

clear appletalk arp



Note

Effective with Cisco IOS Release 15.0(1)M, the **clear appletalk arp** command is not available in Cisco IOS software.

To delete all entries or a specified entry from the AppleTalk Address Resolution Protocol (AARP) table, use the **clear appletalk arp** command in EXEC mode.

```
clear appletalk arp [network.node]
```

Syntax Description

<i>network.node</i>	(Optional) AppleTalk network address to be deleted from the AARP table. The argument <i>network</i> is the 16-bit network number in the range 0 to 65,279. The argument <i>node</i> is the 8-bit node number in the range 0 to 254. Both numbers are decimal.
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Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following example deletes all entries from the AARP table:

```
clear appletalk arp
```

Related Commands

Command	Description
show appletalk arp	Displays the entries in the ARP cache.

clear appletalk neighbor



Note

Effective with Cisco IOS Release 15.0(1)M, the **clear appletalk neighbor** command is not available in Cisco IOS software.

To delete all entries or a specified entry from the neighbor table, use the **clear appletalk neighbor** command in EXEC mode.

```
clear appletalk neighbor [neighbor-address]
```

Syntax Description

<i>neighbor-address</i>	(Optional) Network address of the neighboring router to be deleted from the neighbor table. The address is in the format <i>network.node</i> . The argument <i>network</i> is the 16-bit network number in the range 1 to 65,279. The argument <i>node</i> is the 8-bit node number in the range 0 to 254. Both numbers are decimal.
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Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

You cannot clear the entry for an active neighbor, that is, for a neighbor that still has RTMP connectivity.

Examples

The following example deletes the neighboring router 1.129 from the neighbor table:

```
clear appletalk neighbor 1.129
```

Related Commands

Command	Description
show appletalk neighbors	Displays information about the AppleTalk routers that are directly connected to any of the networks to which this router is directly connected.

clear appletalk route



Note

Effective with Cisco IOS Release 15.0(1)M, the **clear appletalk route** command is not available in Cisco IOS software.

To delete entries from the routing table, use the **clear appletalk route** command in EXEC mode.

```
clear appletalk route [network]
```

Syntax Description

network (Optional) Number of the network to which the route provides access.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following example deletes the route to network 1:

```
clear appletalk route 1
```

Related Commands

Command	Description
show appletalk route	Displays all entries or specified entries in the AppleTalk routing table.

clear appletalk traffic



Note

Effective with Cisco IOS Release 15.0(1)M, the **clear appletalk traffic** command is not available in Cisco IOS software.

To reset AppleTalk traffic counters, use the **clear appletalk traffic** command in EXEC mode.

clear appletalk traffic

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output after a **clear appletalk traffic** command was executed:

```
Router# clear appletalk traffic
Router# show appletalk traffic

AppleTalk statistics:
  Rcvd:  0 total, 0 checksum errors, 0 bad hop count
         0 local destination, 0 access denied
         0 for MacIP, 0 bad MacIP, 0 no client
         0 port disabled, 0 no listener
         0 ignored, 0 martians
  Bcast: 0 received, 0 sent
  Sent:  0 generated, 0 forwarded, 0 fast forwarded, 0 loopback
         0 forwarded from MacIP, 0 MacIP failures
         0 encapsulation failed, 0 no route, 0 no source
  DDP:   0 long, 0 short, 0 macip, 0 bad size
  NBP:   0 received, 0 invalid, 0 proxies
         0 replies sent, 0 forwards, 0 lookups, 0 failures
  RTMP:  0 received, 0 requests, 0 invalid, 0 ignored
         0 sent, 0 replies
  ATP:   0 received
  ZIP:   0 received, 0 sent, 0 netinfo
  Echo:  0 received, 0 discarded, 0 illegal
         0 generated, 0 replies sent
  Responder: 0 received, 0 illegal, 0 unknown

AppleTalk statistics:
  0 replies sent, 0 failures
  AARP:  0 requests, 0 replies, 0 probes
```

```
0 martians, 0 bad encapsulation, 0 unknown
0 sent, 0 failures, 0 delays, 0 drops
Lost: 0 no buffers
Unknown: 0 packets
Discarded: 0 wrong encapsulation, 0 bad SNAP discriminator
```

For explanation of the fields shown in the preceding example, see the **show appletalk traffic** command later in this chapter.

Related Commands

Command	Description
show appletalk macip-traffic	Displays statistics about MacIP traffic through the router.
show appletalk traffic	Displays statistics about AppleTalk traffic.

clear smrp mcache



Note

Effective with Cisco IOS Release 15.0(1)M, the **clear appletalk mcache** command is not available in Cisco IOS software.

To remove all fast-switching entries in the Sample Multicast Routing Protocol (SMRP) fast-switching cache table, use the **clear smrp mcache** command in EXEC mode.

clear smrp mcache

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.1	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

Use this command to clear the SMRP fast-switching cache table. The SMRP fast-switching cache table contains the information needed to fast switch SMRP data packets. It is usually unnecessary to clear the table; however, you can do so to repopulate it or to clear a corrupted entry.



Note

Using this command clears the table of all entries, not just a single entry.

Examples

The following example shows the fast-switching cache table before and after the **clear smrp mcache** command clears the table of entries:

```
Router# show smrp mcache
```

```
SMRP Multicast Fast Switching Cache
Group      In Parent      Child      MAC Header (Top)
Address    Use Interface  Interface(s) Network Header (Bottom)
-----
AT 11.121  Y   Ethernet0    Ethernet3  090007400b7900000c1740db
001fed750000002aff020a0a0a
AT 11.122  Y   Ethernet0    Ethernet3  090007400b7a00000c1740db
001f47750000002aff020a0a0a
AT 11.123  Y   Ethernet0    Ethernet1  090007400b7b00000c1740d9
```

```

                                Ethernet3      001fe77500000014ff020a0a0a
                                090007400b7b00000c1740db
AT 11.124      N      Ethernet0      Ethernet1      001ffd750000002aff020a0a0a
                                090007400b7c00000c1740d9
                                001fef7500000014ff020a0a0a

```

```
Router# clear smrp mcache
```

```
Router# show smrp mcache
```

```

SMRP Multicast Fast Switching Cache
Group      In Parent      Child      MAC Header (Top)
Address    Use Interface  Interface(s) Network Header (Bottom)
-----

```

Related Commands

Command	Description
show smrp mcache	Displays the SMRP fast-switching cache table.

show appletalk access-lists



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk access-lists** command is not available in Cisco IOS software.

To display the AppleTalk access lists currently defined, use the **show appletalk access-lists** command in EXEC mode.

```
show appletalk access-lists
```

Syntax Description

This command has no arguments or keywords.

Command Modes

User EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk access-lists** command:

```
Router> show appletalk access-lists

AppleTalk access list 601:
  permit zone ZoneA
  permit zone ZoneB
  deny additional-zones
  permit network 55
  permit network 500
  permit cable-range 900-950
  deny includes 970-990
  permit within 991-995
  deny other-access
```

[Table 9](#) describes fields shown in the display.

Table 9 *show appletalk access-lists Field Descriptions*

Field	Description
AppleTalk access list 601:	Number of the AppleTalk access lists.
permit zone deny zone	Indicates whether access to an AppleTalk zone has been explicitly permitted or denied with the access-list zone command.
permit additional-zones deny additional-zones	Indicates whether additional zones have been permitted or denied with the access-list additional-zones command.
permit network deny network	Indicates whether access to an AppleTalk network has been explicitly permitted or denied with the access-list network command.
permit cable-range deny cable-range	Indicates the cable ranges to which access has been permitted or denied with the access-list cable-range command.
permit includes deny includes	Indicates the cable ranges to which access has been permitted or denied with the access-list includes command.
permit within deny within	Indicates the additional cable ranges to which access has been permitted or denied with the access-list within command.
permit other-access deny other-access	Indicates whether additional networks or cable ranges have been permitted or denied with the access-list other-access command.

Related Commands

Command	Description
access-list additional-zones	Defines the default action to take for access checks that apply to zones.
access-list cable-range	Defines an AppleTalk access list for a cable range (for extended networks only).
access-list includes	Defines an AppleTalk access list that overlaps any part of a range of network numbers or cable ranges (for both extended and nonextended networks).
access-list nbp	Defines an AppleTalk access list entry for a particular NBP named entity, class of NBP named entities, NBP packet type, or NBP named entities belonging to a specific zone.
access-list network	Defines an AppleTalk access list for a single network number (that is, for a nonextended network).
access-list other-access	Defines the default action to take for subsequent access checks that apply to networks or cable ranges.
access-list other-nbps	Defines the default action to take for access checks that apply to NBP packets from named entities not otherwise explicitly denied or permitted.
access-list within	Defines an AppleTalk access list for an extended or a nonextended network whose network number or cable range is included entirely within the specified cable range.
access-list zone	Defines an AppleTalk access list that applies to a zone.
appletalk access-group	Assigns an access list to an interface.

Command	Description
appletalk distribute-list in	Filters routing updates received from other routers over a specified interface.
appletalk distribute-list out	Filters routing updates sent to other routers.
appletalk getzonelist-filter	Filters GZL replies.

show appletalk adjacent-routes



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk adjacent-routes** command is not available in Cisco IOS software.

To display routes to networks that are directly connected or that are one hop away, use the **show appletalk adjacent-routes** command in privileged EXEC mode.

show appletalk adjacent-routes

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(13)T	The E - EIGRP field was removed from command output.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk adjacent-routes** command provides a quick overview of the local environment that is especially useful when an AppleTalk internetwork consists of a large number of networks (typically, more than 600 networks).

You can use information provided by this command to determine if any local routes are missing or are misconfigured.

Examples

The following is sample output from the **show appletalk adjacent-routes** command:

```
Router# show appletalk adjacent-routes
```

```
Codes: R - RTMP derived, C - connected, S - static, P - proxy, 67 routes in internet
```

```
R Net 29-29 [1/G] via gatekeeper, 0 sec, Ethernet0, zone Engineering
C Net 2501-2501 directly connected, Ethernet1, no zone set
C Net 4160-4160 directly connected, Ethernet0, zone Low End SW Lab
C Net 4172-4172 directly connected, TokenRing0, zone Low End SW Lab
R Net 6160 [1/G] via urk, 0 sec, TokenRing0, zone Low End SW Lab
```

[Table 10](#) describes the fields shown in the display.

Table 10 *show appletalk adjacent-routes Field Descriptions*

Field	Description
Codes:	Codes defining source of route.
R - RTMP derived	Route derived from an RTMP update.
C - Connected	Directly connected network RTMP update.
S - Static	Static route.
P - Proxy	Proxy route.
67 routes in internet	Total number of known routes in the AppleTalk network.
Net 29-29	Cable range or network to which the route goes.
[1/G]	Hop count, followed by the state of the route. Possible values for state include the following: <ul style="list-style-type: none"> • G—Good (update has been received within the last 10 seconds) • S—Suspect (update has been received more than 10 seconds ago but less than 20 seconds ago) • B—Bad (update was received more than 20 seconds ago)
via	NBP registered name or address of the router that sent the routing information.
0 sec	Time, in seconds, since information about this network cable range was last received.
directly connected	Indicates that the network or cable range is directly connected to the router.
Ethernet0	Possible interface through which updates to this NBP registered name or address will be sent.
zone	Zone name assigned to the network or cable range sending this update.

show appletalk arp



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk arp** command is not available in Cisco IOS software.

To display the entries in the Address Resolution Protocol (ARP) cache, use the **show appletalk arp** command in privileged EXEC mode.

show appletalk arp

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

ARP establishes associates between network addresses and hardware (MAC) addresses. This information is maintained in the ARP cache.

Examples

The following is sample output from the **show appletalk arp** command:

```
Router# show appletalk arp
```

Address	Age (min)	Type	Hardware Addr	Encap	Interface
2000.1	-	Hardware	0000.0c04.1111	SNAP	Ethernet1
2000.2	0	Dynamic	0000.0c04.2222	SNAP	Ethernet1
2000.3	0	Dynamic	0000.0c04.3333	SNAP	Ethernet3
2000.4	-	Hardware	0000.0c04.4444	SNAP	Ethernet3

[Table 11](#) describes the fields shown in the display.

Table 11 *show appletalk arp Field Descriptions*

Field	Description
Address	AppleTalk network address of the interface.
Age (min)	Time, in minutes, that this entry has been in the ARP table. Entries are purged after they have been in the table for 240 minutes (4 hours). A hyphen indicates that this is a new entry.
Type	Indicates how the ARP table entry was learned. It can be one of the following: <ul style="list-style-type: none"> • Dynamic—Entry was learned via AARP. • Hardware—Entry was learned from an adapter in the router. • Pending—Entry for a destination for which the router does not yet know the address. When a packet requests to be sent to an address for which the router does not yet have the MAC-level address, the Cisco IOS software creates an AARP entry for that AppleTalk address, then sends an AARP Resolve packet to get the MAC-level address for that node. When the software gets the response, the entry is marked “Dynamic.” A pending AARP entry times out after 1 minute.
Hardware Addr	MAC address of this interface.
Encap	Encapsulation type. It can be one of the following: <ul style="list-style-type: none"> • ARPA—Ethernet-type encapsulation • Subnetwork Access Protocol (SNAP)—IEEE 802.3 encapsulation
Interface	Type and number of the interface.

show appletalk aurp events



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk aurp events** command is not available in Cisco IOS software.

To display the pending events in the AppleTalk Update-Based Routing Protocol (AURP) update-events queue, use the **show appletalk aurp events** command in privileged EXEC mode.

show appletalk aurp events

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk aurp events** command:

```
Router# show appletalk aurp events
```

```
100-100, NDC EVENT pending
17043-17043, ND EVENT pending
```

[Table 12](#) explains the fields shown in the display.

Table 12 *show appletalk aurp events Field Descriptions*

Field	Description
100-100	Network number or cable range.
NCD EVENT pending	Type of update event that is pending.

show appletalk aurp topology



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk aurp topology** command is not available in Cisco IOS software.

To display entries in the AppleTalk Update-Based Routing Protocol (AURP) private path database, which consists of all paths learned from exterior routers, use the **show appletalk aurp topology** command in privileged EXEC mode.

show appletalk aurp topology

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk aurp topology** command:

```
Router# show appletalk aurp topology
```

```
30
    via Tunnel0, 3 hops
80
    via Tunnel0, 3 hops
101-101
    via Tunnel0, 8 hops
102-102
    via Tunnel0, 8 hops
103-103
    via Tunnel0, 8 hops
104-104
    via Tunnel0, 8 hops
105-105
    via Tunnel0, 8 hops
108-108
    via Tunnel0, 8 hops
109-109
    via Tunnel0, 9 hops
120-120
    via Tunnel0, 10 hops
125-125
```



```
169-169      via Tunnel0, 8 hops
201-205      via Tunnel0, 7 hops
              via Tunnel0, 4 hops
```

Table 13 describes the fields shown in the display.

Table 13 *show appletalk aarp topology* Field Descriptions

Field	Description
30	AppleTalk network number or cable range.
via Tunnel0	Interface used to reach the network.
3 hops	Number of hops to the network.

show appletalk cache



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk cache** command is not available in Cisco IOS software.

To display the routes in the AppleTalk fast-switching table on an extended AppleTalk network, use the **show appletalk cache** command in EXEC mode.

```
show appletalk cache
```

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk cache** command displays information for all fast-switching route cache entries, regardless of whether they are valid.

Route entries are removed from the fast-switching cache if one of the following occurs:

- A route that was used has been deleted but has not yet been marked bad.
- A route that was used has gone bad.
- A route that was used has been replaced with a new route with a better metric.
- The state of route to a neighbor has changed from suspect to bad.
- The hardware address corresponding to a node address in the AARP cache has changed.
- The node address corresponding to a hardware address has changed.
- The ARP cache has been flushed.
- An ARP cache entry has been deleted.
- You have entered the **no appletalk routing** command, the **appletalk route-cache** command, or an **access-list** command.
- The encapsulation on the line has changed.
- An interface has become operational or nonoperational.

