ATM Commands

This chapter describes the function and displays the syntax of each ATM command. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

arp-server [**time-out** *minutes* | **nsap** *nsap-address*]

To identify the ATM ARP server for the IP network or set time-to-live (TTL) values for entries in the ATM ARP table, use the **arp-server** interface configuration command.

time-out *minutes*	Number of minutes a destination entry listed in the ATM ARP server's ARP table will be kept before the server takes any action to verify or time out the entry. The default time-out value is 20 minutes.
nsap *nsap-address*	NSAP address of the ATM ARP server.

atm aal aal3/4

To enable a subinterface supporting ATM adaptation layer 3/4 (AAL3/4) on an ATM interface, use the **atm aal aal3/4** interface configuration command.

[**no**] **atm address-registration**

To enable the router to engage in address registration and callback functions with the Interim Local Management Interface (ILMI), use the **atm address-registration** interface configuration command. To disable ILMI address registration functions, use the **no** form of this command.

atm backward-max-burst-size-clp0 *cell-count*
no atm backward-max-burst-size-clp0

To change the maximum number of high-priority cells coming from the destination router to the source router at the burst level on the switched virtual circuit (SVC), use the **atm backward-max-burst-size-clp0** map-class configuration command. The **no** form of this command restores the default.

cell-count	Maximum number of high-priority cells coming from the destination router at the burst level. The default is –1.

atm backward-max-burst-size-clp1 *cell-count*
no atm backward-max-burst-size-clp1

To change the maximum number of low-priority cells coming from the destination router to the source router at the burst level on the SVC, use the **atm backward-max-burst-size-clp1** map-class configuration command. The **no** form of this command restores the default value.

cell-count	Maximum number of low-priority cells coming from the destination router at the burst level. The default is –1.

atm backward-peak-cell-rate-clp0 *rate*
no atm backward-peak-cell-rate-clp0

To change the peak rate of high-priority cells coming from the destination router to the source router on the SVC, use the **atm backward-peak-cell-rate-clp0** map-class configuration command. The **no** form of this command restores the default.

rate	Maximum rate in kilobits per second (kbps) that this SVC can receive high-priority cells from the destination router. The default is –1. Maximum value is 155,000 kbps.

atm backward-peak-cell-rate-clp1 *rate*
no atm backward-peak-cell-rate-clp1

To change the peak rate of low-priority cells coming from the destination router to the source router on the SVC, use the **atm backward-peak-cell-rate-clp1** map-class configuration command. The **no** form of this command restores the default.

rate	Maximum rate in kilobits per second (kbps) that this SVC can receive low-priority cells from the destination router. The default is –1. Maximum value is 155,000 kbps.

atm backward-sustainable-cell-rate-clp0 *rate*
no atm backward-sustainable-cell-rate-clp0

To change the sustainable rate of high-priority cells coming from the destination router to the source router on the SVC, use the **atm backward-sustainable-cell-rate-clp0** map-class configuration command. The **no** form of this command restores the default.

rate	Sustainable rate in kilobits per second (kbps) that this SVC can receive high-priority cells from the destination router. The default is –1. Maximum value is 155,000 kbps.

atm backward-sustainable-cell-rate-clp1 *rate*
no atm backward-sustainable-cell-rate-clp1

To change the sustainable rate of low-priority cells coming from the destination router to the source router on the SVC, use the **atm backward-sustainable-cell-rate-clp1** map-class configuration command. The **no** form of this command restores the default value.

rate	Sustainable rate in kilobits per second (kbps) that this SVC can receive low-priority cells from the destination router. The default is –1. Maximum value is 155,000 kbps.

