in spanning tree forwarding state and not pruned:
  1,3,11-12,17,60
Allowed-vlan : 1-999
```

```
Sup-7606#sho mwam mod 7 port 3 traffic
Specified interface is up line protocol is up
  Hardware is C6k 1000Mb 802.3, address is 0010.7b00.0cb2 (bia 0010.7b00.0cb2)
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 1000Mb/s
  Last input 00:00:11, output never, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/2000/0/0 (size/max/drops/flushes); Total output drops: 22
  Queueing strategy: fifo
  Output queue :0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 1000 bits/sec, 2 packets/sec
    35270 packets input, 5189978 bytes, 0 no buffer
    Received 4444 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    46510270 packets output, 2501832096 bytes, 0 underruns
    0 output errors, 0 collisions, 10 interface resets
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
```

mwam bootflash access



Note

The MWAM bootflash access must be enabled if you want to operate in Supervisor mode.

To enable file transfer requests between the Supervisor bootflash and the individual processors on the MWAM, use the **mwam bootflash access** command in configuration mode. To remove this configuration, use the **no** form of the command.

mwam bootflash access

no mwam bootflash access

Syntax Description

mwam bootflash access	Configures bootflash access for MWAM file transfer requests.
------------------------------	--

Defaults

MWAM bootflash access is enabled by default. To disable access, issue **no mwam bootflash access**.

Command Modes

Configuration

Command History

Release	Modification
12.2(14)ZA4	This command was introduced.

Usage Guidelines

Use the **no** form of this command to disable MWAM access to the Supervisor bootflash.

Examples

The following example illustrates the **mwam bootflash access** command:

```
Sup-7606(config)# mwam bootflash access
```

logging listen mwam

To configure MWAM logging input to the Supervisor from an MWAM in the chassis, use the **logging listen mwam** command in global configuration mode. To remove this configuration, use the **no** form of the command.

```
logging listen mwam udp_port
```

```
no logging listen mwam udp_port
```

Syntax Description	<i>udp_port</i>	<p>Specifies the UDP port on the Supervisor module for listening to logs from MWAM(s) in the chassis. This command is required to enable the remote console and logging feature.</p> <p>A UDP port must be defined at both the Supervisor and the MWAM, and the defined ports must match.</p> <p>The port range is 4000-10000. The port must be divisible by 100 (for MWAM processor identification).</p>
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Defaults	There are no default behavior or values.
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Command Modes	Global configuration.
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Command History	<table border="1"> <thead> <tr> <th style="text-align: left;">Release</th> <th style="text-align: left;">Modification</th> </tr> </thead> <tbody> <tr> <td>12.2(14)ZA4</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	12.2(14)ZA4	This command was introduced.
Release	Modification				
12.2(14)ZA4	This command was introduced.				

Usage Guidelines	<p>Use this command to specify the Supervisor UDP port for listening to MWAM logging. Use the logging main-cpu command from the MWAM console to enable slave log generation to the Supervisor. Ensure that the UDP ports defined at both the Supervisor and MWAM are the same.</p>
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When selecting the UDP port for an MWAM processor, you are defining a base UDP port used at the Supervisor. Two additional source ports, based on the selected port, are then automatically defined.

For example, on the Supervisor you have configured the following:

```
logging listen mwam 10000
```

On the MWAM, you have configured processor 2 as follows:

```
logging main-cpu 10000 emergencies 99.99.99.99
```

The Supervisor listens on port 10000 and uses this port as its base UDP port. Ports 10002 and 10012 are automatically defined for traffic streams. On MWAM processor 3, the defined ports would be 10003 and 10013. The port numbering pattern for the additional ports is shown here:

MWAM Processor:	2	3	4	5	6
Base UDP Port: ¹	<40-100>00	<40-100>00	<40-100>00	<40-100>00	<40-100>00
Additional UDP Port:	<40-100>02	<40-100>03	<40-100>04	<40-100>05	<40-100>06
Additional UDP Port:	<40-100>12	<40-100>13	<40-100>14	<40-100>15	<40-100>16

1. Must be in the range 4000-10000 and be a multiple of 100.

The port numbering pattern is important if you are configuring other UDP ports on either the Supervisor or the MWAM processor.

Examples

The following example illustrates the **logging listen mwam** command:

```
router(config)# logging listen mwam 4100
```

execute-on

To initiate a remote command request on an MWAM processor from the Supervisor console, use the **execute-on** command in privileged EXEC mode.