Examples

The following is sample output from the **show appletalk cache** command:

```
Router> show appletalk cache
```

```
AppleTalk Routing Cache, * = active entry, cache version is 227
Destination      Interface      MAC Header
*      29.0      Ethernet0      00000C00008200000C00D8DD
* 1544.000      Ethernet1      AA000400013400000C000E8C809B84BE02
*   33.000      Ethernet1      AA000400013400000C000E8C809B84BE02
```

The following is sample output from the **show appletalk cache** command when AppleTalk load balanced is enabled. The output displayed shows additional MAC headers for parallel paths (for example, 6099.52):

```
Router> show appletalk cache
```

```
Appletalk Routing cache, * = active entry, cache version is 11021
Destination      Interface      MAC Header
*      82.36      Ethernet1/4      00000CF366A600000C12C52D
 17043.208      Ethernet1/5      00000C367B4000000C12C52E
* 60099.52      Ethernet1/5      00000C367B4000000C12C52E
                  Ethernet1/2      00000C367B3D00000C12C52B
                  Ethernet1/3      00000C367B3E00000C12C52C
```

Table 14 describes the fields shown in the display.

Table 14 *show appletalk cache Field Descriptions*

Field	Description
*	Indicates the entry is valid.
cache version is	Version number of the AppleTalk fast-switching cache.
Destination	Destination network for this packet.
Interface	Router interface through which this packet is transmitted.
MAC Header	First bytes of this packet's MAC header.

Related Commands

Command	Description
appletalk maximum-paths	Defines the maximum number of equal-cost paths the router should use when balancing the traffic load.
appletalk route-cache	Enables fast switching on all supported interfaces.

show appletalk domain



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk domain** command is not available in Cisco IOS software.

To display all domain-related information, use the **show appletalk domain** command in EXEC mode.

```
show appletalk domain [domain-number]
```

Syntax Description

domain-number (Optional) Number of an AppleTalk domain about which to display information. It can be a decimal integer from 1 to 1,000,000.

Command Modes

EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If you omit the argument *domain-number*, the **show appletalk domain** command displays information about all domains.

Examples

The following is sample output from the **show appletalk domain** command:

```
Router# show appletalk domain

AppleTalk Domain Information:

Domain 1      Name : Xerxes
-----
State          : Active
Inbound remap range : 100-199
Outbound remap range : 200-299
Hop reduction   : OFF
Interfaces in domain :
    Ethernet1   : Enabled

Domain 2      Name : Desdemona
-----
State          : Active
Inbound remap range : 300-399
Outbound remap range : 400-499
Hop reduction   : OFF
```

```

Interfaces in domain :
    Ethernet3       : Enabled

```

The following is sample output from the **show appletalk domain** command when you specify a domain number:

```

Router# show appletalk domain 1

AppleTalk  Domain  Information:

Domain 1      Name : Xerxes
-----
State          : Active
Inbound remap range : 100-199
Outbound remap range : 200-299
Hop reduction   : OFF
Interfaces in domain :
    Ethernet1    : Enabled

```

Table 15 describes the fields shown in the displays.

Table 15 *show appletalk domain Field Descriptions*

Field	Description
Domain	Number of the domain as specified with the appletalk domain name global configuration command.
Name	Name of the domain as specified with the appletalk domain name global configuration command.
State	Status of the domain. It can be either Active or Nonactive.
Inbound remap range	Inbound mapping range as specified with the appletalk domain remap-range in global configuration command.
Outbound remap range	Outbound mapping range as specified with the appletalk domain remap-range out global configuration command.
Hop reduction	Indicates whether hop reduction has been enabled with the appletalk domain hop-reduction global configuration command. It can be either OFF or ON.
Interfaces in domain	Indicates which interfaces are in the domain as specified with the appletalk domain-group interface configuration command and whether they are enabled.

Related Commands

Command	Description
appletalk domain-group	Assigns a predefined domain number to an interface.
appletalk domain hop-reduction	Reduces the hop-count value in packets traveling between segments of a domain.
appletalk domain name	Creates a domain and assigns it a name and number.
appletalk domain remap-range	Remaps ranges of AppleTalk network numbers or cable ranges between two segments of a domain.

show appletalk eigrp interfaces



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk eigrp interfaces** command is not available in Cisco IOS software.

To display information about interfaces configured for Enhanced Interior Gateway Routing Protocol (EIGRP), use the **show appletalk eigrp interfaces** command in EXEC mode.

```
show appletalk eigrp interfaces [type number]
```

Syntax Description

<i>type</i>	(Optional) Interface type.
<i>number</i>	(Optional) Interface number.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

Use the **show appletalk eigrp interfaces** command to determine on which interfaces Enhanced IGRP is active and to find out information about Enhanced IGRP relating to those interfaces.

If an interface is specified, only that interface is displayed. Otherwise, all interfaces on which Enhanced IGRP is running are displayed.

Examples

The following is sample output from the **show appletalk eigrp interfaces** command:

```
Router> show appletalk eigrp interfaces
```

```
AT/EIGRP interfaces for process 1, router id 24096
```

Interface	Peers	Xmit Queue Un/Reliable	Mean SRTT	Pacing Time Un/Reliable	Multicast Flow Timer	Pending Routes
Di0	0	0/0	0	11/434	0	0
Et0	1	0/0	337	0/10	0	0
SE0:1.16	1	0/0	10	1/63	103	0
Tu0	1	0/0	330	0/16	0	0

Table 16 describes the fields shown in the display.

Table 16 *show appletalk eigrp interfaces Field Descriptions*

Field	Description
process 1	Autonomous system number of the process.
router id	Identification number of the router, as configured in the appletalk routing eigrp command.
Interface	Interface name.
Peers	Number of neighbors on the interface.
Xmit Queue	Count of unreliable and reliable packets queued for transmission.
Mean SRTT	Average round-trip time for all neighbors on the interface.
Pacing Time	Number of milliseconds to wait after transmitting unreliable and reliable packets.
Multicast Flow Timer	Number of milliseconds to wait for acknowledgment of a multicast packet by all neighbors before transmitting the next multicast packet.
Pending Routes	Number of routes still to be transmitted on this interface.

Related Commands

Command	Description
show appletalk eigrp neighbors	Displays the neighbors discovered by Enhanced IGRP.

show appletalk eigrp neighbors



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk eigrp neighbors** command is not available in Cisco IOS software.

To display the neighbors discovered by Enhanced Interior Gateway Routing Protocol (EIGRP), use the **show appletalk eigrp neighbors** command in EXEC mode.

```
show appletalk eigrp neighbors [interface]
```

Syntax Description

interface (Optional) Displays information about the specified neighbor router.

Command Modes

EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk eigrp neighbors** command lists only the neighbors running AppleTalk Enhanced IGRP. To list all neighboring AppleTalk routers, use the **show appletalk neighbors** command.

Examples

The following is sample output from the **show appletalk eigrp neighbors** command:

```
Router# show appletalk eigrp neighbors
```

```
AT/EIGRP Neighbors for process 1, router id 83
Address                Interface    Holdtime  Uptime    Q      Seq  SRTT  RTO
                    (secs)     (h:m:s)  Count    Num  (ms)  (ms)
warp.Ethernet1        Ethernet2    41        0:02:48   0      282  4     20
master.Ethernet2      Ethernet2    40        1:16:46   0      333  4     20
```

[Table 17](#) describes the fields shown in the display.

Table 17 *show appletalk eigrp neighbors Field Descriptions*

Field	Description
process 1	Number of the Enhanced IGRP routing process.
router id 83	Autonomous system number specified in the appletalk routing global configuration command.
Address	AppleTalk address of the AppleTalk Enhanced IGRP peer.
Interface	Interface on which the router is receiving hello packets from the peer.
Holdtime	Length of time, in seconds, that the Cisco IOS software will wait to hear from the peer before declaring it down. If the peer is using the default hold time, this number will be less than 15. If the peer configures a nondefault hold time, it will be reflected here.
Uptime	Elapsed time, in hours, minutes, and seconds, since the local router first heard from this neighbor.
Q Count	Number of AppleTalk Enhanced IGRP packets (update, query, and reply) that the Cisco IOS software is waiting to send.
Seq Num	Sequence number of the last update, query, or reply packet that was received from this neighbor.
SRTT	Smooth round-trip time. This is the number of milliseconds it takes for an AppleTalk Enhanced IGRP packet to be sent to this neighbor and for the local router to receive an acknowledgment of that packet.
RTO	Retransmission timeout, in milliseconds. This is the amount of time the Cisco IOS software waits before retransmitting a packet from the retransmission queue to a neighbor.

Related Commands

Command	Description
appletalk routing	Enables AppleTalk routing.
show appletalk neighbors	Displays information about the AppleTalk routers that are directly connected to any of the networks to which this router is directly connected.

show appletalk eigrp topology



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk eigrp topology** command is not available in Cisco IOS software.

To display the AppleTalk Enhanced Interior Gateway Routing Protocol (EIGRP) topology table, use the **show appletalk eigrp topology** command in EXEC mode.

show appletalk eigrp topology [*network-number* | **active** | **zero-successors**]

Syntax Description

<i>network-number</i>	(Optional) Number of the AppleTalk network whose topology table entry you want to display.
active	(Optional) Displays the entries for all active routes.
zero-successors	(Optional) Displays the entries for destinations for which no successors exist. These entries are destinations that the Cisco IOS software currently does not know how to reach via Enhanced IGRP. This option is useful for debugging network problems.

Command Modes

EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

All Enhanced IGRP routes that are received for a destination, regardless of metric, are placed in the topology table. The route to a destination that is currently in use is the first route listed. Routes that are listed as “connected” take precedence over any routes learned from any other source.

Examples

The following is sample output from the **show appletalk eigrp topology** command:

```
Router# show appletalk eigrp topology

IPX EIGRP Topology Table for process 1, router id 1

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status
```

```

P 3165-0, 1 successors, FD is 0
    via Redistributed (25601/0),
    via 100.1 (2198016/2195456), Fddi0
    via 4080.67 (2198016/53760), Serial4
P 3161-0, 1 successors, FD is 307200
    via Redistributed (1025850/0),
    via 100.1 (2198016/2195456), Fddi0
    via 4080.67 (2198016/1028410), Serial4
P 100-100, 1 successors, FD is 0
    via Connected, Fddi0
    via 4080.67 (2198016/28160), Serial4
P 4080-4080, 1 successors, FD is 0
    via Connected, Serial4
    via 100.1 (2172416/2169856), Fddi0

```

Table 18 describes the fields that may be displayed in the output.

Table 18 *show appletalk eigrp topology Field Descriptions*

Field	Description
Codes:	State of this topology table entry. Passive and Active refer to the Enhanced IGRP state with respect to this destination; and Update, Query, and Reply refer to the type of packet that is being sent.
P – Passive	No Enhanced IGRP computations are being performed for this destination.
A – Active	Enhanced IGRP computations are being performed for this destination.
U – Update	Indicates that an update packet was sent to this destination.
Q – Query	Indicates that a query packet was sent to this destination.
R – Reply	Indicates that a reply packet was sent to this destination.
r – Reply status	Flag that is set after the Cisco IOS software has sent a query and is waiting for a reply.
3165, 3161, and so on	Destination AppleTalk network number.
successors	Number of successors. This number corresponds to the number of next hops in the AppleTalk routing table.
FD	Feasible distance. This value is used in the feasibility condition check. If the neighbor's reported distance (the metric after the slash) is less than the feasible distance, the feasibility condition is met and that path is a feasible successor. Once the software determines it has a feasible successor, it does not have to send a query for that destination.
replies	Number of replies that are still outstanding (have not been received) with respect to this destination. This information appears only when the destination is in the Active state.
state	Exact Enhanced IGRP state that this destination is in. It can be the number 0, 1, 2, or 3. This information appears only when the destination is Active.
via	AppleTalk address of the peer who told the software about this destination. The first <i>n</i> of these entries, where <i>n</i> is the number of successors, are the current successors. The remaining entries on the list are feasible successors.

Table 18 show appletalk eigrp topology Field Descriptions (continued)

Field	Description
(345088/319488)	The first number is the Enhanced IGRP metric that represents the cost to the destination, The second number is the Enhanced IGRP metric that this peer advertised to us.
Ethernet0	Interface from which this information was learned.

The following is sample output from the **show appletalk eigrp topology** command when you specify an AppleTalk network number:

```
Router# show appletalk eigrp topology 3165

AT-EIGRP topology entry for 3165-0
State is Passive, Query origin flag is 1, 1 Successor(s)
Routing Descriptor Blocks:
0.0, from 0.0
  Composite metric is (25601/0), Send flag is 0x0, Route is Internal
  Vector metric:
    Minimum bandwidth is 2560000000 Kbit
    Total delay is 1000000 nanoseconds
    Reliability is 255/255
    Load is 1/255
    Minimum MTU is 1500
    Hop count is 0
100.1 (Fddi0), from 100.1
  Composite metric is (2198016/2195456), Send flag is 0x0, Route is External
  Vector metric:
    Minimum bandwidth is 1544 Kbit
    Total delay is 21100000 nanoseconds
    Reliability is 255/255
    Load is 1/255
    Minimum MTU is 1500
    Hop count is 2
4080.83 (Serial4), from 4080.83
  Composite metric is (2198016/53760), Send flag is 0x0, Route is Internal
  Vector metric:
    Minimum bandwidth is 1544 Kbit
    Total delay is 21100000 nanoseconds
    Reliability is 255/255
    Load is 1/255
    Minimum MTU is 1500
    Hop count is 2
```

Table 19 describes the fields that may appear in the output.

Table 19 show appletalk eigrp topology Field Descriptions—Specified Network

Field	Description
3165	AppleTalk network number of the destination.
State is ...	State of this entry. It can be either Passive or Active. Passive means that no Enhanced IGRP computations are being performed for this destination, and Active means that they are being performed.
Query origin flag	Exact Enhanced IGRP state that this destination is in. It can be the number 0, 1, 2, or 3. This information appears only when the destination is Active.

Table 19 *show appletalk eigrp topology Field Descriptions—Specified Network (continued)*

Field	Description
Successors	Number of successors. This number corresponds to the number of next hops in the IPX routing table.
Next hop is ...	Indicates how this destination was learned. It can be one of the following: <ul style="list-style-type: none"> • Connected—The destination is on a network directly connected to this router. • Redistributed—The destination was learned via RTMP or another routing protocol. • AppleTalk host address—The destination was learned from that peer via this Enhanced IGRP process.
Ethernet0	Interface from which this information was learned.
from	Peer from whom the information was learned. For connected and redistributed routers, this is 0.0. For information learned via Enhanced IGRP, this is the peer's address. Currently, for information learned via Enhanced IGRP, the peer's AppleTalk address always matches the address in the "Next hop is" field.
Composite metric is	Enhanced IGRP composite metric. The first number is this device's metric to the destination, and the second is the peer's metric to the destination.
Send flag	Numeric representation of the "flags" field. It is 0 when nothing is being sent, 1 when an Update is being sent, 3 when a Query is being sent, and 4 when a Reply is being sent. Currently, 2 is not used.
Route is ...	Type of router. It can be either internal or external. Internal routes are those that originated in an Enhanced IGRP autonomous system, and external routes are those that did not. Routes learned via RTMP are always external.
Vector metric:	This section describes the components of the Enhanced IGRP metric.
Minimum bandwidth	Minimum bandwidth of the network used to reach the next hop.
Total delay	Delay time to reach the next hop.
Reliability	Reliability value used to reach the next hop.
Load	Load value used to reach the next hop.
Minimum MTU	Smallest Maximum Transmission Unit (MTU) size of the network used to reach the next hop.
Hop count	Number of hops to the next hop.
External data	This section describes the original protocol from which this route was redistributed. It appears only for external routes.
Originating router	Network address of the router that first distributed this route into AppleTalk Enhanced IGRP.
External protocol metric delay	External protocol from which this route was learned. The metric will match the external hop count displayed by the show appletalk route command for this destination. The delay is the external delay.

Table 19 *show appletalk eigrp topology Field Descriptions—Specified Network (continued)*

Field	Description
Administrator tag	Currently not used.
Flag	Currently not used.

Related Commands

Command	Description
show appletalk route	Displays all entries or specified entries in the AppleTalk routing table.

show appletalk globals



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk globals** command is not available in Cisco IOS software.

To display information and settings about the AppleTalk internetwork and other parameters, use the **show appletalk globals** command in EXEC mode.

show appletalk globals

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk globals** command:

```
Router# show appletalk globals
```

```
AppleTalk global information:
```

```
The router is a domain router.
Internet is compatible with older, AT Phase1, routers.
There are 67 routes in the internet.
There are 25 zones defined.
All significant events will be logged.
ZIP resends queries every 10 seconds.
RTMP updates are sent every 10 seconds with a jitter.
RTMP entries are considered BAD after 20 seconds.
RTMP entries are discarded after 60 seconds.
AARP probe retransmit count: 10, interval: 200.
AARP request retransmit count: 5, interval: 1000.
DDP datagrams will be checksummed.
RTMP datagrams will be strictly checked.
RTMP routes may not be propagated without zones.
Alternate node address format will not be displayed.
```

[Table 20](#) describes the fields shown in the display.