[**no**] **atm clock internal**

To cause the AIP to generate the transmit clock internally, use the **atm clock internal** interface configuration command. The **no** form of this command restores the default value.

atm exception-queue *number*
no atm exception-queue

To set the exception-queue length, use the **atm exception-queue** interface configuration command. The **no** form of this command restores the default value.

number	Number of entries, in the range of 8 to 256. The default is 32 entries.

atm forward-max-burst-size-clp0 *cell-count*
no atm forward-max-burst-size-clp0

To change the maximum number of high-priority cells going from the source router to the destination router at the burst level on the SVC, use the **atm forward-max-burst-size-clp0** map-class configuration command. The **no** form of this command restores the default value.

cell-count	Maximum number of high-priority cells going from the source router at the burst level. The default is –1.

atm forward-max-burst-size-clp1 *cell-count*
no atm forward-max-burst-size-clp1

To change the maximum number of low-priority cells going from the source router to the destination router at the burst level on the SVC, use the **atm forward-max-burst-size-clp1** map-class configuration command. The **no** form of this command restores the default value.

cell-count	Maximum number of low-priority cells going from the source router at the burst level. The default is –1.

atm forward-peak-cell-rate-clp0 *rate*
no atm forward-peak-cell-rate-clp0

To change the peak rate of high-priority cells going from the source router to the destination router on the SVC, use the **atm forward-peak-cell-rate-clp0** map-class configuration command. The **no** form of this command restores the default value.

rate	Maximum rate in kilobits per second (kbps) that this SVC can send high-priority cells from the source router. The default is –1. The maximum value is 155,000 kbps.

atm forward-peak-cell-rate-clp1 *rate*
no atm forward-peak-cell-rate-clp1

To change the peak rate of low-priority cells coming from the source router to the destination router on the SVC, use the **atm forward-peak-cell-rate-clp1** map-class configuration command. The **no** form of this command restores the default value.

rate	Maximum rate in kilobits per second (kbps) that this SVC can send low-priority cells from the source router. The default is –1. The maximum value is 155,000 kbps.

atm forward-sustainable-cell-rate-clp0 *rate*
no atm forward-sustainable-cell-rate-clp0

To change the sustainable rate of high-priority cells coming from the source router to the destination router on the SVC, use the **atm forward-sustainable-cell-rate-clp0** map-class configuration command. The **no** form of this command restores the default value.

rate	Sustainable rate in kilobits per second (kbps) that this SVC can send high-priority cells from the source router. The default is –1. The maximum value is 155,000 kbps.

atm forward-sustainable-cell-rate-clp1 *rate*
no atm forward-sustainable-cell-rate-clp1

To change the sustainable rate of low-priority cells coming from the source router to the destination router on the SVC, use the **atm forward-sustainable-cell-rate-clp1** map-class configuration command. The **no** form of this command restores the default value.

rate	Sustainable rate in kilobits per second (kbps) that this SVC can send low-priority cells from the source router. The default is –1. Maximum value is 155,000 kbps.

[**no**] **atm framing g832adm**

To specify E3 line framing, use the **atm framing** interface configuration command. To return to the default G.751 Physical Layer Convergence Protocol (PLCP) framing, use the **no** form of this command.

g832adm	Specifies G.832 ATM Direct Mapping.

atm idle-timeout *seconds*
no atm idle-timeout

To change the idle timer for SVCs on an interface that will cause the SVCs to disconnect when inactive for a specified interval, use the **atm idle-timeou**t interface configuration command. To return to the default setting, use the **no** form of this command.

seconds	Number of seconds the SVC can be inactive before disconnecting. Setting *seconds* to 0 disables idle timeouts. The default is 300 seconds.