```
execute-on {slot_number / all} {processor_number / all} command [subcommand]
```

Syntax Description	
<i>slot_number</i>	Specifies the slot that the module is plugged into.
all	Specifies all the MWAMs in the chassis. ¹
<i>processor_number</i>	Specifies the processor number within the MWAM.
all	Specifies all the processors in the MWAM. ¹
<i>command</i>	Specifies the command to execute on the MWAM processor. The following commands are supported: <ul style="list-style-type: none"> • debug • dir • show • systat • undebug • ping ip_addr • log {show systat dir} The commands of the PC are also supported (see Processor Control Commands).
<i>subcommand</i>	(Optional) Additional parameters to be included with the command and executed by the remote processor. <p>Note No Help is available for the <i>parameter</i> portion of the command.</p>

1. When using the **all** option, the command is executed on all active processors but is not executed on processors that are inactive. The processor state can be shown using the **show logging** command.

Defaults There are no default behavior or values.

Command Modes Privileged EXEC.

Command History	Release	Modification
	12.2(14)ZA4	This command was introduced.
	12.3(5a)B	Added remote console support for PC commands.

Usage Guidelines The remote console and logging feature must be configured to use the **execute-on** command. See [Configuring Remote Console and Logging](#).

When using the **all** options, the designated command is executed on all active processors. Inactive processors are ignored. Use the **show logging** command to determine if the processor is active.

To terminate a remote command that is in progress, the user can activate the escape sequence defined on the Supervisor console. For example, if a user initiates a **log show** command on a remote MWAM processor and the command execution is longer than expected, the user can terminate the command from the Supervisor console by entering **Ctrl-^**. To determine the escape sequence for your console/vty connection, use the **show line *line_number*** command.

Examples

The following example executes the **log show running-config** command on processor 2 of the MWAM in slot 5.

```
Sup-7600# execute-on 5 2 log show running-config
```

mwam module cpu logging

To configure the severity level of MWAM logging information to send to the Supervisor module, use the **mwam module cpu logging** command in global configuration mode. To remove this configuration, use the **no** form of the command.

```
mwam module {slot_number | all} cpu {processor_number | all} logging log_level
```

```
no mwam module {slot_number | all} cpu {processor_number | all} logging log_level
```

Syntax Description

<i>slot_number</i> all	Specifies the slot that the module is plugged into or all MWAMs in the chassis
<i>cpu_number</i> all	Specifies the processor on the MWAM or all processors on the MWAM.
<i>log_level</i>	Limits the logging of messages to be sent to the Supervisor to a specified level (e.g., if <i>log_level</i> is critical , then emergencies, alerts, and critical events are sent). You can enter the level number or name. <ul style="list-style-type: none"> • emergencies (severity level 0)—system is unusable • alerts (severity level 1)—immediate action required • critical (severity level 2)—critical condition • errors (severity level 3)—error condition • warnings (severity level 4)—warning condition • notifications (severity level 5)—normal but significant condition • informational (severity level 6)—informational message • debugging (severity level 7)—debug messages

Defaults

The default configuration is logging enabled on all MWAM processors for emergencies.

Command Modes

Global configuration.

Command History

Release	Modification
12.2(14)ZA4	This command was introduced.

Usage Guidelines

Logging methods may require additional configuration such as the destination IP address for the receiver of the log traffic. To configure the destination IP address, use the **logging main-cpu** command.

Examples

The following example sets the logging level for all MWAM processors in the chassis to the error logging level:

```
Sup-7600(config)# mwam module all cpu all logging error
```

The following example allows the Supervisor console to display debugging log messages received from processor 2 on the MWAM in slot 5:

```
Sup-7600(config)#mwam module 5 cpu 2 logging debug
```


show logging

To display the slave log options that are enabled on the MWAM, use the **show logging** command in privileged EXEC mode.