Table 20 *show appletalk globals Field Descriptions*

Field	Description
AppleTalk global information:	Heading for the command output.
The router is a domain router.	Indicates whether this router is a domain router.
Internet is compatible with older, AT Phase1, routers.	Indicates whether the AppleTalk internetwork meets the criteria for interoperation with Phase 1 routers.
There are 67 routes in the internet.	Total number of routes in the AppleTalk internetwork from which this router has heard in routing updates.
There are 25 zones defined.	Total number of valid zones in the current AppleTalk internetwork configuration.
All significant events will be logged.	Indicates whether the router has been configured with the appletalk event-logging command.
ZIP resends queries every 10 seconds.	Interval, in seconds, at which zone name queries are retried.
RTMP updates are sent every 10 seconds.	Interval, in seconds, at which the Cisco IOS software sends routing updates.
RTMP entries are considered BAD after 20 seconds.	Time after which routes for which the software has not received an update will be marked as candidates for being deleted from the routing table.
RTMP entries are discarded after 60 seconds.	Time after which routes for which the software has not received an update will be deleted from the routing table.
AARP probe retransmit count: 10, interval: 200.	Number of AARP probe retransmissions that will be done before abandoning address negotiations and instead using the selected AppleTalk address, followed by the time, in milliseconds, between retransmission of ARP probe packets. You set these values with the appletalk arp retransmit-count and appletalk arp interval commands, respectively.
AARP request retransmit count: 5, interval: 1000.	Number of AARP request retransmissions that will be done before abandoning address negotiations and using the selected AppleTalk address, followed by the time, in milliseconds, between retransmission of ARP request packets. You set these values with the appletalk arp retransmit-count and appletalk arp interval commands, respectively.
DDP datagrams will be checksummed.	Indicates whether the appletalk checksum configuration command is enabled. When enabled, the software discards DDP packets when the checksum is incorrect and when the router is the final destination for the packet.
RTMP datagrams will be strictly checked.	Indicates whether the appletalk strict-rtmp-checking configuration command is enabled. When enabled, RTMP packets arriving from routers that are not directly connected to the router performing the check are discarded.

Table 20 *show appletalk globals Field Descriptions (continued)*

Field	Description
RTMP routes may not be propagated without zones.	Indicates whether the appletalk require-route-zones configuration command is enabled. When enabled, the Cisco IOS software does not advertise a route to its neighboring routers until it has obtained a network/zone association for that route.
Alternate node address format will not be displayed.	Indicates whether AppleTalk addresses will be printed in numeric or name form. You configure this with the appletalk lookup-type and appletalk name-lookup-interval commands.

Related Commands

Command	Description
appletalk arp interval	Specifies the time interval between retransmissions of ARP packets.
appletalk arp retransmit-count	Specifies the number of ARP probe or request transmissions.
appletalk checksum	Enables the generation and verification of checksums for all AppleTalk packets (except routed packets).
appletalk event-logging	Logs significant network events.
appletalk lookup-type	Specifies which NBP service types are retained in the name cache.
appletalk name-lookup-interval	Sets the interval between service pollings by the router on its AppleTalk interfaces.
appletalk require-route-zones	Prevents the advertisement of routes (network numbers or cable ranges) that have no assigned zone.
appletalk strict-rtmp-checking	Performs maximum checking of routing updates to ensure their validity.

show appletalk interface



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk interfaces** command is not available in Cisco IOS software.

To display the status of the AppleTalk interfaces configured in the Cisco IOS software and the parameters configured on each interface, use the **show appletalk interface** command in privileged EXEC mode.

```
show appletalk interface [brief] [type number]
```

Syntax Description

brief	(Optional) Displays a brief summary of the status of the AppleTalk interfaces.
<i>type</i>	(Optional) Interface type. It can be one of the following types: asynchronous, dialer, Ethernet (IEEE 802.3), Token Ring (IEEE 802.5), FDDI, High-Speed Serial Interface (HSSI), Virtual Interface, ISDN Basic Rate Interface (BRI), ATM interface, loopback, null, or serial.
<i>number</i>	(Optional) Interface number.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk interface** is particularly useful when you first enable AppleTalk on a router interface.

Examples

The following is sample output from the **show appletalk interface** command for an extended AppleTalk network:

```
Router# show appletalk interface fddi 0

Fddi0 is up, line protocol is up
  AppleTalk cable range is 4199-4199
  AppleTalk address is 4199.82, Valid
  AppleTalk zone is "Low End SW Lab"
  AppleTalk address gleaning is disabled
  AppleTalk route cache is enabled
```

Interface will not perform pre-FDDITalk compatibility

Table 21 describes the fields shown in the display as well as some fields not shown but that also may be displayed. Note that this command can show a node name in addition to the address, depending on how the software has been configured with the **appletalk lookup-type** and **appletalk name-lookup-interval** commands.

Table 21 *show appletalk interface Field Descriptions—Extended Network*

Field	Description
FDDI is ...	Type of interface and whether it is currently active and inserted into the network (up) or inactive and not inserted (down).
line protocol	Indicates whether the software processes that handle the line protocol believe the interface is usable (that is, whether <i>keepalives</i> are successful).
AppleTalk node	Indicates whether the node is up or down in the network.
AppleTalk cable range	Cable range of the interface.
AppleTalk address is ..., Valid	Address of the interface, and whether the address conflicts with any other address on the network (“Valid” means it does not).
AppleTalk zone	Name of the zone that this interface is in.
AppleTalk port configuration verified ...	When our access server implementation comes up on an interface, if there are other routers detected and the interface we are bringing up is not in discovery mode, our access server “confirms” our configuration with the routers that are already on the cable. The address printed in this field is that of the router with which the local router has verified that the interface configuration matches that on the running network.
AppleTalk discarded...packets due to input errors	Number of packets the interface discarded because of input errors. These errors are usually incorrect encapsulations (that is, the packet has a malformed header format).
AppleTalk address gleaning	Indicates whether the interface is automatically deriving ARP table entries from incoming packets (referred to as <i>gleaning</i>).
AppleTalk route cache	Indicates whether fast switching is enabled on the interface.
Interface will ...	Indicates that the AppleTalk interface will check to see if AppleTalk packets sent on the FDDI ring from routers running Cisco software releases prior to Release 9.0(3) or 9.1(2) are recognized.
AppleTalk domain	AppleTalk domain of which this interface is a member.

The following is sample output from the **show appletalk interface** command for a nonextended AppleTalk network:

```
Router# show appletalk interface ethernet 1

Ethernet 1 is up, line protocol is up
  AppleTalk address is 666.128, Valid
  AppleTalk zone is Underworld
  AppleTalk routing protocols enabled are RTMP
```

show appletalk interface

```
AppleTalk address gleaning is enabled
AppleTalk route cache is not initialized
```

Table 22 describes the fields shown in the display.

Table 22 *show appletalk interface Field Descriptions—Nonextended Network*

Field	Description
Ethernet 1	Type of interface and whether it is currently active and inserted into the network (up) or inactive and not inserted (down).
line protocol	Indicates whether the software processes that handle the line protocol believe the interface is usable (that is, whether <i>keepalives</i> are successful).
AppleTalk address is ..., Valid	Address of the interface, and whether the address conflicts with any other address on the network (“Valid” means it does not).
AppleTalk zone	Name of the zone that this interface is in.
AppleTalk routing protocols enabled	AppleTalk routing protocols that are enabled on the interface.
AppleTalk address gleaning	Indicates whether the interface is automatically deriving ARP table entries from incoming packets (referred to as <i>gleaning</i>).
AppleTalk route cache	Indicates whether fast switching is enabled on the interface.

The following is sample output from the **show appletalk interface brief** command:

```
Router# show appletalk interface brief
```

```
Interface  Address      Config      Status/Line Protocol  Atalk Protocol
TokenRing0  108.36      Extended   up                    down
TokenRing1  unassigned  not config'd  administratively down  n/a
Ethernet0    10.82       Extended   up                    up
Serial0      unassigned  not config'd  administratively down  n/a
Ethernet1    30.83       Extended   up                    up
Serial1      unassigned  not config'd  administratively down  n/a
Serial2      unassigned  not config'd  administratively down  n/a
Serial3      unassigned  not config'd  administratively down  n/a
Serial4      unassigned  not config'd  administratively down  n/a
Serial5      unassigned  not config'd  administratively down  n/a
Fddi0       50001.82    Extended   administratively down  down
Ethernet2    unassigned  not config'd  up                    n/a
Ethernet3    9993.137    Extended   up                    up
Ethernet4    40.82       Non-Extended up                    up
Ethernet5    unassigned  not config'd  administratively down  n/a
Ethernet6    unassigned  not config'd  administratively down  n/a
Ethernet7    unassigned  not config'd  administratively down  n/a
```

Table 23 describes the fields shown in the display.

Table 23 *show appletalk interface brief Field Descriptions*

Field	Description
Interface	Interface type and number.
Address	Address assigned to the interface.

Table 23 *show appletalk interface brief Field Descriptions (continued)*

Field	Description
Config	How the interface is configured. Possible values are extended, nonextended, and not configured.
Status/Line Protocol	Whether the software processes that handle the line protocol believe the interface is usable (that is, whether <i>keepalives</i> are successful).
Atalk Protocol	Whether AppleTalk routing is up and running on the interface.

The following sample output displays the **show appletalk interface** command when AppleTalk RTMP stub mode is enabled. The last line of the output notes that this mode is turned on.

```
Router# show appletalk interface ethernet 2
```

```
Ethernet2 is up, line protocol is up
  AppleTalk cable range is 30-30
  AppleTalk address is 30.1, Valid
  AppleTalk zone is "Zone30-30"
  AppleTalk address gleaning is disabled
  AppleTalk route cache is enabled
  AppleTalk RTMP stub mode is enabled
```

Related Commands

Command	Description
appletalk access-group	Assigns an access list to an interface.
appletalk address	Enables nonextended AppleTalk routing on an interface.
appletalk cable-range	Enables an extended AppleTalk network.
appletalk client-mode	Allows users to access an AppleTalk zone when dialing into an asynchronous line (on Cisco routers, only via the auxiliary port).
appletalk discovery	Places an interface into discovery mode.
appletalk distribute-list in	Filters routing updates received from other routers over a specified interface.
appletalk distribute-list out	Filters routing updates sent to other routers.
appletalk free-trade-zone	Establishes a free-trade zone.
appletalk getzonelist-filter	Filters GZL replies.
appletalk glean-packets	Derives ARP table entries from incoming packets.
appletalk pre-fdditalk	Enables the recognition of pre-FDDI Talk packets.
appletalk protocol	Specifies the routing protocol to use on an interface.
appletalk route-cache	Enables fast switching on all supported interfaces.
appletalk rtmp-stub	Enables AppleTalk RTMP stub mode.
appletalk send-rtmps	Allows the Cisco IOS software to send routing updates to its neighbors.
appletalk zip-reply-filter	Configures a ZIP reply filter.
appletalk zone	Sets the zone name for the connected AppleTalk network.

show appletalk macip-clients



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk macip-clients** command is not available in Cisco IOS software.

To display status information about all known MacIP clients, use the **show appletalk macip-clients** command in EXEC mode.

```
show appletalk macip-clients
```

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk macip-clients** command:

```
Router# show appletalk macip-clients
172.31.199.1@[27001n,69a,72s] 45 secs 'S/W Test Lab'
```

[Table 24](#) describes the fields shown in the display.

Table 24 *show appletalk macip-clients Field Descriptions*

Field	Description
172.31.199.1@	Client IP address.
[27001n,69a,72s]	DDP address of the registered entity, showing the network number, node address, and socket number.
45 secs	Time (in seconds) since the last NBP confirmation was received.
'S/W Test Lab'	Name of the zone to which the MacIP client is attached.

Related Commands

Command	Description
show appletalk traffic	Displays statistics about AppleTalk traffic.

show appletalk macip-servers



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk macip-servers** command is not available in Cisco IOS software.

To display status information about related servers, use the **show appletalk macip-servers** command in EXEC mode.

show appletalk macip-servers

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The information in the **show appletalk macip-servers** display can help you quickly determine the status of your MacIP configuration. In particular, the STATE field can help identify problems in your AppleTalk environment.

Examples

The following is sample output from the **show appletalk macip-servers** command:

```
Router# show appletalk macip-servers
```

```
MACIP SERVER 1, IP 172.18.199.221, ZONE 'S/W Test Lab' STATE is server_up
Resource #1 DYNAMIC 172.18.199.1-172.18.199.10, 1/10 IP in use
Resource #2 STATIC 172.18.199.11-172.18.199.20, 0/10 IP in use
```

[Table 25](#) describes the fields shown in the display.

Table 25 *show appletalk macip-servers Field Descriptions*

Field	Description
MACIP SERVER 1	Number of the MacIP server. This number is assigned arbitrarily.
IP 172.18.199.221	IP address of the MacIP server.

Table 25 *show appletalk macip-servers Field Descriptions (continued)*

Field	Description
ZONE 'S/W Test Lab'	AppleTalk server zone specified with the appletalk macip server command.
STATE is server_up	State of the server. Table 27 lists the possible states. If the server remains in the “resource_wait” state, check that resources have been assigned to this server with either the appletalk macip dynamic or the appletalk macip static command.
Resource #1 DYNAMIC 172.18.199.1-172.18.199.10, 1/10 IP in use	Resource specifications defined in the appletalk macip dynamic and appletalk macip static commands. This list indicates whether the resource address was assigned dynamically or statically, identifies the IP address range associated with the resource specification, and indicates the number of active MacIP clients.

Use the **show appletalk macip-servers** command with **show appletalk interface** to identify AppleTalk network problems, as follows:

-
- Step 1** Determine the state of the MacIP server using **show appletalk macip-servers**. If the STATE field continues to indicate an anomalous status (something other than “server_up,” such as “resource_wait” or “zone_wait”), there is a problem.
- Step 2** Determine the status of AppleTalk routing and the specific interface using the **show appletalk interface** command.
- Step 3** If the protocol and interface are up, check the MacIP configuration commands for inconsistencies in the IP address and zone.
-

The STATE field of the **show appletalk macip-servers** command indicates the current state of each configured MacIP server. Each server operates according to the finite-state machine table described in [Table 26](#). [Table 27](#) describes the state functions listed in [Table 26](#). These are the states that are displayed by the **show appletalk macip-servers** command.

Table 26 *MacIP Finite-State Machine Table*

State	Event	New State	Notes
initial	ADD_SERVER	resource_wait	Server configured
resource_wait	TIMEOUT	resource_wait	Wait for resources
resource_wait	ADD_RESOURCE	zone_wait	Wait for zone seeding
zone_wait	ZONE_SEEDED	server_start	Register server
zone_wait	TIMEOUT	zone_wait	Wait until seeded
server_start	START_OK	reg_wait	Wait for server register
server_start	START_FAIL	del_server	Could not start (possible configuration error)
reg_wait	REG_OK	server_up	Registration successful

Table 26 *MacIP Finite-State Machine Table (continued)*

State	Event	New State	Notes
reg_wait	REG_FAIL	del_server	Registration failed (possible duplicate IP address)
reg_wait	TIMEOUT	reg_wait	Wait until register
server_up	TIMEOUT	send_confirms	NBP confirm all clients
send_confirms	CONFIRM_OK	server_up	
send_confirms	ZONE_DOWN	zone_wait	Zone or IP interface down; restart
*	ADD_RESOURCE	*	Ignore, except resource_wait
*	DEL_SERVER	del_server	"No server" statement (HALT)
*	DEL_RESOURCE	ck_resource	Ignore
ck_resource	YES_RESOURCES	*	Return to previous state
ck_resource	NO_RESOURCES	resource_wait	Shut down and wait for resources

Table 27 *Server States*

State	Description
ck_resource	The server verifies that at least one client range is available. If not, it deregisters NBP names and returns to the resource_wait state.
del_server	State at which all servers end. In this state, the server deregisters all NBP names, purges all clients, and deallocates server resources.
initial	The state at which all servers start.
resource-wait	The server waits until a client range for the server has been configured.
send_confirms	The server tickles active clients every minute, deletes clients that have not responded within the last 5 minutes, and checks IP and AppleTalk interfaces used by MacIP server. If the interfaces are down or have been reconfigured, the server restarts.
server_start	The server registers configured IPADDRESS and registers as IPGATEWAY. It then opens an ATP socket to listen for IP address assignment requests, sends NBP lookup requests for existing IPADDRESSes, and automatically adds clients with addresses within one of the configured client ranges.
server_up	The server has registered. Being in this state enables routing to client ranges. The server now responds to IP address assignment requests.

