

AppleTalk Frequently Asked Questions

Document ID: 10547

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Introduction

This document addresses common questions about AppleTalk.

Q. When you issue the show appletalk interface command, what do the resultant counters indicate? AppleTalk discarded 4869 packets due to input errors. AppleTalk discarded 4869 packets due to input errors. Are the numbers too high?

A. The output from the **show appletalk interface** command provides these:

Input errors caused by these:

- ◆ A bad Local TalkLink Access Protocol (LLAP) source node (such as, a source address of 255 or a destination address of 0)
- ◆ An invalid Subnetwork Access Protocol/Organizational Unique Identifier (SNAP/OUI) from a packet received over an extended interface
- ◆ A disagreement between the Datagram Delivery Protocol (DDP) size and the total frame size minus the non-DDP frame overhead
- ◆ A DDP length greater than 599 bytes
- ◆ A DDP length greater than 599 bytes
- ◆ No route is set for the packet
- ◆ The DDP hop count of the packet is greater than 15

Output errors caused by these:

- ◆ No AppleTalk Address Resolution Protocol (AARP) entry for the destination address
- ◆ The packet could not be sent (no AARP entry, controller error, some lower-level software returned a nyet to a talk_send())

The exec command **show appletalk traffic** from the AppleTalk Commands provides a detailed breakdown of these errors. If the router has operated for six months, then these numbers are acceptable. Otherwise, there can be a problem.

Q. What is an AppleTalk II seed router?

A. A seedrouter is a router with a configuration that is entered by the network administrator. It does not use any other configuration. It does, however, verify the stored configuration against that of nearby operational routers. If there is a conflict, the port does not come up.

Q. Can more than one seed router exist on a network? If yes, what are the precautions?

A. You can have one or all routers on a cable as seed routers. A non-seed router requires a seed router for the correct cable configuration. The cable-range, default zone, and zone list (name and number) must match from seed router to seed router. Once operational, seeded and non-seeded nearby routers behave identically. Either type router can answer a **ZIP GetNetInfo** request from a nearby router.

Q. Does AppleTalk loadshare between two equal-cost links?

A. AppleTalk does not loadshare between equal cost paths. If there are equal hop paths, the source router uses one path, and the destination router uses a second path in response. This

occurs because Routing Table Management Protocol (RTMP) from the source router sends updates on the first path and then on second path. The destination router receives the last update from the second path and sends the reply back on the second path rather than first path.

Enhanced Interior Gateway Routing Protocol (EIGRP), since it does not use hop-based metrics, does not value 19.2 kbps and T1 as equal. EIGRP always uses the T1 because it has better metrics than 19.2 kbps.

Q. How do I disconnect idle AppleShare servers in an AppleTalk DDR?

A. In order to allow dial-on-demand links to idle out, you must force a disconnect of the idle mounted volumes. You can use the Unmounter Agent on a client Macintosh to disconnect idle AppleShare servers and allow AppleTalk DDR sessions to idle out.

The Unmounter Agent is a Macintosh OS faceless application (no INIT code and no patches) that detects AppleShare volumes that are not used for a configurable time. From a server point of view, these volumes are unmounted (just as if they were put in the trash). The Unmounter Agent does not allow the AppleTalk tickles and AppleTalk Filing Protocol (AFP) GetVolumeInfo from to keep the DDR link inappropriately up. The DDR links appear on the desktop as ejected floppies. Double click these icons to remount them transparently. (Use password encryption without PowerTalk.)

Q. Why do I see no zone set for certain routes in the output of the show apple route command? R Net 1510-1510 [2/G] via x.y, 2 sec, Fddi2/0, no zone set. R Net 1523-1523 [2/G] via x.y, 2 sec, Fddi2/0, no zone set.

A. A no zone set message in the output of the **show appletalk route** command means there is a network that has no zone associated with it.

Zones are mapped to networks with the Zone Information Protocol (ZIP). Routers use ZIP request and reply packets to associate these zones with routes.

If a router does not respond to the ZIP request, it can be for one or more of these reasons:

- ◆ There is a ZIP reply filter set on one of the routers. You need to edit or remove these filters as necessary. For more details, see Step 6 under the How do I troubleshoot a Zip Storm on an AppleTalk network? section of this document.
- ◆ The ZIP request or reply is lost somewhere in the path between the two routers. ZIP is not announced periodically. Routers make ZIP requests only when a new (or previously aged-out) network appears on the internetwork, so if the request or the reply is lost it can possibly result in a No zone set message. In order to fix the problem, try these steps:
 1. Disable AppleTalk on all router interfaces with the global **no appletalk routing** command. Wait approximately 10 minutes. This allows all routers in the internetwork to age out the network number from their routing tables.
 2. Re-enable AppleTalk on all interfaces with the global **appletalk routing** command.
 3. If the **show appletalk route** command still displays no zone set, reload the router.