```
show logging {slot slot_number | summary}
```

Syntax Description	<i>slot_number</i>	Specifies the slot that the module is plugged into.
	summary	Displays logging information for all MWAMs in the chassis.

Defaults There are no default behavior or values.

Command Modes Privileged EXEC configuration.

Command History	Release	Modification
	12.2(14)ZA4	This command was introduced.
	12.2(14)ZA5	The output of this command was modified to incorporate improvements in the display of information.

Usage Guidelines Use this command to display the slave log options that are enabled.

Examples The following example illustrates the **show logging** command:

```
router# show logging slot 5
CPU: 05/2      State: ACTIVE      Command Active: No
ttynum: -1      Logging Level: debugging
timeouts:      1 logevents:      0
sequence errors: 0 reset count:      16001 KPA_missed: 4294967201
send seq:      5 tty rcv seq:      0 log rcv seq: 0
Current queue count: 0 IP addr: 172.18.48.94
.
.
.
```



Note Each processor (CPU) on the MWAM in slot 5 is displayed in the output.

Field descriptions for the output of this command are listed below:

Active	Processor is operational and remote console/logging is active.
Online	Processor is operational but remote console/logging is not active. Note This state commonly occurs when a processor is not enabled by the application running on the MWAM.
Inactive	Processor is rest or resetting, and remote console/logging is inactive.
Proving	The remote console connection is testing the IP path between the Supervisor and MWAM processor before moving to the ACTIVE state. If there is a configuration problem or VLAN mismatch, the connection may stay in Proving state until the configuration issue is resolved.
ttynum	Line number of the user with an active command on the processor. A value of -1 indicates no user.
Logging Level	Indicates the maximum severity level at which the Supervisor displays logger messages from an MWAM.
timeouts	Number of occurrences of remote command execution time-out.
logevents	Number of logging events.
sequence errors	Protocol sequence errors caused by overrun or time-out.
reset count	Number of times the connection reset because of connection time-out or MWAM processor reload.
KPA_missed	Number of keepalives missed.
send seq	Sequence number of remote commands sent.
tty rcv seq	Sequence number of remote command response messages received from the MWAM processor.
log rcv seq	Sequence number of remote logging messages received from the MWAM processor.
Current queue count	Number of messages received at the Supervisor and queued to be processed (logged/displayed).
IP addr	IP address of the MWAM processor. Note Typically, this is an internal address, but it can be a defined address, such as the one shown in processor 6 (06/6) in the example. Use the logging main-cpu command on the MWAM processor to define a different IP address, if required.

clear logging slot

To clear the slave log options that are enabled on the MWAM, use the **clear logging slot** command in privileged EXEC mode.

clear logging slot *slot_number* **counts**

Syntax Description	<i>slot_number</i>	Specifies the slot that the module is plugged into.
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Defaults	There are no default behavior or values.	
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Command Modes	Privileged EXEC configuration.	
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Command History	Release	Modification
	12.2(14)ZA4	This command was introduced.

Usage Guidelines	Use this command to clear the slave log options that are enabled.	
-------------------------	---	--

Examples	The following example illustrates the clear logging slot command:	
	<code>router# clear logging slot 6 counts</code>	

show processor

To show status information about an MWAM processor, use the **show processor** command available at the PC complex (processor 1 on the MWAM).

```
show processor {processor_number | all}
```

Syntax Description	show processor	Shows status information for the MWAM processor.
	<i>processor_number</i>	Specifies the MWAM processor number (2-6).
	all	Specifies all processors on the MWAM.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.3(3)B1	This command was introduced.

Usage Guidelines Use this command when you want to show the status of one or more MWAM processors.



Note You must first establish a session to processor 1 ([session slot](#) command).

The output of this command provides the following counter information:

Counter	Description
User Resets	Number of times the user manually reloaded the processor
IOS Reloads	Number of times the user issued the reload command on the processor itself
Unknown Resets	Number of times the processor reset without a known cause (e.g., IOS crash)
Timeouts	Number of times the processor complex stopped responding to heartbeats

Examples The following example illustrates the **show processor** command for processor 2 in slot 9:

```
root@mwam-9#show processor 2

Processor 2, Complex 1, Core 0
Complex Status is Online
Information
Health Monitoring
  0 User Resets, 0 IOS Reloads, 0 Unknown Resets
  0 Timeouts
  0 Consecutive heartbeats missed
  244528/244528 Heartbeats acked since last reset
```

```
0% CPU Utilization
Messages
4115/4115 VRTC Update(s) acked by PC
244528/244528 Heartbeats(s) acked from IOS
1/1 ROMMON Config Msg(s) acked from ROMMON
0/0 Supervisor Switchover Msg(s) acked from IOS
0/0 Prepare Reload Msg(s) acked from IOS
root@mwam-9#
```

show log

To show the upgrade or restart logs, use the **show log** command available at the PC complex (processor 1 on the MWAM).