Table 27 Server States (continued)

State	Description
zone_wait	The server waits until the configured AppleTalk zone name for the server is up. The server will remain in this state if no such zone has been configured or if AppleTalk routing is not enabled.
*	An asterisk in the first column represents any state. An asterisk in the second column represents a return to the previous state.

Related Commands

Command	Description
appletalk macip dynamic	Allocates IP addresses to dynamic MacIP clients.
appletalk macip server	Establishes a MacIP server for a zone.
appletalk macip static	Allocates an IP address to be used by a MacIP client that has reserved a static IP address.
show appletalk interface	Displays the status of the AppleTalk interfaces configured in the Cisco IOS software and the parameters configured on each interface.
show appletalk traffic	Displays statistics about AppleTalk traffic.

show appletalk macip-traffic



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk macip-traffic** command is not available in Cisco IOS software.

To display statistics about MacIP traffic through the router, use the **show appletalk macip-traffic** command in privileged EXEC mode.

show appletalk macip-traffic

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

Use the **show appletalk macip-traffic** command to obtain a detailed breakdown of MacIP traffic that is sent through a router from an AppleTalk to an IP network. The output from this command differs from that of the **show appletalk traffic** command, which shows normal AppleTalk traffic generated, received, or routed by the router.

Examples

The following is sample output from the **show appletalk macip-traffic** command:

```
Router# show appletalk macip-traffic
```

```
-- MACIP Statistics
      MACIP_DDP_IN:      11062
      MACIP_DDP_IP_OUT:  10984
MACIP_DDP_NO_CLIENT_SERVICE:  78
      MACIP_IP_IN:      7619
      MACIP_IP_DDP_OUT: 7619
      MACIP_SERVER_IN:  62
      MACIP_SERVER_OUT: 52
      MACIP_SERVER_BAD_ATP: 10
      MACIP_SERVER_ASSIGN_IN: 26
      MACIP_SERVER_ASSIGN_OUT: 26
      MACIP_SERVER_INFO_IN: 26
      MACIP_SERVER_INFO_OUT: 26
```

Table 28 describes the fields shown in the display.

Table 28 *show appletalk macip-traffic Field Descriptions*

Field	Description
MACIP_DDP_IN	Number of DDP packets received.
MACIP_DDP_IP_OUT	Number of DDP packets received that were sent to the IP network.
MACIP_DDP_NO_CLIENT_SERVICE	Number of DDP packets received for which there is no client.
MACIP_IP_IN	Number of IP packets received.
MACIP_IP_DDP_OUT	Number of IP packets received that were sent to the AppleTalk network.
MACIP_SERVER_IN	Number of packets destined for MacIP servers.
MACIP_SERVER_OUT	Number of packets sent by MacIP servers.
MACIP_SERVER_BAD_ATP	Number of MacIP allocation requests received with a bad request.
MACIP_SERVER_ASSIGN_IN	Number of MacIP allocation requests received asking for an IP address.
MACIP_SERVER_ASSIGN_OUT	Number of IP addresses assigned.
MACIP_SERVER_INFO_IN	Number of MacIP packets received requesting server information.
MACIP_SERVER_INFO_OUT	Number of server information requests answered.

Related Commands

Command	Description
show appletalk traffic	Displays statistics about AppleTalk traffic.

show appletalk name-cache



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk name-cache** command is not available in Cisco IOS software.

To display a list of Name Binding Protocol (NBP) services offered by nearby routers and other devices that support NBP, use the **show appletalk name-cache** command in privileged EXEC mode.

show appletalk name-cache

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk name-cache** command displays the information currently in the NBP name cache. Support for names allows you to easily identify and determine the status of any associated device. This can be important in AppleTalk internetworks where node numbers are dynamically generated.

You can authorize the **show appletalk name-cache** command to display any AppleTalk services of interest in local zones. This contrasts with the **show appletalk nbp** command, which you use to display services registered by routers.

Examples

The following is sample output from the **show appletalk name-cache** command:

```
Router# show appletalk name-cache
```

```
AppleTalk Name Cache:
Net      Adr  Skt  Name                Type              Zone
4160    19   8    gatekeeper          SNMP Agent        Underworld
4160    19  254  gatekeeper.Ether4  ciscoRouter       Underworld
4160    86   8    bones               SNMP Agent        Underworld
4160    86  72   131.108.160.78     IPADDRESS         Underworld
4160    86  254  bones.Ethernet0    IPGATEWAY         Underworld
```

[Table 29](#) describes the fields shown in the display.

Table 29 *show appletalk name-cache Field Descriptions*

Field	Description
Net	AppleTalk network number or cable range.
Adr	Node address.
Skt	DDP socket number.
Name	Name of the service.
Type	Device type. The possible types vary, depending on the service. The following are the Cisco server types: <ul style="list-style-type: none"> • ciscoRouter—Server is a Cisco router. • SNMP Agent—Server is an SNMP agent. • IPGATEWAY—Active MacIP server names. • IPADDRESS—Active MacIP server addresses.
Zone	Name of the AppleTalk zone to which this address belongs.

Related Commands

Command	Description
show appletalk nbp	Displays the contents of the NBP name registration table.

show appletalk nbp



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk nbp** command is not available in Cisco IOS software.

To display the contents of the Name Binding Protocol (NBP) name registration table, use the **show appletalk nbp** command in EXEC mode.

show appletalk nbp

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The **show appletalk nbp** command lets you identify specific AppleTalk nodes. It displays services registered by the router. In contrast, use the **show appletalk name-cache** command to display any AppleTalk services of interest in local zones.

Routers with active AppleTalk interfaces register each interface separately. The Cisco IOS software generates a unique interface NBP name by appending the interface type name and unit number to the router name. For example, for the router named “router” that has AppleTalk enabled on Ethernet interface 0 in the zone Marketing, the NBP registered name is as follows:

```
router.Ethernet0:ciscoRouter@Marketing
```

Registering each interface on the router provides you with an indication that the device is configured and operating properly.

One name is registered for each interface. Other service types are registered once for each zone.

The Cisco IOS software deregisters the NBP name if AppleTalk is disabled on the interface for any reason.

Examples

The following is sample output from the **show appletalk nbp** command:

```
Router# show appletalk nbp
```

```
Net  Adr  Skt  Name                               Type           Zone
```

■ show appletalk nbp

```

4160 211 254 pag.Ethernet0      ciscoRouter      Low End SW Lab
4160 211   8 pag                SNMP Agent       Low End SW Lab
4172  84 254 pag.TokenRing0     ciscoRouter      LES Tokenring
4172  84   8 pag                SNMP Agent       LES Tokenring
200  75 254 myrouter. Ethernet1  ciscoRouter      Marketing      *
```

Table 30 describes the fields shown in the display, as well as other fields that may also be displayed.

Table 30 *show appletalk nbp Field Descriptions*

Field	Description
Net	AppleTalk network number.
Adr	Node address.
Skt	DDP socket number.
Name	Name of the service.
Type	Device type. The possible types vary, depending on the service. The following are the Cisco server types: <ul style="list-style-type: none"> • ciscoRouter—Cisco routers displayed by port. • SNMP Agent—SNMP agents displayed by zone if AppleTalk SNMP-over-DDP is enabled. • IPGATEWAY—Active MacIP server names. • IPADDRESS—Active MacIP server addresses.
Zone	Name of the AppleTalk zone to which this address belongs.
*	An asterisk in the right margin indicates that the name registration is pending confirmation.

■ Related Commands

Command	Description
show appletalk name-cache	Displays a list of NBP services offered by nearby routers and other devices that support NBP.

show appletalk neighbors



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk neighbors** command is not available in Cisco IOS software.

To display information about the AppleTalk routers that are directly connected to any of the networks to which this router is directly connected, use the **show appletalk neighbors** command in EXEC mode.

show appletalk neighbors [*neighbor-address*]

Syntax Description	<i>neighbor-address</i>	(Optional) Displays information about the specified neighbor router.
--------------------	-------------------------	----------------------------------------------------------------------

Command Modes	EXEC
---------------	------

Command History	Release	Modification
	10.0	This command was introduced.
	12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
	12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
	15.0(1)M	This command was removed.

Usage Guidelines

If no neighbor address is specified, this command displays information about all AppleTalk routers. The local router determines the AppleTalk network topology from its neighboring routers and learns from them most of the other information it needs to support the AppleTalk protocols.

Examples

The following is sample output from the **show appletalk neighbors** command:

```
Router# show appletalk neighbors
AppleTalk neighbors:
 17037.2      anger.Ethernet0/0      Ethernet0/0, uptime 8:33:27, 2 secs
              Neighbor is reachable as a RTMP peer
 17037.108    Ethernet0/0, uptime 8:33:21, 7 secs
              Neighbor is reachable as a RTMP peer
 17037.248    Ethernet0/0, uptime 8:33:30, 4 secs
              Neighbor is reachable as a RTMP peer
 17046.2      anger.Ethernet0/1      Ethernet0/1, uptime 8:33:27, 2 secs
              Neighbor is reachable as a RTMP peer
 17435.87     firewall.Ethernet0/0   Ethernet0/3, uptime 8:33:27, 6 secs
              Neighbor is reachable as a RTMP peer
 17435.186    the-wall.Ethernet0     Ethernet0/3, uptime 8:33:24, 5 secs
              Neighbor is reachable as a RTMP peer
 17435.233    teach-gw.Ethernet0     Ethernet0/3, uptime 8:33:24, 7 secs
              Neighbor is reachable as a RTMP peer
```

show appletalk neighbors

```

17036.1      other-gw.Ethernet5 Ethernet0/5, uptime 8:33:29, 9 secs
             Neighbor is reachable as a RTMP peer
4021.5       boojum.Hssi4/0   Hssi1/0, uptime 10:49:02, 0 secs
             Neighbor has restarted 1 time in 8:33:11.
             Neighbor is reachable as a static peer

```

Table 31 describes the fields shown in this display. Depending on the configuration of the **appletalk lookup-type** and **appletalk name-lookup-interval** commands, a node name as well as a node address also may be shown in this display.

Table 31 *show appletalk neighbors Field Descriptions*

Field	Description
31.86	AppleTalk address of the neighbor router.
Ethernet0/0	Router interface through which the neighbor router can be reached.
uptime 133:28:06	Amount of time (in hours, minutes, and seconds) that the Cisco IOS software has received this neighboring router's routing updates.
2 secs	Time (in seconds) since the software last received an update from the neighbor router.
Neighbor is reachable as a RTMP peer Neighbor is reachable as a static peer	Indicates how the route to this neighbor was learned.
Neighbor is down. Neighbor has restarted 1 time	Indicates whether neighbor is up or down, and number of times it has restarted in the specified time interval, displayed in the format hours:minutes:seconds.

The following is sample output from the **show appletalk neighbors** command when you specify the AppleTalk address of a particular neighbor:

```

Router# show appletalk neighbors 69.163

Neighbor 69.163, Ethernet0, uptime 268:00:52, last update 7 secs ago
  We have sent queries for 299 nets via 214 packets.
  Last query was sent 4061 secs ago.
  We received 152 replies and 0 extended replies.
  We have received queries for 14304 nets in 4835 packets.
  We sent 157 replies and 28 extended replies.
  We received 0 ZIP notifies.
  We received 0 obsolete ZIP commands.
  We received 4 miscellaneous ZIP commands.
  We received 0 unrecognized ZIP commands.
  We have received 92943 routing updates.
  Of the 92943 valid updates, 1320 entries were invalid.
  We received 1 routing update which were very late.
  Last update had 0 extended and 2 nonextended routes.
  Last update detail: 2 old

```

Table 32 describes the fields shown in this display. Depending on the configuration of the **appletalk lookup-type** and **appletalk name-lookup-interval** commands, a node name as well as a node address can be shown in this display.

Table 32 *show appletalk neighbors Field Descriptions—Specific Address*

Field	Description
Neighbor 69.163	AppleTalk address of the neighbor.
Ethernet0	Interface through which the router receives this neighbor's routing updates.
uptime 268:00:52	Amount of time (in hours, minutes, and seconds) that the Cisco IOS software has received this neighboring router's routing updates.
last update 7 secs ago	Time (in seconds) since the software last received an update from the neighbor router.
sent queries	Number of queries sent to neighbor networks and the number of query packets sent.
Last query was sent	Time (in seconds) since last query was sent.
received replies	Number of RTMP replies heard from this neighbor.
extended replies	Number of extended RTMP replies received from this neighbor.
ZIP notifies	Number of ZIP notify packets received from this neighbor.
obsolete ZIP commands	Number of nonextended-only (obsolete) ZIP commands received from this neighbor.
miscellaneous ZIP commands	Number of ZIP commands (for example, GNI, GZI, and GMZ) from end systems rather than from routers.
unrecognized ZIP commands	Number of bogus ZIP packets received from this neighbor.
routing updates	Number of RMTP updates received from this neighbor.
entries were invalid	Of the routing update packets received from this neighbor, the number of invalid entries discarded.
Last update detail	Of the routing update packets received from this neighbor, the number already known about.

Related Commands

Command	Description
appletalk lookup-type	Specifies which NBP service types are retained in the name cache.
appletalk name-lookup-interval	Sets the interval between service pollings by the router on its AppleTalk interfaces.

show appletalk remap


Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk remap** command is not available in Cisco IOS software.

To display domain remapping information, use the **show appletalk remap EXEC** command.

```
show appletalk remap [domain domain-number [{in | out} [{to | from} domain-network]]
```

Syntax Description

domain <i>domain-number</i>	(Optional) Number of an AppleTalk domain about which to display remapping information. It can be a decimal integer from 1 through 1,000,000.
in	(Optional) Displays remapping information about inbound packets, that is, on packets entering the local segment of the domain.
out	(Optional) Displays remapping information about outbound packets, that is on packets exiting from the local segment of the domain.
to	(Optional) Displays information about the network number or cable range to which an address has been remapped.
from	(Optional) Displays information about the original network number or cable range.
<i>domain-network</i>	(Optional) Number of an AppleTalk network.

Command Modes

EXEC

Command History

Release	Modification
10.3	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If you omit all options, keywords, and arguments, the **show appletalk remap** command displays all remapping information about all domains.

Examples

The following is sample output from the **show appletalk remap** command:

```
Router# show appletalk remap

AppleTalk  Remapping  Table :
-----
```

```

Domain 1 : Domain 1   State : Active
-----

Direction : IN

Domain Net(Cable)      Remapped to      Status
3      - 3            100 - 100        Good

Direction : OUT

Domain Net(Cable)      Remapped to      Status
1      - 1            200 - 200        Good

Domain 2 : Domain 2   State : Active
-----

Direction : IN

Domain Net(Cable)      Remapped to      Status

Direction : OUT

Domain Net(Cable)      Remapped to      Status
2      - 2            400 - 400        Good
100    - 100          401 - 401        Good

```

The following is sample output from the **show appletalk remap** command when you specify a domain number:

```

Router# show appletalk remap domain 1

AppleTalk Remapping Table :
-----

Domain 1 : Domain 1   State : Active
-----

Direction : IN

Domain Net(Cable)      Remapped to      Status
3      - 3            100 - 100        Good

Direction : OUT

Domain Net(Cable)      Remapped to      Status
1      - 1            201 - 201        Good

```

The following is sample output from the **show appletalk remap** command to display inbound remappings for AppleTalk network 100:

```

Router# show appletalk remap domain 1 in from 100

AppleTalk Remapping Table :
-----

```

For the Remap 100 the Domain net is 3

[Table 33](#) describes the fields shown in the display.

Table 33 *show appletalk remap Field Descriptions*

Field	Description
Domain	Number of the AppleTalk IP domain.
State	State of the domain. It can be either Active or Nonactive.
Direction	Indicates whether the mapping is an inbound one (for packets entering the local domain segment) or an outbound one (for packets leaving the local domain segment).
Domain Net (Cable)	Network number or cable range that is being remapped.
Remapped to	Number or range of numbers to which a network number or cable range has been remapped.
Status	It can be one of the following values: <ul style="list-style-type: none"> • Unassigned—The network number or cable range was just remapped. • Unzipped—The remapped network number or cable range is trying to acquire a zone list. This state is possible for inbound remapped network numbers only. • Suspect—The Cisco IOS software suspects that it already has this entry in the routing table, and it is performing loop detection for this entry. This state is possible for inbound remappings only. • Good—The remapped entry has a complete zone list and, for inbound remappings only, it is in the main routing table. • Bad—The remapping entry is about to be deleted from the remapping table.