[**no**] **atm ilmi-keepalive** [*seconds*]

To enable ILMI keepalives, use the **atm ilmi-keepalive** interface configuration command. To disable ILMI Keepalives, use the **no** form of this command.

seconds	Number of seconds between Keepalives. The default is 3 seconds. Values less than 3 seconds are rounded to 3 seconds, and there is no upper bound to the range of values.

atm maxvc *number*
no atm maxvc

To set the ceiling value of the virtual circuit descriptor (VCD) on the AIP card, use the **atm maxvc** interface configuration command. To restore the default value, use the **no** form of this command.

number	Maximum number of supported virtual circuits. Valid values are 256, 512, 1024, 2048, or 4096. The default is 2048.

atm mid-per-vc *maximum*

To limit the number of message identifier (MID) numbers allowed on each virtual circuit, use the **atm mid-per-vc** interface configuration command.

maximum	Number of MIDs allowed per virtual circuit on this interface. The values allowed are 16, 32, 64, 128, 256, 512, and 1024. The default is 16 MIDs per virtual circuit.

atm multicast *address*

To assign an SMDS E.164 multicast address to the ATM subinterface that supports AAL3/4 and SMDS encapsulation, use the **atm multicast** interface configuration command.

address	Multicast E.164 address assigned to the subinterface.

[**no**] **atm multipoint-interval** *interval*

To specify how often new destinations can be added to multipoint calls to an ATM switch in the network, use the **atm multipoint-interval** interface configuration command. To return to the default interval, use the **no** form of this command.

interval	Interval length in seconds, in the range between 0 and 4294967. The default is 30 seconds.

[**no**] **atm multipoint-signalling**

To enable point-to-multipoint signalling to the ATM switch, use the **atm multipoint-signalling** interface configuration command. To disable point-to-multipoint signalling to the ATM switch, use the **no** form of this command.

[**no**] *protocol protocol-address* **atm-nsap** *atm-nsap-address* [**class** *class-name*] [**broadcast**]

To define an ATM map statement for an SVC, use the **atm-nsap** map-list configuration command in conjunction with the **map-list** global configuration command. The **no** form of this command removes the address.

protocol	One of the following keywords: **appletalk**, **apollo**, **bridge**, **clns**, **decnet**, **ip**, **ipx**, **vines**, **xns**.
protocol-address	Destination address that is being mapped to this SVC.
atm-nsap-address	Destination ATM NSAP address. Must be exactly 40 hexadecimal digits long and in the correct dotted format.

class *class-name* (Optional) Name of a table that contains encapsulation-specific parameters. Such a table can be shared between maps that have the same encapsulation.

broadcast (Optional) Indicates this map entry is to be used when the corresponding *protocol* wants to send broadcast packets to the interface (for example, IGRP updates).

atm nsap-address *nsap-address*
no atm nsap-address

To set the NSAP address for an ATM interface using SVC mode, use the **atm nsap-address** interface configuration command. The **no** form of this command removes any configured address for the interface.

nsap-address 40-digit (hexadecimal) NSAP address of this interface (the source address).

[**no**] **atm pvc** *vcd vpi vci aal-encap* [[*midlow midhigh*] [*peak average burst*]] [**oam** *seconds*] [**inarp** *minutes*]

To create a permanent virtual circuit (PVC) on the AIP interface and, optionally, to generate OAM F5 loopback cells or enable Inverse ATM ARP, use the **atm pvc** interface configuration command. The **no** form of this command removes the specified PVC.

vcd Virtual circuit descriptor, in the range from 1 to the value set with the **atm maxvc** command.

vpi ATM network virtual path identifier (VPI) of this PVC, in the range from 0 through 255. The VPI value is unique only on a single link. The *vpi* value must match that of the switch. Both *vpi* and *vci* cannot be specified as 0; if one is 0, the other cannot be 0.

vci ATM network virtual channel identifier (VCI) of this PVC, in the range of 0 through 65535. The VCI value is unique only on a single link).