```
show log {upgrade | restart}
```

Syntax Description	upgrade	Shows the upgrade log.
	restart	Shows the MWAM and process restart log.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.3(3)B1	This command was introduced.

Usage Guidelines Use this command when you want to display the contents of the upgrade log.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples

The following examples illustrate the **show log** command:

```
root@mwam-4#show log upgrade
Log 'upgrade' is not available.
root@mwam-4
```

```
root@mwam-4# show log restart

MWAM started on Fri Jan 1 00:02:20 UTC 1988

Restarting rcal on Fri Jan 1 00:02:24 UTC 1988
```

```
MWAM started on Fri Jan 1 00:02:20 UTC 1988
MWAM shutdown on Mon Jun 14 15:29:47 UTC 2004
```

```
MWAM started on Fri Jan 1 00:02:22 UTC 1988
root@mwam-4#
```

reload

To reload processors on an MWAM, use the **reload** command available at the PC complex (processor 1 on the MWAM).

reload {**processor** *processor_number* | **complex** *complex_number* | **all**}

Syntax Description		
processor <i>processor_number</i>	Specifies a processor (2-6) on the MWAM.	
	Note	Even though only one processor is specified, both processors on the complex will reload.
complex <i>complex_number</i>	Specifies a complex (0, 1, 2, or all) on the MWAM.	
all	Specifies all processors on the MWAM.	

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.3(3)B1	This command was introduced.

Usage Guidelines Use this command when you want to reload MWAM processors or complexes. When you reload a single processor, the other processor on the complex will also reload. See [Table 1-1](#) for processor-to-complex mapping.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples The following examples illustrate the **reload** command.

This example reloads processors 4 and 5 on complex 2 of the MWAM in slot 9:

```
root@mwam-9#reload complex 2
```

This example also reloads processors 4 and 5 on complex 2 of the MWAM in slot 9:

```
root@mwam-9#reload processor 4
```

This example reloads processors 2-6 of the MWAM in slot 9:

```
root@mwam-9#reload all
```

recover-ios

To set the configuration register to boot with a clean configuration, use the **recover-ios** command available at the PC complex (processor 1 on the MWAM).

recover-ios *complex_number*

Syntax Description	<i>complex_number</i> Specifies a complex (0, 1, 2, or all) on the MWAM.
---------------------------	--

Defaults	There are no default behavior or values.
-----------------	--

Command Modes	PC command
----------------------	------------

Command History	Release	Modification
	12.2(9)ZA	This command was introduced.

Usage Guidelines	Use this command when you want to recover from a lockout condition on an MWAM processor as described in Recovering from MWAM Processor Lockout .
-------------------------	--



Note	You must first establish a session to processor 1 (session slot command).
-------------	--

Examples	The following example illustrates the recover-ios command on processor complex 2 of the MWAM in slot 9:
-----------------	--

```


root@mwam-9#recover-ios 2
processing -p
processing -c
Setting DHCP options for processor complex 2
Setting config-reg value to: 0x40
Base external MAC: "0003.FEAB.9FB6"
Internet Software Consortium DHCP Server V3.0.lrc6
Copyright 1995-2001 Internet Software Consortium.
All rights reserved.
For info, please visit http://www.isc.org/products/DHCP
Wrote 0 deleted host decls to leases file.
Wrote 0 new dynamic host decls to leases file.
Wrote 0 leases to leases file.
Listening on LPF/eth0/02:00:00:00:0f:00/128.0.1.0/24
Sending on   LPF/eth0/02:00:00:00:0f:00/128.0.1.0/24
Listening on LPF/eth1/02:00:00:00:0f:10/128.0.2.0/24
Sending on   LPF/eth1/02:00:00:00:0f:10/128.0.2.0/24
Sending on   Socket/fallback/fallback-net

```


normal-ios

To set the configuration register to boot with a normal configuration, use the **normal-ios** command available at the PC complex (processor 1 on the MWAM).

normal-ios

Syntax Description	normal-ios Sets the configuration register to boot with a normal configuration.				
Defaults	There are no default behavior or values.				
Command Modes	PC command				
Command History	<table border="1"> <thead> <tr> <th>Release</th> <th>Modification</th> </tr> </thead> <tbody> <tr> <td>12.(9)ZA</td> <td>This command was introduced.</td> </tr> </tbody> </table>	Release	Modification	12.(9)ZA	This command was introduced.
Release	Modification				
12.(9)ZA	This command was introduced.				
Usage Guidelines	Use this command to set the configuration register to boot using the normal startup configuration. This command resets the effects of the recover-ios command. It is used in Recovering from MWAM Processor Lockout .				
 Note	You must first establish a session to processor 1 (session slot command).				

Examples

The following example illustrates the **normal-ios** command:

```
root@mwam-9#normal-ios
Base external MAC: "0003.FEAB.9FB6"
Internet Software Consortium DHCP Server V3.0.1rc6
Copyright 1995-2001 Internet Software Consortium.
All rights reserved.
For info, please visit http://www.isc.org/products/DHCP
Wrote 0 deleted host decls to leases file.
Wrote 0 new dynamic host decls to leases file.
Wrote 0 leases to leases file.
Listening on LPF/eth0/02:00:00:00:0f:00/128.0.1.0/24
Sending on   LPF/eth0/02:00:00:00:0f:00/128.0.1.0/24
Listening on LPF/eth1/02:00:00:00:0f:10/128.0.2.0/24
Sending on   LPF/eth1/02:00:00:00:0f:10/128.0.2.0/24
Sending on   Socket/fallback/fallback-net
root@mwam-9#
```

show images

To list the images stored on the MWAM, use the **show images** command available at the PC complex (processor 1 on the MWAM).

show images

Syntax Description This command has no arguments or keywords.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.(9)ZA	This command was introduced.

Usage Guidelines Use this command to list the image names on the MWAM.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples The following example illustrates the **show images** command:

```
root@mwam-9#show images
Device name          Partition#          Image name
-----
Compact flash(cf)   6                  SIMPSON_RAM.bin
Version Information:
Compiled Tue 19-Aug-03 13:35 by dchih
Compact flash(cf)   6                  svcmwam-js-mz.geo_t_040121
Version Information:
Compiled Wed 21-Jan-04 02:34 by $

AP software is c6svcmwam-js-mz.geo_t_040121.2-1-0-3b.6cpu.bin
root@mwam-9#
```

restore

To restore the previously loaded IOS image and ROM-Monitor image, use the **restore** command available at the PC complex (processor 1 on the MWAM).

restore

Syntax Description This command has no arguments or keywords.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.3(5a)B	This command was introduced.

Usage Guidelines Use this command to restore the previously loaded IOS image on the MWAM. You must then reload the MWAM or the individual processors to activate the image. You can revert to the previous image only if you have not rebooted/recycled the MWAM.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples The following example illustrates the **restore** command:

```
root@mwam-9#restore
Restoring image
Restoring configuration files
Operation completed successfully
root@mwam-9#
```

show tech-support

To display general information about the MWAM and its processors when it reports a problem, use the **show tech-support** command available at the PC complex (processor 1 on the MWAM).

show tech-support

Syntax Description This command has no arguments or keywords.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.(9)ZA	This command was introduced.

Usage Guidelines The **show tech-support** command from the PC displays the output of a number of show commands. The **show tech-support** command is useful for collecting a large amount of information for troubleshooting purposes. The output of this command can be provided to technical support representatives when reporting a problem.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples The following example illustrates the **show tech-support** command:

```
root@mwam-4# show tech-support
----- show version -----

SVCWAM Image version 2.1(1.0)
Mon Feb 23 01:29:45 EST 2004
Copyright (c) 2002-2003, 2004 by cisco Systems, Inc.
All rights reserved.

~snipped~
```

show version

To display information about the currently loaded software version along with hardware and device information, use the **show version** command available at the PC complex (processor 1 on the MWAM).

show version

Syntax Description This command has no arguments or keywords.

Defaults There are no default behavior or values.

Command Modes PC command

Command History	Release	Modification
	12.(9)ZA	This command was introduced.

Usage Guidelines The **show version** command from the PC displays information about the software version currently running on the MWAM.



Note You must first establish a session to processor 1 ([session slot](#) command).

Examples The following example illustrates the **show version** command:

```
root@mwam-4# show version

SVCWAM Image version 2.1(1.0)
Mon Feb 23 01:29:45 EST 2004
Copyright (c) 2002-2003, 2004 by cisco Systems, Inc.
All rights reserved.