Related Commands

Command	Description
appletalk domain remap-range	Remaps ranges of AppleTalk network numbers or cable ranges between two segments of a domain.

show appletalk route



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk route** command is not available in Cisco IOS software.

To display all entries or specified entries in the AppleTalk routing table, use the **show appletalk route EXEC** command.

```
show appletalk route [network | type number]
```

Syntax Description

<i>network</i>	(Optional) Displays the routing table entry for the specified network.
<i>type number</i>	(Optional) Displays the routing table entries for networks that can be reached via the specified interface type and number.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(13)T	The E - EIGRP field was removed from command output.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If you omit the arguments, this command displays all entries in the routing table.

Examples

The following is sample output from the **show appletalk route** command for a nonextended AppleTalk network:

```
Router# show appletalk route

Codes: R - RTMP derived, C - connected, A - AURP
P - proxy, S - static
5 routes in internet
C Net 258 directly connected, 1431 uses, Ethernet0, zone Twilight
R Net 6 [1/G] via 258.179, 8 sec, 0 uses, Ethernet0, zone The O
C Net 11 directly connected, 472 uses, Ethernet1, zone No Parking
R Net 2154 [1/G] via 258.179, 8 sec, 6892 uses, Ethernet0, zone LocalTalk
S Net 1111 via 258.144, 0 uses, Ethernet0, no zone set
[hops/state] state can be one of G:Good, S:Suspect, B:Bad
```

The following is sample output from the **show appletalk route** command for an extended AppleTalk network:

```
Router# show appletalk route
```

```
Codes: R - RTMP derived, C - connected, A - AURP
P - proxy, S - static
5 routes in internet
E Net 10000 -10000 [1/G] via 300.199, 275 sec, Ethernet2, zone France
R Net 890 [2/G] via 4.129, 1 sec, Ethernet0, zone release lab
R Net 901 [2/G] via 4.129, 1 sec, Ethernet0, zone Dave's House
C Net 999-999 directly connected, Serial3, zone Magnolia Estates
R Net 2003 [4/G] via 80.129, 6 sec, Ethernet4, zone Bldg-13
```

The following is sample output from the **show appletalk route** command when AppleTalk load balancing is enabled. The output displayed shows additional equal-cost path entries.

```
Router# show appletalk route
```

```
Codes: R - RTMP derived, C - connected, A - AURP
P - proxy, S - static
759 routes in internet. Up to 4 parallel paths allowed.
```

The first zone listed for each entry is its default (primary) zone.

```
R Net 20-20 [2/G] via 60.172, 1 sec, Ethernet1/2,
                  via 1010.68 1 sec, Ethernet1/3,
                  via 70.199, 2 sec, Ethernet1/5, zone zone20
R Net 32-32 [9/G] via 60172, 2 sec, Ethernet1/2
                  via 1010.68, 2 sec, Ethernet1/3,
                  via 70.199, 2 sec, Ethernet1/5,
                  Zone: "Executive Briefing Center"
R Net 43-43 [7/G] via 60.172, 2 sec, Ethernet1/2,
                  via 1010.68, 2 sec, Ethernet1/3,
                  via 70.199, 2 sec, Ethernet1/5, zone ISDN Tunnel
R Net 57-57 [6/G] via 60.172, 2 sec, Ethernet1/2,
                  via 1010.68, 2 sec, Ethernet1/3,
                  via 70.199, 2 sec, Ethernet1/5, zone zone-home-bumi
```

[Table 34](#) describes the fields shown in the two displays, as well as some fields not shown but that may also be displayed. Depending on the configuration of the **appletalk lookup-type** and **appletalk name-lookup-interval** global configuration commands, a node name may appear in this display instead of a node address.

Table 34 *show appletalk route Field Descriptions*

Field	Description
Codes:	Codes defining how the route was learned.
R - RTMP derived	Route learned from an RTMP update.
C - Connected	Directly connected network.
A - AURP	Route learned from an AURP update.
S - Static	Statically defined route.

Table 34 *show appletalk route Field Descriptions (continued)*

Field	Description
P - Proxy	Proxy route. Proxy routes are included in outgoing RTMP updates as if they were directly connected routes (although they are not really directly connected), since they are not associated with any interface. Whenever an NBQ BrRq for the zone in question is generated by anyone anywhere in the internetwork, an NBP FwdReq is directed to any router connected to the proxy route. The Phase 2 router (which is the only router directly connected) converts the FwdReq to LkUps, which are understood by Phase 1 routers, and sends them to every network in the zone.
routes	Number of routes in the table.
Net	Network to which the route goes.
Net 999-999	Cable range to which the route goes.
directly connected	Indicates that the network is directly connected to the router.
uses	Fair estimate of the number of times a route gets used. It actually indicates the number of times the route has been selected for use prior to operations such as access list filtering.
Ethernet	Possible interface through which updates to the remote network will be sent.
zone	Name of zone of which the destination network is a member.
[1/G]	<p>Number of hops to this network, followed by the state of the link to that network. The state can be one of the following letters:</p> <ul style="list-style-type: none"> • G—Link is good. • S—Link is suspect. • B—Link is bad. <p>The state is determined from the routing updates that occur at 10-second intervals. A separate and nonsynchronized event occurs at 20-second intervals, checking and flushing the ratings for particular routes that have not been updated. For each 20-second period that passes with no new routing information, a rating changes from G to S and then from S to B. After 1 minute with no updates, that route is flushed. Every time the Cisco IOS software receives a useful update, the status of the route in question is reset to G. Useful updates are those advertising a route that is as good or better than the one currently in the table.</p> <p>When an AppleTalk route is poisoned by another router, its metric gets changed to poisoned (that is, 31 hops). The software then will age this route normally during a holddown period, during which the route will still be visible in the routing table.</p>
via 258.179	Address of a router that is the next hop to the remote network.

Table 34 *show appletalk route Field Descriptions (continued)*

Field	Description
via gatekeeper	Node name of a router that is the next hop to the remote network.
sec	Number of seconds that have elapsed since an RMTP update about this network was last received.

The following is sample output from the **show appletalk route** command when you specify a network number:

```
Router# show appletalk route 69
```

```
Codes: R - RTMP derived, C - connected, A - AURP
P - proxy, S - static
```

The first zone listed for each entry is its default (primary) zone.

```
R Net 69-69 [2/G] via gatekeeper, 0 sec, Ethernet0, zone Empty Guf
Route installed 125:20:21, updated 0 secs ago
Next hop: gatekeeper, 2 hops away
Zone list provided by gatekeeper
Route has been updated since last RTMP was sent
Valid zones: "Empty Guf"
```

[Table 35](#) describes the fields shown in the display.

Table 35 *show appletalk route Field Descriptions—Specified Network*

Field	Description
Codes:	Codes defining how the route was learned.
R - RTMP derived	Route learned from an RTMP update.
C - Connected	Directly connected network.
A - AURP derived	Route learned from an AURP update.
P - Proxy	Proxy route.
S - Static	Static route.
routes in internet	Number of routes in the Apple Talk internet.
Net	Cable range to which the route goes. This is the number of the network you specified on the show appletalk route command line.

Table 35 *show appletalk route Field Descriptions—Specified Network (continued)*

Field	Description
[2/G]	<p>Number of hops to this network, followed by the state of the link to that network. The state can be one of the following letters:</p> <ul style="list-style-type: none"> • G—Link is good. • S—Link is suspect. • B—Link is bad. <p>The state is determined from the routing updates that occur at 10-second intervals. A separate and nonsynchronized event occurs at 20-second intervals, checking and flushing the ratings for particular routes that have not been updated. For each 20-second period that passes with no new routing information, a rating changes from G to S and then from S to B. After 1 minute with no updates, that route is flushed. Every time the Cisco IOS software receives a useful update, the status of the route in question is reset to G. Useful updates are those advertising a route that is as good or better than the one currently in the table.</p> <p>When an AppleTalk route is poisoned by another router, its metric gets changed to poisoned (that is, 31 hops). The software then will age this route normally during a holddown period, during which the route will still be visible in the routing table.</p>
via gatekeeper	Address or node name of a router that is the next hop to the remote network.
0 sec	Number of seconds that have elapsed since an RTMP update about this network was last received.
Ethernet0	Possible interface through which updates to the remote network will be sent.
zone Empty Guf	Name of zone of which the destination network is a member.
Route installed 125:20:21	Length of time (in hours, minutes, and seconds) since this route was first learned about.
updated 0 secs ago	Time (in seconds) since the software received an update for this route.
Next hop: gatekeeper	Address or node name of the router that is one hop away.
2 hops away	Number of hops to the network specified in the show appletalk route command line.
Zone list provided by gatekeeper	Address or node name of the router that provided the zone list included with the RTMP update.
Route has been updated since last RTMP was sent	Indicates whether the software has received a routing update from a neighboring router since the last time the software sent an RTMP update for this route.
Valid zones: "Empty Guf"	Zone names that are valid for this network.

Related Commands	Command	Description
	appletalk lookup-type	Specifies which NBP service types are retained in the name cache.
	appletalk maximum-paths	Defines the maximum number of equal-cost paths the router should use when balancing the traffic load.
	appletalk name-lookup-interval	Sets the interval between service pollings by the router on its AppleTalk interfaces.
	appletalk proxy-nbp	Assigns a proxy network number for each zone in which there is a router that supports only nonextended AppleTalk.
	clear appletalk route	Deletes entries from the routing table.

show appletalk sockets



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk sockets** command is not available in Cisco IOS software.

To display all information or specified information about process-level operation in the sockets of an AppleTalk interface, use the **show appletalk sockets** privileged EXEC command.

```
show appletalk sockets [socket-number]
```

Syntax Description

socket-number (Optional) Displays information about the specified socket number.

Command Modes

Privileged EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If no socket number is specified, this command displays information about all sockets.

Examples

The following is sample output from the **show appletalk sockets** command when you do not specify a socket number:

```
Router# show appletalk sockets

Socket  Name      Owner      Waiting/Processed
-----  -
1       RTMP      AT RTMP    0    148766
2       NIS       AT NBP     0    15642
4       AEP       AT Maintenance  0    0
6       ZIP       AT ZIP     0    13619
8       SNMP      AT SNMP    0    0
253    PingServ  AT Maintenance  0    0
```

The following is sample output from the **show appletalk sockets** command when you do specify a socket number:

```
Router# show appletalk sockets 6

6       ZIP       AT ZIP     0    13619
```

Table 36 describes the fields shown in these displays.

Table 36 *show appletalk sockets Field Descriptions*

Field	Description
Socket	Socket number.
Name	Name of the socket.
Owner	Process that is managing communication with this socket.
Waiting/Processed	Number of packets waiting to be processed by the socket, and number of packets that have been processed by the socket since it was established.

show appletalk static



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk static** command is not available in Cisco IOS software.

To display information about the statically defined routes, including floating static routes, use the **show appletalk static EXEC** command.

show appletalk static

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show appletalk static** command:

```
Router# show appletalk static

      AppleTalk   Static   Entries
-----
Network   NextIR   Zone    Status
100-109   1.10    Zone100  A
200       1.10    Zone200  A
300-309   1.10    Zone300  A(Floating)
```

[Table 37](#) describes the fields shown in the display.

Table 37 *show appletalk static* Field Descriptions

Field	Description
Network	For an extended AppleTalk network, the network range. For a nonextended AppleTalk network, the network number.
NextIR	The next internetwork router.

Table 37 *show appletalk static Field Descriptions (continued)*

Field	Description
Zone	The AppleTalk zone name.
Status	The status of the route, which can be one of the following: <ul style="list-style-type: none"> • A—The static route is active. • A(Floating)—The floating static route is active. • N/A—The static route is not active. • N/A(Floating)—The floating static route is not active.

Related Commands

Command	Description
appletalk static cable-range	Defines a static route or a floating static route on an extended network.
appletalk static network	Defines a static route or a floating static route on a nonextended network.
show appletalk neighbors	Displays information about the AppleTalk routers that are directly connected to any of the networks to which this router is directly connected.
show appletalk route	Displays all entries or specified entries in the AppleTalk routing table.

show appletalk traffic



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk traffic** command is not available in Cisco IOS software.

To display statistics about AppleTalk traffic, including MacIP traffic, use the **show appletalk traffic EXEC** command.

show appletalk traffic

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(13)T	The EIGRP section was removed from command output.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

For MacIP traffic, an IP alias is established for each MacIP client and for the IP address of the MacIP server if it does not match an existing IP interface address. To display the client aliases, use the **show ip aliases** command.

Examples

The following is sample output from the **show appletalk traffic** command:

```
Router# show appletalk traffic

AppleTalk statistics:
  Rcvd: 357471 total, 0 checksum errors, 264 bad hop count
        321006 local destination, 0 access denied
        0 for MacIP, 0 bad MacIP, 0 no client
        13510 port disabled, 2437 no listener
        0 ignored, 0 martians
  Bcast: 191881 received, 270406 sent
  Sent: 550293 generated, 66495 forwarded, 1840 fast forwarded, 0 loopback
        0 forwarded from MacIP, 0 MacIP failures
        436 encapsulation failed, 0 no route, 0 no source
  DDP: 387265 long, 0 short, 0 macip, 0 bad size
  NBP: 302779 received, 0 invalid, 0 proxies
        57875 replies sent, 59947 forwards, 418674 lookups, 432 failures
  RTMP: 108454 received, 0 requests, 0 invalid, 40189 ignored
```

■ show appletalk traffic

```

          90170 sent, 0 replies
AURP: 0 Open Requests, 0 Router Downs
      0 Routing Information sent, 0 Routing Information received
      0 Zone Information sent, 0 Zone Information received
      0 Get Zone Nets sent, 0 Get Zone Nets received
      0 Get Domain Zone List sent, 0 Get Domain Zone List received
AppleTalk statistics:
      0 bad sequence
ATP:  0 received
ZIP:  13619 received, 33633 sent, 32 netinfo
Echo: 0 received, 0 discarded, 0 illegal
      0 generated, 0 replies sent
Responder: 0 received, 0 illegal, 0 unknown
          0 replies sent, 0 failures
AARP: 85 requests, 149 replies, 100 probes
      84 martians, 0 bad encapsulation, 0 unknown
      278 sent, 0 failures, 29 delays, 315 drops
Lost: 0 no buffers
Unknown: 0 packets
Discarded: 130475 wrong encapsulation, 0 bad SNAP discriminator

```

Table 38 describes the fields shown in the display.

Table 38 *show appletalk traffic Field Descriptions*

Field	Description
Rcvd:	This section describes the packets received.
357741 total	Total number of packets received.
0 checksum errors	Number of packets that were discarded because their DDP checksum was incorrect. The DDP checksum is verified for packets that are directed to the router. It is not verified for forwarded packets.
264 bad hop count	Number of packets discarded because they had traveled too many hops.
321006 local destination	Number of packets addressed to the local router.
0 access denied	Number of packets discarded because they were denied by an access list.
0 for MacIP	Number of AppleTalk packets the Cisco IOS software received that were encapsulated within an IP packet.
0 bad MacIP	Number of bad MacIP packets the software received and discarded. These packets may have been malformed or may not have included a destination address.
0 no client	Number of packets discarded because they were directed to a nonexistent MacIP client.
13510 port disabled	Number of packets discarded because routing was disabled for that port (extended AppleTalk only). This is the result of a configuration error or a packet's being received while the software is in verification/discovery mode.
2437 no listener	Number of packets discarded because they were directed to a socket that had no services associated with it.