Both *vpi* and *vci* cannot be specified as 0; if one is 0, the other cannot be 0.

aal-encap ATM adaptation layer (AAL) and encapsulation type. When **aal5mux** is specified, a protocol is also required. Possible values are as follows:

- **aal34smds** (encapsulation for SMDS networks)
- **aal5nlpid** (encapsulation that allows ATM interfaces to interoperate with HSSI interfaces that are using an ADSU and running ATM-DXI)
- **aal5mux decnet** (a MUX-type virtual circuit)
- **aal5mux ip** (a MUX-type virtual circuit)
- **aal5mux novell** (a MUX-type virtual circuit)
- **aal5mux vines** (a MUX-type virtual circuit)
- **aal5mux xns** (a MUX-type virtual circuit)
- **aal5snap** (LLC/SNAP precedes the protocol datagram)
- **ilmi** (used to set up communication with the ILMI); the associated *vpi* and *vci* values are ordinarily 0 and 16, respectively.
- **qsaal** (a signaling-type PVC used for setting up or tearing down SVCs); the associated *vpi* and *vci* values are ordinarily 0 and 5, respectively.

midlow (Optional) Starting message identifier (MID) number for this PVC. The default is 0. If you set the *peak*, *average*, and *burst* values, you must also set the *midlow* and *midhigh* values.

midhigh (Optional) Ending MID number for this PVC. The default is 0. If you set the *peak*, *average*, and *burst* values, you must also set the *midlow* and *midhigh* values.

peak	(Optional) Maximum rate (in kbps) at which this virtual circuit can transmit, in the range from 1 to the maximum rate set for a rate queue. If you set this value, you must also specify a value for the *average*, *burst*, *midlow* and *midhigh* arguments.
average	(Optional) Average rate (in kbps) at which this virtual circuit will transmit, in the range from 1 to the maximum rate set for a rate queue. If you set this value, you must also specify a value for the *peak*, *burst*, *midlow* and *midhigh* arguments.
burst	(Optional) Value (in the range 1 through 2047) that relates to the maximum number of ATM cells the virtual circuit can transmit to the network at the *peak* rate of the PVC. The actual burst cells equals *burst* * 32 cells, thereby allowing for a burst size of 32 cells to 65504 cells. The largest practical value of *burst* is the MTU size of the AIP card. If you set this value, you must also specify a value for the *average*, *peak*, *midlow* and *midhigh* arguments.
oam *seconds*	(Optional) Specifies how often to generate an OAM F5 loopback cell from this virtual circuit. If omitted, OAM cells are not generated. The default value is 10 seconds.
inarp *minutes*	(Optional) Specifies how often Inverse ARP datagrams will be sent on this virtual circuit. If omitted, Inverse ARPs are not generated. The default value is 15 minutes.

atm rate-queue *queue-number speed*
no atm rate-queue

To create a permanent rate queue for the AIP, use the **atm rate-queue** interface configuration command. The **no** form of this command removes the rate queue.

queue-number	Queue number in the range 0 through 7.

speed Speed in Mbps in the range from 1 through 155. The maximum speed is determined by the detected PLIM type on the AIP:

- 34 Mbps for E3
- 45 Mbps for DS3 (when available)
- 100 Mbps for TAXI
- 155 Mbps for SONET

atm rawq-size *number*
no atm rawq-size

To define the AIP raw queue size, use the **atm rawq-size** interface configuration command. The **no** form of this command restores the default value.

number Maximum number of cells in the raw queue simultaneously, in the range 8 through 256. The default is 32.

atm rxbuff *number*
no atm rxbuff

To set the maximum number of Receive buffers for simultaneous packet reassembly, use the **atm rxbuff** interface configuration command. The **no** form of this command restores the default value.

number Maximum number of packet reassemblies that the AIP can perform simultaneously, in the range 0 through 512. The default is 256.

atmsig close atm *slot*/**0** *vcd*

To disconnect an SVC, use the **atmsig close** EXEC command.

slot	Slot number.
vcd	Virtual circuit descriptor of the signaling PVC to close.

atm smds-address *address*

To assign a unicast E.164 address to the ATM subinterface that supports AAL3/4 and SMDS encapsulation, use the **atm smds-address** interface configuration command.

address	Unicast E.164 address assigned to the subinterface.