AP software is c6svc-5mwam-g4js-bf21_10.123-7.T1
AP software is based upon Maintenance image version: 3.1(0.2)
IOS Software is svcwam-g4js-mz.123-7.T1
5 Processor Configuration

Line Card Number :WS-SVC-MWAM-1
Number of Pentium-class Processors :          1
BIOS Vendor: Phoenix Technologies Ltd.
BIOS Version: 4.0-Rel 6.0.4
Total available memory: 500 MB
Size of compact flash: 122 MB

root@mwam-4#
```

mwam config-mode

To set the MWAM configuration file storage mode, use the **mwam config-mode** command in privileged EXEC mode from the MWAM console.

mwam config-mode {**local** | **supervisor**}

Syntax Description	mwam config-mode	Sets the MWAM configuration file storage mode.
	local	Stores configuration files locally in NVRAM of the MWAM processor.
	supervisor	Stores configuration files in the Supervisor bootflash.

Defaults Default setting depends on the contents of NVRAM. If NVRAM contains no *startup-config* file, the default setting is Supervisor mode. If the NVRAM contains a *startup-config* file, the default setting is local mode.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(1a)BW	This command was introduced.

Usage Guidelines Use this command when you want to set the MWAM configuration file storage mode. You must first enable MWAM access to the Supervisor bootflash with the **mwam bootflash access** command from the Supervisor console.



Caution

If you are operating in the Supervisor mode in a chassis that does not have redundant Supervisor modules, back up both the *startup-config* file of the Supervisor module and all *SLOT*PC*.cfg* files on the bootflash device. Failure to take this precaution could result in the loss of all MWAM configurations, along with the Supervisor configuration.

Examples The following examples illustrate the **mwam config-mode** command:

```
mwam-6-4# mwam config-mode local
Building configuration...
[OK]
Successfully changed mode: mwam config-mode local

mwam-6-4# mwam config-mode supervisor
Writing bootflash:SLOT6PC4.cfg
Config uploaded to supervisor in slot 1

Successfully changed mode: mwam config-mode supervisor
```

show mwam config-mode

To show the MWAM configuration file storage mode, use the **show mwam config-mode** command in privileged EXEC mode.

show mwam config-mode

Syntax Description	show mwam config-mode	Displays the MWAM configuration file storage mode.
---------------------------	------------------------------	--

Defaults There are no default behavior or values.

Command Modes Privileged EXEC

Command History	Release	Modification
	12.3(1a)BW	This command was introduced.

Usage Guidelines Use this command when you want to display the current file storage mode for MWAM configuration files.

Examples The following examples illustrate the **show mwam config-mode** command:

```
mwam-6-4# show mwam config-mode
mwam config-mode local
```

```
mwam-6-6# show mwam config-mode
mwam config-mode supervisor
```

logging main-cpu

To configure MWAM log redirection to the Supervisor for all events up to a maximum specified log level, use the **logging main-cpu** command in global configuration mode. To remove this configuration, use the **no** form of the command.

```
logging main-cpu udp_port [log_level] [ip_addr]
```

```
no logging main-cpu udp_port [log_level] [ip_addr]
```

Syntax Description	<i>udp_port</i>	Specifies the UDP port on the MWAM for sending logs to the Supervisor. A UDP port must be defined at both the Supervisor and the MWAM, and the ports must match. The port range is 4000-10000. The port must be divisible by 100.
	<i>log_level</i>	(Optional) Limits the logging of messages displayed on the console terminal to a specified level (e.g., if <i>log_level</i> is critical , then emergencies, alerts, and critical events are sent). You can enter the level number or name. <ul style="list-style-type: none"> • emergencies (severity level 0)—system is unusable • alerts (severity level 1)—immediate action required • critical (severity level 2)—critical condition • errors (severity level 3)—error condition • warnings (severity level 4)—warning condition • notifications (severity level 5)—normal but significant condition • informational (severity level 6)—informational message • debugging (severity level 7)—debug messages
	<i>ip_addr</i>	(Optional) Specifies an IP address for traffic flow through the switching fabric instead of the EOBC. You can use this option to direct traffic on a dedicated management VLAN.

Defaults Default value for the log level is **errors** (3).

Command Modes Global configuration.

Command History	Release	Modification
	12.3(1a)BW	This command was introduced.

Usage Guidelines Use this command to specify the MWAM UDP port for sending MWAM logs to the Supervisor. Use the **logging listen mwam** command from the Supervisor console to enable MWAM log input to the Supervisor. Ensure that the UDP ports defined at both the Supervisor and MWAM are the same.

When selecting the UDP port for an MWAM processor, you are defining a base UDP port used at the Supervisor. Two additional source ports, based on the selected port, are then automatically defined.

For example, on the Supervisor you have configured the following:

```
logging listen mwam 10000
```

On the MWAM, you have configured processor 2 as follows:

```
logging main-cpu 10000 emergencies 99.99.99.99
```

The Supervisor listens on port 10000 and uses this port as its base UDP port. Ports 10002 and 10012 are automatically defined for traffic streams. On MWAM processor 3, the defined ports would be 10003 and 10013. The port numbering pattern for the additional ports is shown here:

MWAM Processor:	2	3	4	5	6
Base UDP Port: ¹	<40-100>00	<40-100>00	<40-100>00	<40-100>00	<40-100>00
Additional UDP Port:	<40-100>02	<40-100>03	<40-100>04	<40-100>05	<40-100>06
Additional UDP Port:	<40-100>12	<40-100>13	<40-100>14	<40-100>15	<40-100>16

1. Must be in the range 4000-10000 and be a multiple of 100.

The port numbering pattern is important if you are configuring other UDP ports on either the Supervisor or the MWAM processor.

Examples

The following example enables the remote console and logging feature for an MWAM processor and specifies UDP port 10000 to match the port designated on the Supervisor. There is no logging default value; therefore, this command only enables the console portion of the feature.

```
mwam-6-4(config)#logging main-cpu 10000
```

The following example enables logging messages up to level 7 (debug) to be sent to the Supervisor module. Specifying the logging level is required to direct the logging messages to the Supervisor.

```
mwam-6-4(config)#logging main-cpu 10000 debug
```

The following example includes the IP address to direct logging and console messages to the Catalyst switching fabric. This can be used by service providers that define a management VLAN between the Supervisor and each MWAM processor.

```
mwam-6-4(config)#logging main-cpu 10000 debug 172.18.48.84
```

show mwam

To show MWAM Transation Look-aside Buffers (TLBs) and cache errors, use the **show mwam** command in privileged EXEC mode.

show mwam

Syntax Description	show mwam	Displays MWAM TLBs and cache errors.
Defaults	There are no default behavior or values.	
Command Modes	Privileged EXEC	
Command History	Release	Modification
	12.3(5a)B	This command was introduced.
Usage Guidelines	This command can be used to provide information about TLBs and cache errors.	

Examples

The following examples illustrate the **show mwam** command:

```

mwam-7-2#show mwam
Slot Number: 7, Complex Number: 1, Global Session Number: 2
  2 active cpu(s) in complex

Gi0/0 IDB: 0x235D978C, MAC address: 0005.9a38.3820
Gi0/1 IDB: 0x235F0BF8, MAC address: 0200.0000.0110, IP address: 128.0.1.2
Gi0/2 IDB: 0x23606778, MAC address: 0200.0000.0120

Network IO Interrupt Throttling:
  throttle count=0, timer count=0
  active=0, configured=0
  netint usec=4000, netint mask usec=200

512k of L2 cache shared between CPU 0 and 1

TLB entries (49/64 used):
Virt Address range      Phy Address range      Attributes
0x10000000:0x101FFFFFF  0x020000000:0x0201FFFFFF  CacheMode=2, RW, Valid
0x10200000:0x103FFFFFF  0x020200000:0x0203FFFFFF  CacheMode=2, RW, Valid
0x20200000:0x203FFFFFF  0x000200000:0x0003FFFFFF  CacheMode=5, RO, Valid
0x20400000:0x205FFFFFF  0x000400000:0x0005FFFFFF  CacheMode=5, RO, Valid
0x20600000:0x207FFFFFF  0x000600000:0x0007FFFFFF  CacheMode=5, RO, Valid
0x20800000:0x20FFFFFFF  0x000800000:0x000FFFFFFF  CacheMode=5, RO, Valid
0x21000000:0x211FFFFFF  0x001000000:0x0011FFFFFF  CacheMode=5, RO, Valid
0x21200000:0x213FFFFFF  0x001200000:0x0013FFFFFF  CacheMode=5, RO, Valid
0x21400000:0x2147FFFF  0x001400000:0x00147FFFF  CacheMode=5, RO, Valid

```