Table 38 *show appletalk traffic Field Descriptions (continued)*

Field	Description
0 ignored	Number of routing update packets ignored because they were from a misconfigured neighbor or because routing was disabled.
0 martians	Number of packets discarded because they contained bogus information in the DDP header. What distinguishes this error from the others is that the data in the header is never valid as opposed to not being valid at a given point in time.
Bcast:	Number of broadcast packets sent and received.
191881 received	Number of broadcast packets received.
270406 sent	Number of broadcast packets sent.
Sent:	Number of packets transmitted.
550293 generated	Number of packets generated.
66495 forwarded	Number of packets forwarded using routes derived from process switching.
1840 fast forwarded	Number of packets sent using routes from the fast-switching cache.
0 loopback	Number of packets that were broadcast out an interface on the router for which the device simulated reception of the packet because the interface does not support sending a broadcast packet to itself. The count is cumulative for all interfaces on the device.
0 forwarded from MacIP	Number of IP packets forwarded that were encapsulated within an AppleTalk DDP packet.
0 MacIP failures	Number of MacIP packets sent that were corrupted during the MacIP encapsulation process.
436 encapsulation failed	Number of packets the router could not send because encapsulation failed. This can happen because encapsulation of the DDP packet failed or because AARP address resolution failed.
0 no route	Number of packets the router could not send because it knew of no route to the destination.
0 no source	Number of packets the router sent when it did not know its own address. This should happen only if something is seriously wrong with the router or network configuration.
DDP:	This section describes DDP packets seen.
387265 long	Number of DDP long packets.
0 short	Number of DDP short packets.
0 macip	Number of IP packets encapsulated in an AppleTalk DDP packet that the router sent.
0 bad size	Number of packets whose physical packet length and claimed length differed.
NBP:	This section describes NBP packets.

Table 38 *show appletalk traffic Field Descriptions (continued)*

Field	Description
302779 received	Total number of NBP packets received.
0 invalid	Number of invalid NBP packets received. Causes include invalid op code and invalid packet type.
0 proxies	Number of NBP proxy lookup requests received by the router when it was configured for NBP proxy transition usage.
57875 replies sent	Number of NBP replies sent.
59947 forwards	Number of NBP forward requests received or sent.
418674 lookups	Number of NBP lookups received.
432 failures	Generic counter that increments any time the NBP process experiences a problem.
RTMP:	This section describes RTMP packets.
108454 received	Total number of RTMP packets received.
0 requests	Number of RTMP requests received.
0 invalid	Number of invalid RTMP packets received. Causes include invalid op code and invalid packet type.
40189 ignored	Number of RTMP packets ignored. One reason for this is that the interface is still in discovery mode and is not yet initialized.
90170 sent	Number of RTMP packets sent.
0 replies	Number of RTMP replies sent.
ATP:	This section describes ATP packets.
0 received	Number of ATP packets the router received.
ZIP:	This section describes ZIP packets.
13619 received	Number of ZIP packets the router received.
33633 sent	Number of ZIP packets the router sent.
32 netinfo	Number of packets that requested port configuration via ZIP GetNetInfo requests. These are commonly used during node startup and are occasionally used by some AppleTalk network management software packages.
Echo:	This section describes AEP packets.
0 received	Number of AEP packets the router received.
0 discarded	Number of AEP packets the router discarded.
0 illegal	Number of illegal AEP packets the router received.
0 generated	Number of AEP packets the router generated.
0 replies sent	Number of AEP replies the router sent.
Responder:	This section describes Responder Request packets.
0 received	Number of Responder Request packets the router received.
0 illegal	Number of illegal Responder Request packets the router received.

Table 38 *show appletalk traffic Field Descriptions (continued)*

Field	Description
0 unknown	Number of Responder Request packets the router received that it did not recognize.
0 replies sent	Number of Responder Request replies the router sent.
0 failures	Number of Responder Request replies the router could not send.
AARP:	This section describes AARP packets.
85 requests	Number of AARP requests the router received.
149 replies	Number of AARP replies the router received.
100 probes	Number of AARP probe packets the router received.
84 martians	Number of AARP packets the router did not recognize. If you start seeing an inordinate number of martians on an interface, check whether a bridge has been inserted into the network. When a bridge is starting up, it floods the network with AARP packets.
0 bad encapsulation	Number of AARP packets received that had an unrecognizable encapsulation.
0 unknown	Number of AARP packets the router did not recognize.
278 sent	Number of AARP packets the router sent.
0 failures	Number of AARP packets the router could not send.
29 delays	Number of AppleTalk packets delayed while waiting for the results of an AARP request.
315 drops	Number of AppleTalk packets dropped because an AARP request failed.
Lost: 0 no buffers	Number of packets lost because of lack of buffer space.
Unknown: 0 packets	Number of packets whose protocol could not be determined.
Discarded:	This section describes the number of packets that were discarded.
130475 wrong encapsulation	Number of packets discarded because they had the wrong encapsulation. That is, nonextended AppleTalk packets were on an extended AppleTalk network, or vice versa.
0 bad SNAP discrimination	Number of packets discarded because they had the wrong SNAP discriminator. This occurs when another AppleTalk device has implemented an obsolete or incorrect packet format.
AURP:	This section describes AppleTalk Update Routing Protocol packets.
0 open requests	Total number of open requests.
0 router downs	Number of router down packets received.
0 routing information sent	Number of routing information packets sent.
0 routing information received	Number of routing information packets received.

Table 38 *show appletalk traffic Field Descriptions (continued)*

Field	Description
0 zone information sent	Number of ZIP packets sent.
0 zone information received	Number of ZIP packets received.
0 get zone nets sent	Number of get zone network packets sent requesting zone information.
0 get zone nets received	Number of get zone network packets received requesting zone information.
0 get domain zone list sent	Number of get domain zone list packets sent requesting domain zone list information.
0 get domain zone list received	Number of get domain zone list packets received requesting domain zone list information.
0 bad sequence	Number of AURP packets received out of sequence.

Related Commands

Command	Description
clear appletalk traffic	Resets AppleTalk traffic counters.
show appletalk macip-traffic	Displays statistics about MacIP traffic through the router.
show ip aliases	Displays the IP addresses mapped to TCP ports (aliases) and SLIP addresses, which are treated similarly to aliases.

show appletalk zone



Note

Effective with Cisco IOS Release 15.0(1)M, the **show appletalk zone** command is not available in Cisco IOS software.

To display all entries or specified entries in the zone information table, use the **show appletalk zone EXEC** command.

```
show appletalk zone [zone-name]
```

Syntax Description

<i>zone-name</i>	(Optional) Displays the entry for the specified zone.
------------------	-------------------------------------------------------

Command Modes

EXEC

Command History

Release	Modification
10.0	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If no zone name is specified, the command displays all entries in the zone information table.

You can use this command on extended and nonextended networks.

A zone name can be associated with multiple network addresses or cable ranges, or both. There is not a one-to-one correspondence between a zone name and a LAN; a zone name may correspond to one or more networks (LANs or network interfaces). This means that a zone name will effectively replace multiple network addresses in zone filtering. This is reflected in the output of the **show appletalk zone** command. For example, the zone named *Mt. View 1* in the following example is associated with two network numbers and four cable ranges.

Examples

The following is sample output from the **show appletalk zone** command:

```
Router# show appletalk zone

Name                Network(s)
Engineering         3 29-29 4042-4042
customer eng       19-19
CISCO IP           4140-4140
Dave's House       3876 3924 5007
Narrow Beam        4013-4013 4023-4023 4037-4037 4038-4038
Low End SW Lab     6160 4172-4172 9555-9555 4160-4160
Tir'n na'Og        199-199
```

show appletalk zone

```

Mt. View 1          7010-7010 7122 7142 7020-7020 7040-7040 7060-7060
Mt. View 2          7152 7050-7050
UDP                 1112-12
Empty Guf           69-69
Light               80
europe              2010 3010 3034 5004
Bldg-13             4032 5026 61669 3012 3025 3032 5025 5027
Bldg-17             3004 3024 5002 5006

```

The following is sample output from the **show appletalk zone** command when you specify a zone name:

```

Router# show appletalk zone CISCO IP

AppleTalk Zone Information for CISCO IP:
  Valid for nets: 4140-4140
  Not associated with any interface.
  Not associated with any access list.

```

Table 39 describes the fields shown in the display.

Table 39 *show appletalk zone Field Descriptions—Specific Zone Name*

Field	Description
AppleTalk Zone Information for CISCO IP:	Name of the zone.
Valid for nets: 4140-4140	Cable range(s) or network numbers assigned to this zone.
Not associated with any interface.	Interfaces that have been assigned to this zone.
Not associated with any access list.	Access lists that have been defined for this zone.

Related Commands

Command	Description
appletalk zone	Sets the zone name for the connected AppleTalk network.

show smrp forward



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp forward** command is not available in Cisco IOS software.

To display all entries or specific entries in the Simple Multicast Routing Protocol (SMRP) forwarding table, use the **show smrp forward** EXEC command.

```
show smrp forward [appletalk [group-address]]
```

Syntax Description

appletalk	(Optional) Displays SMRP forwarding table entries for all AppleTalk networks. Currently SMRP services are supported over AppleTalk only.
<i>group-address</i>	(Optional) SMRP group address. All members of a group listen for multicast packets on this address.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

The SMRP forwarding table describes the relationship between the SMRP router and the distribution tree for each SMRP group on the internetwork. An SMRP router has an entry in this table for every SMRP group for which the router is forwarding data. When data for an SMRP group arrives on the parent interface, it is forwarded to each child interface.

Looking at child and parent interfaces in relation to members of an SMRP group, a child interface is a neighbor that is farther away from the SMRP creator node and a parent interface is one that is closer to the creator node.

If no SMRP group address is specified, then the **show smrp forward** command displays information for all entries in the SMRP forwarding table. For all entries, the **show smrp forward** command displays the SMRP group address, the state of the SMRP group, the parent interface and address, and one or more child interfaces and addresses.

If an SMRP group address is specified, the command displays additional information for that group showing the child count, the time elapsed since the entry was updated, and the next poll time.

**Note**

Because SMRP is currently supported over AppleTalk networks only, sample output resulting from the **show smrp forward** command is the same as output from the **show smrp forward appletalk** command.

Examples

The following is sample output from the **show smrp forward** command that shows all entries:

```
Router# show smrp forward
```

```
SMRP Forwarding Table
```

Group Address	State	Parent Interface	Parent Address	Child Interface	Child Address
AT 1.2	Fwd	Ethernet2	20.3	Ethernet3	30.2
AT 10.1	Fwd	Ethernet2	20.4	Ethernet4	40.2
AT 30.1	Fwd	Ethernet3	30.1	Ethernet2	20.2

The following is sample output from the **show smrp forward** command with the **appletalk** keyword and an SMRP group address specified:

```
Router# show smrp forward appletalk 10.1
```

Group Address	State	Parent Interface	Parent Address	Child Interface	Child Address
AT 10.1	Fwd	Ethernet2	20.4	Ethernet4	40.2

```
Child count: 1
```

```
Elapsed update time: 01:15:32
```

```
Next poll time (sec): 3
```

[Table 40](#) describes the fields shown in the displays.

Table 40 *show smrp forward* Field Descriptions

Field	Description
Group Address	Address of the SMRP group.
State	State of the group. Possible states are as follows: <ul style="list-style-type: none"> Join—Joining the group Fwd—Forwarding data Leave—Leaving the group
Parent Interface	Interface that receives data to be forwarded.
Parent Address	Address of the parent interface.
Child Interface	One or more interfaces to which data is forwarded.
Child Address	Address of the interface.
Child Count	For a specific SMRP group address, the number of children for the group.

Table 40 *show smrp forward Field Descriptions (continued)*

Field	Description
Elapsed update time	Time elapsed since the last change was made to the forwarding entry.
Next poll time	Time remaining before polling all child members.

show smrp globals



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp globals** command is not available in Cisco IOS software.

To display global information about Simple Multicast Routing Protocol (SMRP)—such as whether SMRP is enabled and running and settings for timers, most of which are used internally—use the **show smrp globals EXEC** command.

```
show smrp globals
```

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Examples

The following is sample output from the **show smrp globals** command:

```
Router# show smrp globals
```

```
SMRP global information:
SMRP is running.
Maximum number of retries for requests is 4 times.
Request transactions are sent every 10 seconds.
Response transactions are sent every 100 seconds.
Creators are polled every 60 seconds.
Members are polled every 30 seconds.
Hellos are sent every 10 seconds.
Neighbors are down after not being heard from for 30 seconds.
Poisoned routes purged after 60 seconds.
Primary requests sent every 1 second.
Secondary requests sent every 1 second.
```

[Table 41](#) describes the global information shown in the display.

Table 41 *show smrp globals* Field Descriptions

Field	Description
SMRP is running.	SMRP is enabled.
Maximum number of retries for requests is 4.	This value is used internally.
Request transactions are sent every 10 seconds.	This timer is used internally.
Response transactions are sent every 100 seconds.	This timer is used internally. This is a variable value that is determined by the following mathematical formula: $2 * request-interval * (maximum-retries + 1)$
Creators are polled every 60 seconds.	Identifies how often the Cisco IOS software polls the SMRP group creator. This timer is used internally.
Members are polled every 30 seconds.	Identifies how often the software polls the SMRP group members. This timer is used internally.
Hellos are sent every 10 seconds.	Identifies how often the software sends hello packets to its neighbors.
Neighbors are down after not being heard from for 30 seconds.	Identifies the time in seconds that elapses after which neighbors that are not heard from are assumed to be down.
Poisoned routes are purged after 60 seconds.	Poisoned routes are bad route having a distance of 255 hops.
Primary requests sent every 1 second.	Primary requests are requests from a secondary router requesting to become the primary router. Only a secondary router can become a primary router.
Secondary requests sent every 1 second.	Secondary requests are requests from a router in normal operation mode requesting to become a secondary router. Only a router in normal mode can become a secondary router.

show smrp group



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp group** command is not available in Cisco IOS software.

To display all entries or specific entries in the SMRP group table, use the **show smrp group EXEC** command.

```
show smrp group [appletalk [group-address]]
```

Syntax Description

appletalk	(Optional) Displays SMRP group table entries for all AppleTalk networks. Currently SMRP services are supported over AppleTalk networks only.
<i>group-address</i>	(Optional) SMRP group address.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

If no SMRP group address is specified, the command displays the group address, the state, and the parent and child information for all entries in the SMRP group table. If a group address is specified, the command displays the standard information plus additional information for that group showing the child count, the elapsed update time, and the next poll time.



Note

Because SMRP is currently supported over AppleTalk networks only, sample output resulting from the **show smrp group** command is the same as output from **show smrp group appletalk** command.

An SMRP group address is an address that is based on the local network address of the network to which the creator of the SMRP group belongs.

Examples

The following is sample output from the **show smrp group** command that shows all group table entries:

```
Router# show smrp group
```

```

SMRP Group Table
Group      Creation  Next      Creator
Address    Time      Poll      Interface Address
-----
AT 30.1    0:04:37  22        Ethernet3 30.1
AT 40.2    0:04:35  24        Ethernet4 40.1
AT 40.1    0:04:36  23        Ethernet4 40.1

```

The following is sample output from the **show smrp group** command with the **appletalk** keyword and an SMRP group address specified:

```
Router# show smrp group appletalk 40.2
```

```

SMRP Group Table
Group      Creation  Next      Creator
Address    Time      Poll      Interface Address
-----
AT 40.2    0:05:58  1         Ethernet4 40.1

```

[Table 42](#) describes the fields shown in the display.

Table 42 *show smrp group Field Descriptions*

Field	Description
Group Address	SMRP group address. AT signifies that this is an AppleTalk network group.
Creation Time	Elapsed time since the group was created in hours, minutes, and seconds (<i>hh:mm:ss</i>).
Next Poll	Time remaining until the next check is performed to determine if the creator is still active.
Creator Interface	Interface that the creator of the SMRP group is on.
Creator Address	Address of the creator.

show smrp mcache



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp mcache** command is not available in Cisco IOS software.

To display the SMRP fast-switching cache table, use the **show smrp mcache EXEC** command.

```
show smrp mcache [appletalk [group-address]]
```

Syntax Description

appletalk	(Optional) Displays the SMRP fast-switching cache table entries for all AppleTalk network groups. Currently, SMRP services are supported over AppleTalk only.
<i>group-address</i>	(Optional) SMRP group address. Use this argument to display only this group's fast-switching cache table entry.

Command Modes

EXEC

Command History

Release	Modification
11.1	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

An SMRP router has an entry in its forwarding table for every SMRP group for which the router forwards data. For each group, the forwarding table lists the parent interface and address and one or more child interfaces and addresses. When data for an SMRP group arrives on the parent interface, the router forwards it to each child interface. The SMRP fast-switching cache table specifies whether or not to fast switch SMRP data packets out the interfaces specified by the forwarding table.

Use the **show smrp mcache** command to view the SMRP fast-switching cache table. The command displays which interfaces are fast-switch enabled. If a parent interface is not fast-switch enabled, then there is no entry (row) in the table. If a child interface is not fast-switch enabled, then it is not in the list of child interfaces for an entry in the table.