[**no**] **atm sonet** [**sts-3c** | **stm-1**]

To set the proper mode of operation for the SONET PLIM, use the **atm sonet** interface configuration command. The **no** form of this command restores the default.

sts-3c	STS-3c access. This is the default.
stm-1	STM-1 access.

atm txbuff *number*
no atm txbuff

To set the maximum number of Transmit buffers for simultaneous packet fragmentation, use the **atm txbuff** interface configuration command. The **no** form of this command restores the default value.

number	Maximum number of packet fragmentations that the AIP can perform simultaneously, in the range 0 through 512. The default is 256.

[**no**] *protocol protocol-address* **atm-vc** *vcd* [**broadcast**]

To define an ATM map statement for a PVC, use the **atm-vc** map-list configuration command in conjunction with the **map-list** global configuration command. The **no** form of this command removes the address.

protocol	One of the following keywords: **appletalk**, **apollo**, **bridge**, **clns**, **decnet**, **ip**, **ipx, vines**, **xns**.
protocol-address	Destination address that is being mapped to this PVC.
vcd	Virtual circuit descriptor of the PVC.
broadcast	(Optional) Keyword that indicates this map entry is to be used when the corresponding *protocol* wants to send broadcast packets (such as IGRP updates) to the interface. Provides pseudo-broadcasting support.

atm vc-per-vp *number*
no atm vc-per-vp

To set the maximum number of VCIs to support per VPI, use the **atm vc-per-vp** interface configuration command. The **no** form of this command restores the default value.

number	Maximum number of VCIs to support per VPI. Valid values are 32, 64, 128, 256, 512, 1024, 2048, or 4096. The default is 1024.

atm vp-filter *hexvalue*
no atm vp-filter

To set the AIP filter register, use the **atm vp-filter** interface configuration command. The **no** form of this command restores the default value.

hexvalue	Value in hexadecimal format. The default is 0x7B.

[**no**] **ds3 scrambling**

To enable scrambling of the ATM cell payload for the DS-3 PLIM on the Cisco 7000, use the **ds3 scrambling** global configuration command. To disable scrambling of the ATM cell payload for the DS-3 PLIM, use the **no** form of this command.

dxi map *protocol protocol-address vpi vci* [**broadcast**]
no dxi map *protocol protocol-address*

To map a protocol address to a given VPI and VCI, use the **dxi map** interface configuration command. Use the **no** form of this command to remove the mapping for that protocol and protocol address.

protocol	The bridging or protocol keyword: **apollo**, **appletalk**, **bridge**, **clns**, **decnet**, **ip**, **novell**, **vines**, or **xns**.
protocol-address	Protocol-specific address.
vpi	Virtual path identifier in the range 0 to 15.
vci	Virtual circuit identifier in the range 0 to 63.
broadcast	(Optional) Broadcasts should be forwarded to this address.

[**no**] **dxi pvc** *vpi vci* [**snap** | **nlpid** | **mux**]

Use the **dxi pvc** interface configuration command to configure multiprotocol or single protocol ATM-DXI encapsulation. The **no** form of this command disables multiprotocol ATM-DXI encapsulation.

vpi	ATM network virtual path identifier (VPI) of this PVC, in the range from 0 through 255. The VPI value is unique only on a single interface. Both *vpi* and *vci* cannot be specified as 0; if one is 0, the other cannot be 0.

vci	ATM network virtual channel identifier (VCI) of this PVC, in the range of 0 through 65535. The VCI value is unique only on a single interface. Both *vpi* and *vci* cannot be specified as 0; if one is 0, the other cannot be 0.
snap	(Optional) LLC/SNAP encapsulation based on the protocol used in the packet. This keyword defines a PVC that can carry multiple network protocols. This is the default.
nlpid	(Optional) RFC 1294/1490 encapsulation. This option is provided for backward compatibility with the default encapsulation in earlier versions of the Cisco IOS.
mux	(Optional) MUX encapsulation; the carried protocol is defined by the **dxi map** command when the PVC is set up. This keyword defines a PVC that carries only one network protocol.