```

0x21480000:0x214FFFFFF 0x001480000:0x0014FFFFFF CacheMode=5, RO, Valid
0x21500000:0x2151FFFF 0x001500000:0x00151FFFF CacheMode=5, RO, Valid
0x21520000:0x21527FFF 0x001520000:0x001527FFF CacheMode=5, RO, Valid
0x21528000:0x2152FFFF 0x001528000:0x00152FFFF CacheMode=5, RW, Valid
0x21530000:0x21537FFF 0x001530000:0x001537FFF CacheMode=5, RW, Valid
0x21538000:0x2153FFFF 0x001538000:0x00153FFFF CacheMode=5, RW, Valid
0x21540000:0x2155FFFF 0x001540000:0x00155FFFF CacheMode=5, RW, Valid
0x21560000:0x2157FFFF 0x001560000:0x00157FFFF CacheMode=5, RW, Valid
0x21580000:0x215FFFFF 0x001580000:0x0015FFFFF CacheMode=5, RW, Valid
0x21600000:0x217FFFFF 0x001600000:0x0017FFFFF CacheMode=5, RW, Valid
0x21800000:0x21FFFFFF 0x001800000:0x001FFFFFF CacheMode=5, RW, Valid
0x22000000:0x221FFFFF 0x002000000:0x0021FFFFF CacheMode=5, RW, Valid
0x22200000:0x2227FFFF 0x002200000:0x00227FFFF CacheMode=5, RW, Valid
0x22280000:0x2229FFFF 0x002280000:0x00229FFFF CacheMode=5, RW, Valid
0x222A0000:0x222BFFFF 0x0022A0000:0x0022BFFFF CacheMode=5, RW, Valid
0x222C0000:0x222DFFFF 0x0022C0000:0x0022DFFFF CacheMode=5, RW, Valid
0x222E0000:0x222FFFFF 0x0022E0000:0x0022FFFFF CacheMode=5, RW, Valid
0x22300000:0x2237FFFF 0x002300000:0x00237FFFF CacheMode=5, RW, Valid
0x22380000:0x223FFFFF 0x002380000:0x0023FFFFF CacheMode=5, RW, Valid
0x22400000:0x225FFFFF 0x002400000:0x0025FFFFF CacheMode=5, RW, Valid
0x22600000:0x227FFFFF 0x002600000:0x0027FFFFF CacheMode=5, RW, Valid
0x22800000:0x22FFFFF 0x002800000:0x002FFFFF CacheMode=5, RW, Valid
0x23000000:0x237FFFFF 0x003000000:0x0037FFFFF CacheMode=5, RW, Valid
0x23800000:0x23FFFFF 0x003800000:0x003FFFFF CacheMode=5, RW, Valid
0x24000000:0x25FFFFF 0x080000000:0x081FFFFF CacheMode=5, RW, Valid
0x26000000:0x27FFFFF 0x082000000:0x083FFFFF CacheMode=5, RW, Valid
0x28000000:0x29FFFFF 0x084000000:0x085FFFFF CacheMode=5, RW, Valid
0x2A000000:0x2BFFFFF 0x086000000:0x087FFFFF CacheMode=5, RW, Valid
0x2C000000:0x2DFFFFF 0x090000000:0x091FFFFF CacheMode=5, RW, Valid
0x2E000000:0x2FFFFF 0x092000000:0x093FFFFF CacheMode=5, RW, Valid
0x30000000:0x31FFFFF 0x094000000:0x095FFFFF CacheMode=5, RW, Valid
0x32000000:0x33FFFFF 0x096000000:0x097FFFFF CacheMode=5, RW, Valid
0x34000000:0x35FFFFF 0x0C0000000:0x0C1FFFFF CacheMode=5, RW, Valid
0x36000000:0x37FFFFF 0x0C2000000:0x0C3FFFFF CacheMode=5, RW, Valid
0x38000000:0x39FFFFF 0x0C4000000:0x0C5FFFFF CacheMode=5, RW, Valid
0x3A000000:0x3BFFFFF 0x0C6000000:0x0C7FFFFF CacheMode=5, RW, Valid
0x3C000000:0x3C7FFFFF 0x080000000:0x08087FFFFF CacheMode=5, RW, Valid
0x3C800000:0x3CFFFFF 0x008800000:0x008FFFFF CacheMode=5, RW, Valid
0x1A000000:0x1BFFFFF 0x00A000000:0x00BFFFFF CacheMode=5, RW, Valid
0x1E000000:0x1FFFFFF 0x00E000000:0x00FFFFFF CacheMode=5, RW, Valid

```

0 spurious cache errors detected.

0 correctable ECC errors have occurred, A_BUS_L2_ERRORS: 0x0, A_BUS_MEMIO_ERRORS: 0x0

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