If you do not specify an SMRP group address, the **show smrp mcache** command displays information for all entries in the SMRP fast-switching cache table. If you specify an SMRP group address, the command displays cache entries for only that group.

SMRP fast-switching is enabled by default.

Examples

The following is sample output from the **show smrp mcache** command:

```
Router# show smrp mcache
```

```
SMRP Multicast Fast Switching Cache
Group      In  Parent      Child      MAC Header (Top)
Address    Use Interface Interface(s) Network Header (Bottom)
-----
AT 11.121  Y  Ethernet0   Ethernet3   090007400b7900000c1740db
                                001fed750000002aff020a0a0a
AT 11.122  Y  Ethernet0   Ethernet3   090007400b7a00000c1740db
                                001f47750000002aff020a0a0a
AT 11.123  Y  Ethernet0   Ethernet1   090007400b7b00000c1740d9
                                001fe77500000014ff020a0a0a
                                Ethernet3   090007400b7b00000c1740db
                                001ffd750000002aff020a0a0a
AT 11.124  N  Ethernet0   Ethernet1   090007400b7c00000c1740d9
                                001fef7500000014ff020a0a0a
```

Table 43 describes the fields shown in the display.

Table 43 *show smrp mcache Field Descriptions*

Field	Description
Group Address	SMRP group address. AT signifies that this is an AppleTalk network group.
In Use	Y = Router can use the cache entry to fast-switch packets. N = Router cannot use cache entry to fast-switch packets. Router forwards packets via the process level.
Parent Interface	Interface that receives the SMRP data packet to send out. The interface must be fast-switch enabled.
Child Interface(s)	One or more interfaces to which the SMRP data packet is sent. At least one of the child interfaces must be fast-switch enabled.
MAC Header (Top) Network Header (Bottom)	MAC header and network header for only fast-switch enabled child interfaces.

Related Commands

Command	Description
clear smrp mcache	Removes all fast-switching entries in the SMRP fast-switching cache table.
show smrp forward	Displays all entries or specific entries in the SMRP forwarding table.

show smrp neighbor



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp neighbors** command is not available in Cisco IOS software.

To display all entries or specific entries in the SMRP neighbor table, use the **show smrp neighbor EXEC** command.

```
show smrp neighbor [appletalk [network-address]]
```

Syntax Description

appletalk	(Optional) Displays SMRP neighbor table entries for all AppleTalk networks. Currently SMRP services are supported over AppleTalk networks only.
<i>network-address</i>	(Optional) Network address of the neighbor router.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

A neighbor is an adjacent router. Neighboring routers keep track of one another by sending and receiving hello packets periodically. Using this method, the Cisco IOS software can determine if it has heard from a neighbor router within a certain amount of time. The software creates an entry in its neighbor table when it finds a neighboring route. The software maintains the entry, indicating, among other information, the current state of the neighbor. The software updates the entry if the state of the neighbor router changes; for example, a secondary router became a primary router. The secondary router is the router that becomes the primary router when the primary router is no longer heard from.

For all neighboring routers, the **show smrp neighbor** command displays the address of the neighbor router, the state of the neighbor, its interface, the last time it was heard from, its route version number, and whether or not routes need to be sent to the neighbor. If the network address of a specific neighbor is given as a command parameter, this information is displayed for that neighbor router only.

**Note**

Because SMRP is currently supported over AppleTalk networks only, sample output resulting from the **show smrp neighbor** command is the same as output from **show smrp neighbor appletalk** command.

Examples

The following is sample output from the **show smrp neighbor** command that displays SMRP neighbor table entries for all neighbors:

```
Router# show smrp neighbor

SMRP Neighbor Table

Neighbor  State Interface      Heard      Last
-----
20.3      (S)  Ethernet2      5
10.4      (N)  Ethernet1      3
11.5      (S)  Ethernet1      7
```

The following is sample output from the **show smrp neighbor** command with the **appletalk** keyword and the network address of a specific neighboring node:

```
Router# show smrp neighbor appletalk 20.3

SMRP Neighbor Table

Neighbor  State Interface      Heard      Last
-----
20.3      (S)  Ethernet2      5

Route version: 0x0000000E
Routes needed: False
```

[Table 44](#) describes the fields shown in the display.

Table 44 *show smrp neighbor Field Descriptions*

Field	Description
Neighbor	Network address of the neighbor router.
State	State of the neighbor. Possible states are: <ul style="list-style-type: none"> • (P) —Primary operation • (S) —Secondary operation • (N) —Normal operation • PN.. —Primary negotiation • SN.. —Secondary negotiation • -D- —Down
Interface	Interface to the neighbor router.
Last Heard	Last time in seconds that the neighbor was heard from.

Table 44 *show smrp neighbor Field Descriptions (continued)*

Field	Description
Route Version	Route version number of the neighbor. If the route version number is less than the neighbor's route version, then the route will be sent to that neighbor.
Routes Needed	True if routes need to be sent to the neighbor; False if not.

show smrp port



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp port** command is not available in Cisco IOS software.

To display all entries or specific entries in the SMRP port table, use the **show smrp port EXEC** command.

```
show smrp port [appletalk [type number]]
```

Syntax Description

appletalk	(Optional) Displays SMRP port table entries for all AppleTalk networks. Currently SMRP services are supported over AppleTalk networks only.
<i>type</i>	(Optional) Interface type.
<i>number</i>	(Optional) Interface number.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

For all SMRP ports, the **show smrp port** command displays the interface of the SMRP port, the current state of the port, the network protocol type (currently only AppleTalk is supported) and its address, the address of the primary router on the local network, the address of the secondary router on the local network, the current groups on the port, and the last group on the port.

If the interface of a specific SMRP port is given, this information is displayed for that port only.



Note

Because SMRP is currently supported over AppleTalk networks only, sample output resulting from the **show smrp port** command is the same as output from **show smrp port appletalk** command.

Examples

The following is sample output from the **show smrp port** command:

```
Router# show smrp port
```

■ show smrp port

```

SMRP Port Table
Interface      State Network      Type Address  Primary  Secondary
-----
Ethernet2     (P)  20-22          AT   20.2     20.2    20.3
Ethernet3     (P)  30-33          AT   30.2     30.2    0.0
Ethernet4     (S)  40-44          AT   40.3     40.2    40.0

```

The following is sample output from the **show smrp port** command with the **appletalk** keyword and the interface of a specific port:

```

Router# show smrp port appletalk ethernet 2

SMRP Port Table
Interface      State Network      Type Address  Primary  Secondary
-----
Ethernet2     (P)  20-22          AT   20.2     20.2    20.3
Current groups:
Last group:

```

[Table 45](#) describes the fields shown in the displays.

Table 45 *show smrp port Field Descriptions*

Field	Description
Interface	Interface of a specific SMRP port.
State	Current state of the port. Possible states are as follows: <ul style="list-style-type: none"> • (P) —Primary operation • (S) —Secondary operation • (N) —Normal operation • PN.. —Primary negotiation • SN.. —Secondary negotiation • -D- —Down
Network	Network range.
Type	Network protocol type. Currently only AppleTalk (AT) is supported.
Address	Network layer address.
Primary	Address of the primary SMRP router on the local network.
Secondary	Address of the secondary SMRP router on the local network.

Related Commands

Command	Description
test appletalk	Makes SMRP multicast services available over AppleTalk for a specific interface.

show smrp route



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp route** command is not available in Cisco IOS software.

To display all entries or specific entries in the Simple Multicast Routing Protocol (SMRP) routing table, use the **show smrp route EXEC** command.

```
show smrp route [appletalk [network] | type number]
```

Syntax Description

appletalk	(Optional) Displays SMRP route table entries for all AppleTalk networks. Currently SMRP services are supported over AppleTalk networks only.
<i>network</i>	(Optional) SMRP network range.
<i>type</i>	(Optional) Interface type.
<i>number</i>	(Optional) Interface number.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

For all SMRP routes, the **show smrp route** command displays the number of SMRP routes in the internetwork. For each route, it shows the SMRP network range of the route, the version of the route, the elapsed time since the route was updated, the number of hops away the route is from the route's origin, the number of hops away the route is from the tunnel origin, the interface from which the route was received, and the router that sent the route.

If a specific network range is given, this information is displayed for that network range only.

If the interface is specified, the routes that came from this interface are displayed.

If the **appletalk** keyword is specified with or without an SMRP network range, the number of SMRP routes in the internetwork is not specified. Connected routes have a hop value of 0 and no address value.

**Note**

Because SMRP is currently supported over AppleTalk networks only, sample output resulting from the **show smrp port** command is the same as output from **show smrp port appletalk** command.

Examples

The following is sample output from the **show smrp route** command:

```
Router# show smrp route
```

```
SMRP Route Table
```

```
5 routes in internet
```

```

Network          Hop Tunnel          Parent
                  Interface        Address
-----
AT 1-1           1    0    Ethernet2        20.3
AT 10-11         1    0    Ethernet2        20.3
AT 20-22         0    0    Ethernet2
AT 40-44         0    0    Ethernet4

```

The following is sample output from the **show smrp route** command with the **appletalk** keyword and a specific SMRP network number within an SMRP network range:

```
Router# show smrp route appletalk 21
```

```

Network          Hop Tunnel          Parent
                  Interface        Address
-----
AT 20-22         0    0    Ethernet2        20.3

```

```
Route version: 0x0000000E
```

```
Elapsed update time: 00:23:55
```

The following is sample output from the **show smrp route** command for a specific interface:

```
Router# show smrp route appletalk ethernet 2
```

```

Network          Hop Tunnel          Parent
                  Interface        Address
-----
AT 1-1           1    0    Ethernet2        20.3
AT 10-11         1    0    Ethernet2        20.3
AT 20-22         0    0    Ethernet2

```

[Table 46](#) describes the fields shown in the displays.

Table 46 *show smrp route Field Descriptions*

Field	Description
Network	SMRP network range (the route). "AT" indicates that this is an AppleTalk network.
Hop	Number of hops away from origin.
Tunnel	Number of hops away from the origin of this tunnel.
Parent Interface	Interface from which the route was received.

Table 46 *show smrp route Field Descriptions*

Field	Description
Parent Address	Address of the router that sent this route.
Route version	Version number of a route. If the route version is greater than the neighbor's route version, then the route will be sent to that neighbor.
Elapsed update time	Time elapsed since the route was last updated.

show smrp traffic



Note

Effective with Cisco IOS Release 15.0(1)M, the **show smrp traffic** command is not available in Cisco IOS software.

To display all entries or specific entries in the Simple Multicast Routing Protocol (SMRP) traffic table, use the **show smrp traffic EXEC** command.

```
show smrp traffic [all | group | neighbor | port | route | transaction]
```

Syntax Description

all	(Optional) Displays SMRP traffic for SMRP groups, neighbors, ports, routes, and transactions.
group	(Optional) Displays SMRP traffic for SMRP groups.
neighbor	(Optional) Displays SMRP traffic for neighbors.
port	(Optional) Displays SMRP traffic for ports.
route	(Optional) Displays SMRP traffic for routes.
transaction	(Optional) Displays SMRP traffic for transactions.

Command Modes

EXEC

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

To display general SMRP statistics, use the **show smrp traffic** command without keywords. To display traffic for all of the categories defined by the keywords, use the **show smrp traffic all** command. To display traffic for a specific category, specify the command and the keyword for the category.

Examples

The following is sample output from the **show smrp traffic all** command:

```
Router# show smrp traffic all

SMRP statistics:
  Rcvd:  350 total, 99 hellos, 0 mc data, 0 fast handled
         78 requests, 127 confirms, 1 reject
```

```

    3 primaries, 6 secondaries
    7 notifies, 2 distance vectors
    3 create groups, 0 delete groups
    4 join groups, 0 leave groups
    54 members
    0 add group entries, 0 remove group entries
    0 locates, 0 tunnels
Sent: 547 total, 307 hellos
    0 duplicate mc data, 0 mc data, 0 fast forwarded
    176 requests, 62 confirms, 2 rejects
    3 primaries, 3 secondaries
    6 notifies, 1 distance vector
    0 joins, 0 leaves
    42 creators, 81 members
    0 add group entries, 0 remove group entries
Misc: 0 no buffers, 0 no forwards
    0 bad portids, 0 port downs
    0 bad versions, 0 runts
    0 bad packet types, 0 input errors

SMRP group statistics:
  Groups: 3 added, 0 removed,
  Forwards: 3 new, 1 recycled, 0 deleted
  Child Ports: 4 added, 1 freed,
  Misc: 0 range fulls, 0 not primary drops
        0 no routes

SMRP port statistics:
  Ports: 3 new, 0 recycled, 0 deleted

SMRP route statistics:
  Routes: 5 new, 0 recycled, 0 deleted
  Neighbor AT 20.3:
    1 received updates, 1 send updates
    3 received routes, 0 sent routes
    0 poisoned, 0 improved
    0 better parent interfaces, 0 worst parent interfaces
    0 better parent addresses, 0 worst parent addresses
    0 bad ranges, 0 overlaps

SMRP transaction statistics:
  Requests: 5 new, 135 recycled
            0 deleted, 0 freed
            9 timeouts, 36 resends
            0 duplicates, 0 incomplete duplicates
  Responses: 16 new, 62 recycled, 0 freed
             0 deleted, 0 freed
             0 unexpected, 0 bad

```

Table 47 describes the fields shown in the display.

Table 47 *show smrp traffic Field Descriptions*

Field	Description
SMRP Statistics:	
Rcvd:	
total	Total number of SMRP packets received.
hellos	Number of hello packets received from neighbors.
mc data	Number of packets of multicast data received.

Table 47 *show smrp traffic Field Descriptions (continued)*

Field	Description
fast handled	Number of input packets handled by the SMRP fast-switching function.
requests	Number of request transactions received from neighbors.
confirms	Number of confirm response transactions received.
reject	Number of reject response transactions received.
primaries	Number of primary request packets received.
secondaries	Number of secondary request packets received.
notifies	Number of notify packets received. A router sends a notify packet when it becomes an SMRP primary, secondary, or normal router. A router in normal operation mode can become a secondary router and a router in secondary operation mode can become a primary router.
distance vectors	Number of route update packets received.
create groups	Number of create group packets received from the creator endpoint when it requests to create a group.
delete groups	Number of delete group packets received. These packets are sent when a group is deleted.
join groups	Number of join-group packets received. These packets are sent when members join a group.
leave groups	Number of leave-group packets received. These packets are sent when members leave a group.
members	Number of member-request packets for polling group members received.
add group entries	Number of packets received to add group entries.
remove group entries	Number of packets received to remove group entries.
locates	Number of locate packets received. Endpoints send locate packets to find the SMRP router on the local network.
tunnels	Number of SMRP tunnel packets received.
Sent:	
total	Total number of SMRP packets sent.
hellos	Number of hello packets sent to neighbors.
duplicate mc data	Number of packets of multicast data duplicated and forwarded.
mc data	Number of packets of multicast data forwarded.
fast forwarded	Number of packets that were fast-switched out of the fast-switch enabled interface.
requests	Number of request transaction packets sent to neighbors.
confirms	Number of confirm responses sent.
rejects	Number of reject responses sent.
primaries	Number of primary request packets sent.

Table 47 *show smrp traffic Field Descriptions (continued)*

Field	Description
secondaries	Number of secondary request packets sent. These are sent in attempt to become the secondary router.
notifies	The number of notify packets sent. A router sends a notify packet when it becomes an SMRP primary, secondary, or normal router. A router in normal operation mode can become a secondary router and a router in secondary operation mode can become a primary router.
distance vectors	Number of route-update packets sent.
joins	Number of join-group packets sent. These packets are sent when members join a group.
leaves	Number of leave-group packets sent. These packets are sent when members leave a group.
creators	Number of creator-request packets sent to poll the creator endpoint to verify that it is still active.
members	Number of member request packets sent for polling group members.
add group entries	Number of packets sent to the secondary router to add group entries.
remove group entries	Number of packets sent to the secondary router to remove group entries.
Misc:	
no buffers	Number of times no system buffers available condition occurred. Memory allocation failure.
no forwards	Number of packets for which there was no entry in the forwarding table for the packet's destination.
bad portids	Number of packets with invalid port IDs.
port downs	Number of packets for ports that were down.
bad versions	Number of packets with the wrong SMRP protocol version number.
runts	Number of truncated packet.
bad packet types	Number of packets with invalid type field values.
input errors	Number of packets received that failed network layer packet validation.
SMRP group statistics:	
Groups:	
added	Number of groups added.
removed	Number of groups removed.
Forwards:	
new	Number of new entries created in the forwarding table.
recycled	Number of forwarding table entries that were recycled.