[**no**] **loopback** [**diagnostic | line**]

To place the ATM interface (AIP on the Cisco 7000 series or NPM on the Cisco 4500) into loopback mode, use the **loopback** interface configuration command. The **no** form of this command removes the loopback.

diagnostic	Place the interface into internal loopback mode.
line	Place the interface into external loopback mode. This is the default.

[**no**] **map-class** *encapsulation class-name*

To define quality of service (QOS) parameters that are associated with a static map for an SVC, use the **map-class** global configuration command. The **no** form of this command deletes this class.

encapsulation	Encapsulation type. One of the following: **atm**, **dialer**, **frame-relay**, **smds**, or **x25**.
class-name	User-assigned name of the QOS parameters table.

[**no**] **map-group** *name*

To associate an ATM map list to an interface or subinterface for either a PVC or SVC, use the **map-group** interface configuration command. The **no** form of this command removes the reference to the map list.

name	Name of the map list identified by a **map-list** command.

[**no**] **map-list** *name*

To define an ATM map statement for either a PVC or SVC, use the **map-list** global configuration command. The **no** form of this command deletes this list and all associated map statements.

name	Name of the map list.

show atm interface atm *slot/port* (Cisco 7000 series)
show atm interface atm *number* (Cisco 4500)

To display ATM-specific information about an interface, use the **show atm interface atm** privileged EXEC command.

slot/port	Slot number and port number of the AIP.
number	NPM number.

show atm map

To display the list of all configured ATM static maps to remote hosts on an ATM network, use the **show atm map** EXEC command.

show atm traffic

To display current, global ATM traffic information to and from all ATM networks connected to the router, use the **show atm traffic** EXEC command.

show atm vc [*vcd*]

To display all active ATM virtual circuits (PVCs and SVCs) and traffic information, use the **show atm vc** privileged EXEC command.

vcd	(Optional) Number of the virtual circuit to display information about.

show dxi map

To display all the protocol addresses mapped to a serial interface, use the **show dxi map** EXEC command.

show dxi pvc

To display the PVC statistics for a serial interface, use the **show dxi pvc** EXEC command.

show sscop

To show SSCOP details for all ATM interfaces, use the **show sscop** EXEC command.

sscop cc-timer *seconds*
no sscop cc-timer

To change the connection control timer, use the **sscop cc-timer** interface configuration command. The **no** form of this command restores the default value.

seconds	Number of seconds between BGN messages. The default is 10 seconds.

[**no**] **sscop keepalive-timer** *seconds*

To change the keepalive timer, use the **sscop keepalive-timer** interface configuration command. The **no** form of this command restores the default value.

seconds	Number of seconds the router waits between transmission of POLL PDUs when no SD or SDP PDUs are queued for transmission or are outstanding pending acknowledgments. The default is 30 seconds.

sscop max-cc *retries*
no sscop max-cc

To change the retry count of connection control, use the **sscop max-cc** interface configuration command. The **no** form of this command restores the default value.

retries	Number of times that SSCOP will retry to transmit BGN, END, or RS PDUs as long as an acknowledgment has not been received. Valid range is 1 to 6000. The default is 10 retries.

sscop poll-timer *seconds*
no sscop poll-timer

To change the poll timer, use the **sscop poll-timer** interface configuration command. The **no** form of this command restores the default value.

seconds	Number of seconds the router waits between transmissions of POLL PDUs. The default is 10 seconds.

sscop rcv-window *packets*
no sscop rcv-window

To change the receiver window, use the **sscop rcv-window** interface configuration command. The **no** form of this command restores the default value.

packets	Number of packets the interface can receive before it must send an acknowledgment to the ATM switch. Valid range is 1 to 6000. The default is 7 packets.

sscop send-window *packets*
no sscop send-window

To change the transmitter window, use the **sscop send-window** interface configuration command. The **no** form of this command restores the default value.

packets	Number of packets the interface can send before it must receive an acknowledgment from the ATM switch. Valid range is 1 to 6000. The default is 7 packets.