Table 47 *show smrp traffic Field Descriptions (continued)*

Field	Description
deleted	Number of forwarding table entries that were deleted.
Child Ports:	
added	Number of child ports added to the forwarding table entries.
freed	Number of child ports removed from the forwarding table entries.
Misc:	
range fulls	Number of times attempts were made to create SMRP groups after the range of available SMRP addresses was exhausted. The number of SMRP group addresses available equals the SMRP network range times 254.
not primary drops	Number of packets received and dropped because this router is not the SMRP primary router and, therefore, not responsible for the packets.
no routes	Number of times a route to the creator endpoint was not found in the routing table.
SMRP port statistics:	
Ports:	
SMRP port traffic information	
new	Number of new port entries added to the SMRP port table.
recycled	Number of recycled port entries added to the SMRP port table.
deleted	Number of port entries deleted from the SMRP port table.
SMRP route statistics:	
Routes:	
Neighbor route statistics.	
new	Number of new entries added to the SMRP routing table.
recycled	Number of recycled entries added to the SMRP routing table.
deleted	Number of entries deleted from the SMRP routing table.
Neighbor AT	
AppleTalk neighbor information.	
received updates	For each SMRP neighbor, the number of distance vector (routing update) packets received.
sent updates	For each SMRP neighbor, the number of distance vector (routing update) packets sent.
received routes	For each SMRP neighbor, the number of routes received.
sent routes	For each SMRP neighbor, the number of routes sent.
poisoned	Number of bad routes (with 255 hops) received in distance vector packets.
improved	Number of routes improved through updates received in distance vector packets.

Table 47 *show smrp traffic Field Descriptions (continued)*

Field	Description
better parent interfaces	Number of times the Cisco IOS software switches to a better parent interface when a tie condition exists. A tie exists when both routes have equal hop counts. A tie is broken by choosing the neighbor with the higher network address.
worst parent interfaces	Number of times the software does not switch interfaces in a tie condition. The software assesses a tie between two interfaces to choose the interface for the route when the hop count of both routes is equal. A tie is broken by choosing the neighbor with the higher network address.
better parent addresses	Number of times this software wins a tie to forward a packet when a tie condition exists. A tie condition occurs when two routers on the same local net have routes to the packet's destination with the same hop count. Whichever router has the highest network address wins and forwards the packet.
worst parent addresses	Number of times this software loses a tie to forward a packet when a tie condition exists. A tie condition occurs when two routers on the same local net have routes to the packet's destination with the same hop count. Whichever router has the highest network address wins and forwards the packet.
bad ranges	Number of times an invalid SMRP network range was received.
overlaps	Number of times an incoming SMRP network range overlapped with an existing SMRP routing entry.
SMRP transaction statistics:	
Requests:	
new	Number of new requests created.
recycled	Number of recycled requests.
deleted	Number of times data was allocated for requests.
freed	Number of times deleted requests are freed.
timeouts	Number of times requests timed out.
resends	Number of times requests were resent.
duplicates	Number of times a processed request arrived.
incomplete duplicates	Number of times requests were received while in incomplete state.
Responses:	
new	Number of new responses created.
recycled	Number of recycled responses.
freed	Number of freed responses.
deleted	Number of times data was allocated for responses.
freed	Number of times deleted responses are freed.

Table 47 *show smrp traffic Field Descriptions (continued)*

Field	Description
unexpected	Number of unexpected responses.
bad	Number of bad responses.

smrp mroute-cache protocol appletalk



Note

Effective with Cisco IOS Release 15.0(1)M, the **smrp mroute-cache protocol appletalk** command is not available in Cisco IOS software.

To enable Simple Multicast Routing Protocol (SMRP) fast-switching on a port, use the **smrp mroute-cache protocol appletalk** interface configuration command. To disable SMRP fast-switching, use the **no** form of this command.

smrp mroute-cache protocol appletalk

no smrp mroute-cache protocol appletalk

Syntax Description

This command has no arguments or keywords.

Defaults

Enabled

Command Modes

Interface configuration

Command History

Release	Modification
11.1	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

By default, fast-switching is enabled on all SMRP ports. A network protocol and interface comprise an SMRP port. Fast switching improves the throughput rate by processing incoming packets more quickly than process switching.

SMRP uses the forwarding table to forward packets for a particular SMRP group. For each group, the forwarding table lists the parent interface and address and one or more child interfaces and addresses. When data for an SMRP group arrives on the parent interface, the router forwards it to each child interface. The SMRP fast-switching cache table specifies whether to fast switch SMRP data packets out the interfaces specified by the forwarding table.

SMRP fast switching requires that:

- A parent port is fast-switch enabled.

- One or more child ports are fast-switch enabled.

When the parent port is fast-switch enabled, the system populates and validates a fast-switching cache table when forwarding packets out child ports.

To populate the fast-switching cache table with fast-switching information, the first packets are process switched. Thus, the fast-switching cache table is populated with information about fast-switch enabled child ports. When succeeding packets arrive, the system uses the SMRP fast-switching cache table to fast switch the packets out those child ports.

If there are non-fast-switching ports in the forwarding table, then the system process switches the packet out those ports.

To validate the fast-switching cache table, the system validates each cache entry when it forwards the first packet out all child ports. If a cache entry is validated, the router can use the entry to fast switch succeeding packets out the child ports.

If a cache entry is invalidated, the router cannot use the entry to fast switch packets. The entry is removed from the fast-switching cache table and the router process switches packets out the child ports. A cache entry is invalidated when one of these conditions is met:

- A child endpoint leaves the SMRP group.
- A new child endpoint joins the SMRP group.
- A port's fast-switching configuration is enabled or disabled.
- A port is restarted.

Examples

The following example disables SMRP fast-switching:

```
no smrp mroute-cache protocol appletalk
```

smrp protocol appletalk



Note

Effective with Cisco IOS Release 15.0(1)M, the **smrp rprotocol appletalk** command is not available in Cisco IOS software.

To make Simple Multicast Routing Protocol (SMRP) multicast services available over AppleTalk for a specific interface, use the **smrp protocol appletalk** interface configuration command. To disable SMRP over AppleTalk for a specific interface, use the **no** form of this command.

```
smrp protocol appletalk [network-range beginning-end]
```

```
no smrp protocol appletalk [network-range beginning-end]
```

Syntax Description

network-range	(Optional) SMRP network range for the interface. We recommend that you do not specify an SMRP network range. When you omit the range, the Cisco IOS software uses the AppleTalk cable range configured for the interface as the SMRP network range. If you specify a range, it must fall within the SMRP network range 1 to 65,535.
<i>beginning-end</i>	(Optional) The beginning and end of the SMRP network range for this AppleTalk network. If you specify a range, it must fall within the SMRP network range 1 to 65,535.

Defaults

SMRP is disabled.

Command Modes

Interface configuration

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

SMRP supports point-to-multipoint multicasting of packets for AppleTalk networks. This support provides the capability of sending data from a single source to multiple stations without having to send duplicate copies of the data.

The **smrp protocol appletalk** command configures SMRP support over an AppleTalk network on an interface basis. Before you use this command, you must issue the **smrp routing** command to enable SMRP. After you enable SMRP, you can use this command to make SMRP services available over AppleTalk for any number of individual interfaces.

We recommend that you do not specify an SMRP network range for the AppleTalk network. Because the upper limit of the AppleTalk network range is 65,535, AppleTalk network numbers always fit within the SMRP network range; SMRP network numbers are 3 bytes long, whereas AppleTalk network numbers are 2 bytes long. If the AppleTalk network is a nonextended network, which is defined by a single network number, the AppleTalk network is mapped to the SMRP network range using the single number to define both ends of the range (for example, 65,520-65,520).

To disable SMRP services for a specific AppleTalk network, use the **no** form of this command. To disable SMRP services globally (that is, for all AppleTalk networks whose interfaces you have configured for SMRP support) issue the **no smrp routing** command.

Examples

The following example enables SMRP globally and turns on SMRP support over AppleTalk for the current interface:

```
smrp routing
interface ethernet 0
  smrp protocol appletalk
```

The following example disables SMRP over AppleTalk for the current interface:

```
interface ethernet 0
  no smrp protocol appletalk
```

Related Commands

Command	Description
show smrp port	Displays all entries or specific entries in the SMRP port table.
test appletalk	Enables the use of the multicast transport services provided by the SMRP.

smrp routing



Note

Effective with Cisco IOS Release 15.0(1)M, the **smrp routing** command is not available in Cisco IOS software.

To enable the use of the multicast transport services provided by the Simple Multicast Routing Protocol (SMRP), use the **smrp routing** global configuration command. To disable SMRP services for all interfaces, use the **no** form of this command.

smrp routing

no smrp routing

Syntax Description

This command has no arguments or keywords.

Defaults

SMRP is disabled.

Command Modes

Global configuration

Command History

Release	Modification
11.0	This command was introduced.
12.2(13)T	This command is no longer supported in Cisco IOS Mainline releases or in Technology-based (T-train) releases. It might continue to appear in 12.2S-family releases.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

Currently, SMRP services are supported over AppleTalk only. The **smrp routing** command enables the use of SMRP. To enable SMRP for an AppleTalk network over a specific interface, you must use the **smrp protocol appletalk** interface configuration command after you issue this command. The **smrp routing** command has no effect until you enable SMRP at the interface level.

Examples

The following example enables SMRP:

```
smrp routing
```

The following example disables SMRP:

```
no smrp routing
```

Related Commands	Command	Description
	test appletalk	Makes SMRP multicast services available over AppleTalk for a specific interface.

test appletalk



Note

Effective with Cisco IOS Release 15.0(1)M, the **test appletalk** command is not available in Cisco IOS software.

To enter the test mode, use the **test appletalk** command in privileged EXEC mode.

test appletalk

Syntax Description

This command has no arguments or keywords.

Command Modes

Privileged EXEC

Command History

Release	Modification
11.1	This command was introduced.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2SX	This command is supported in the Cisco IOS Release 12.2SX train. Support in a specific 12.2SX release of this train depends on your feature set, platform, and platform hardware.
15.0(1)M	This command was removed.

Usage Guidelines

Use the **test appletalk** command to enter test mode. From test mode you can test the Name Binding Protocol (NBP) protocol.

The following display shows how to enter Appletalk test mode:

```
Router# test appletalk
Router(atalk test)#
```

Type **?** to display the following list of test options:

```
Router(atalk test)# ?
end      Exit AppleTalk test mode
nbp     AppleTalk NBP test commands
```

Use the **test appletalk** command with the **nbp** options to test and to perform informational lookups of NBP-registered entities. Use the NBP options when you find that AppleTalk zones are listed in the Chooser, but services in these zones are unavailable.

Type **nbp ?** to learn what NBP test commands you can use:

```
Router(atalk test)# nbp ?
nbp confirm:      send out an NBP confirm packet to the specified entity
nbp lookup:       lookup an NVE. prompt for name, type and zone
nbp parameters:  display/change lookup parms (ntimes, nsecs, interval)
nbp poll:         for every zone, lookup all devices, using default
?:               print command list
end:             exit nbptest
```

The following list summarizes the **nbp** test commands you can use:

- **nbp confirm**—Sends out an NBP confirm packet to the specified entity.
- **nbp lookup**—Searches for NBP entities in a specific zone.
- **nbp parameters**—Sets the parameters used in subsequent lookup and pool tests.
- **nbp poll**—Searches for all devices in all zones.
- **?**—Displays the list of **nbp** tests.
- **end**—Exit from the **nbp** test commands.

The remainder of this section shows and explains the syntax and output of the various NBP test commands.

When running any of the NBP tests, you specify a nonprinting character by entering a three-character string that is the hexadecimal equivalent of the character. For example, type **:c5** to specify the test appletalk truncation wildcard.

This is the syntax of the **nbp confirm** command:

```
nbp confirm appletalk-address [:skt] object:type@zone
```

The syntax description is as follows:

<i>appletalk-address</i>	AppleTalk network address in the form <i>network.node</i> . The argument <i>network</i> is the 16-bit network number in the range 1 to 65,279. The argument <i>node</i> is the 8-bit node number in the range 0 to 254. Both numbers are decimal.
<i>:skt</i>	(Optional) Name of socket.
<i>object:type</i>	Name of device and the type of service. The colon (:) between <i>object</i> and <i>type</i> is required.
<i>@zone</i>	Name of the AppleTalk zone where the entity <i>object:type</i> resides.

Examples

The following is sample output from the **nbp confirm** command. In this example, the test sends a confirm packet to the entity *ciscoRouter* in zone *Engineering*.

```
Router(ataalk test)# nbp confirm 24279.173 my-mac:AFPServer@Engineering
confirmed my-mac:AFPServer@Engineering at 24279n,173a,250s
```

This is the syntax of the **nbp lookup** command:

```
nbp lookup object:type@zone
```

The syntax description is as follows:

<i>object:type</i>	Name of device and the type of service. The colon (:) between <i>object</i> and <i>type</i> is required.
<i>@zone</i>	Name of the AppleTalk zone where the entity <i>object:type</i> resides.

The following is sample output from the **nbp lookup** command:

```
Router(ataalk test)# nbp lookup =:macintosh:c5@engineering
```



```
(100n,50a,253s)[1]: `userA:Macintosh IIcx@engineering`
(100n,16a,251s)[1]: `userB:Macintosh II@engineering`
(200n,24a,253s)[1]: `userC:Macintosh IIci@engineering`
(200n,36a,251s)[1]: `userD:Macintosh II@engineering`
(300n,21a,252s)[1]: `userE:Macintosh SE/30@engineering`
test appletalk lookup request timed out
Processed 6 replies, 7 events
```

Table 48 describes the fields shown in the display.

Table 48 *nbp lookup Field Descriptions*

Field	Description
(100n,50a,253s) [1]	AppleTalk DDP address of the registered entity, in the format network, node address, and socket number. The number in brackets is either the current value of the field (if this is the first time you have invoked nbptest) or the value the field had the last time you invoked nbptest .
'userA:Macintosh IIcx@engineering'	NBP enumerator:NBP entity string of the registered entity.
test appletalk lookup request timed out	Indicates whether replies were heard within the timeout interval.
Processed 6 replies, 7 events	Number of NBP replies received.

This is the syntax of the **nbp parameters** command:

nbp parameters *retransmissions replies interval*

The syntax description is as follows:

<i>retransmissions</i>	Maximum number of lookup retransmissions. This is a number from 1 to 5. The default value is 5.
<i>replies</i>	Maximum number of replies to accept for each lookup. This is a number from 1 to 500. The default is 1.
<i>interval</i>	Interval, in seconds, between each retry. This value is from 1 to 60 seconds. The default is 5 seconds.

The following is sample output of the **nbp parameters** command. In this example, the maximum number of retransmission is 1, the maximum number of replies is 100, and there are 10 seconds between each retry.

```
Router(ataalk test)# nbp parameters 1 100 10
```

The **nbp poll** command has no keywords or arguments. The following is sample output from the **nbp poll** command:

```
Router(ataalk test)# nbp poll

poll: sent 2 lookups
(100n,82a,252s)[1]: `userA:Macintosh IIci@Zone one`
(200n,75a,254s)[1]: `userB:Macintosh IIcx@Zone two`
test appletalk polling completed.
Processed 2 replies, 2 events
```

Table 49 describes the fields shown in the display.

Table 49 *nbp poll Field Descriptions*

Field	Description
poll	Number of lookups the command sent.
(100n,82,252s) [1]	AppleTalk DDP address of the registered entity, in the format network, node address, and socket number. The number in brackets is either the current value of the field (if this is the first time you have invoked nbptest) or the value the field had the last time you invoked nbptest .
'userA:Macintosh IIci@Zone one'	NBP enumerator:NBP entity string of the registered entity.
test appletalk polling completed.	Indicates that the polling completed successfully.
Processed 2 replies, 2 events	Number of NBP replies received.

The following example enables the **appletalk nbp polling** command, which does not use any keywords or arguments:

```
Router (atalk test)# nbp poll
```

Related Commands

Command	Description
test flash	Tests Flash memory on MCI and envm Flash EPROM interfaces.
test interfaces	Tests the system interfaces on the modular router.
test memory	Performs a test of Multibus memory (including nonvolatile memory) on the modular router.