- ◆ A ZIP storm is in progress. A ZIP storm occurs when a router propagates a route for which it currently has no correspondent zone name; the route is then propagated by downstream routers. In order to troubleshoot this problem, issue the **show** and **debug** commands and follow the same steps listed in the How do I troubleshoot a Zip Storm on an AppleTalk network? section of this document.

Q. How do I troubleshoot Zip Storm on an AppleTalk network?

A. In order to fix a node that does not respond to ZIP requests, follow these steps:

1. Issue the **debug apple zip** command and identify the network for the zone requested by nearby routers.
2. Identify the router that causes the excessive ZIP traffic.
3. Issue the **show appletalk route** command to view the AppleTalk routing table.
4. Verify that a network exists in the routing table even when the display shows that no zone is set. If you find a network where no zone is set, a node on that network is probably not able to respond to **ZIP** requests and causes the **ZIP** storm.
5. Determine why the node does not respond to **ZIP** requests. Access lists or other filters might be the cause.
6. In order to locate a problem access list or filter, apply one AppleTalk filter at a time with these commands until you can no longer create connections:

```
◇ appletalk access-group [access list number]
◇ appletalk distribute-list [access list number] in
◇ appletalk distribute-list [access list number] out
◇ appletalk getzonelist-filter [access list number]
◇ appletalk zip-reply-filter [access list number]
```

7. For the access list that prevents connections, check each access-list statement to determine if it blocks needed traffic, such as zone names, cable range, or device. If so, configure an explicit permit statement for traffic that you want forwarded normally. Next reapply the AppleTalk filter that uses the access list and verify that the new access list permits connection.
8. Continue to test access lists until all filters are enabled and the client connects to the server.

ZIP storms can also result from a defective software that runs on the node. Contact your vendor for known problems.

Q. When I try the show apple interface command, why does one of my interfaces have the message: Port configuration mismatch. Port configuration conflicts with x.y.?

A. This message indicates that the Cisco router detected another AppleTalk router on that interface with a configuration different from that of the Cisco. One of the primary rules for AppleTalk is that all routers that share a network must use the same configuration for that network. This includes the cable-range or network numbers used, the default, or primary zone, and the names of each of the other zones.

Q. When I try to set up a serial line for AppleTalk, why does it only work if I use the command appletalk address x.y [non-extended addressing] and not when I try appletalk cable-range x-x [extended addressing]?

A. You probably have a version of Cisco software earlier than 8.3(1). Cisco supported only non-extended AppleTalk on serial lines prior to that. Also, certain encapsulation types (such as X.25) require that you configure the line non-extended.

Q. I added a new zone name to a current Phase 2 network. Why do I see it on a Macintosh that is directly on that cable, while a Macintosh in the other parts of the network does not recognize the zones?

A. AppleTalk does not really have a mechanism to update zone information. The new zone you added has not propagated to the rest of the network. There are two ways to force it to do so:

1. Change the network number at the same time you change the zone list.
2. Disable AppleTalk (or shut routers down if necessary) for all the routers that feed into that network. Leave them down for a period of about 10 minutes, and then bring them back up.

[Both of these techniques force all routers on the network to "age" or delete the route from their routing tables. When the route comes back up, the routers request the new zone list for that network, and the new zone information must then be propagated.]

Q. I just upgraded the AppleTalk Phase 2. Why can I not see one of my VAX-based AppleShare servers?

A. Earlier versions of Pathworks support only Phase 1-style NBP Broadcast requests. Either upgrade the Pathworks software, or use the proxy-NBP feature available in Cisco software versions 8.3 and above.

Q. I just installed a LaserWriter IItr; why can I not see it past one of the Cisco routers?

A. Unfortunately, the LaserWriter IItr does not properly support the use of the checksum field in the DDP (AppleTalk) protocol. Use the global command **no appletalk checksum** to disable checksum calculations on the Cisco router, and the printer will become visible.

Q. Will Frame Relay work with AppleTalk?

A. Yes, Cisco supports AppleTalk over Frame Relay, but, like most desktop LAN protocols, AppleTalk supports (in fact, requires) the "split-horizon" process of RTMP (routing) updates. This requires that the Frame Relay network be completely "meshed." (In other words, all routers must have a DLCI connection to all other routers within the Frame Relay cloud.)

Q. Can a Cisco router do a transition bridge (Phase 1 to Phase 2) like other AppleTalk routers?

A. Yes and no, some other routers, notably the Shiva Fastpath and the Cayman Gatorbox, support a transition bridge with a single interface; that is, the interface can be configured for both an extended and a non-extended network at the same time. On the Cisco router, we support only a single network definition for each interface, but you can accomplish the same effect if you attach two interfaces to the same Ethernet segment and configure one for extended operation (that is, Apple cable-range) and the other for non-extended (that is, Apple address) operation.

Q. When I try show appletalk zones, why do I see colons (:) and numbers in some of the zone names?

A. Because we only support an ASCII terminal interface to the router, the use of extended, non-ASCII characters in a zone name (like the "Apple" symbol) causes us to display those characters in hexadecimal notation.

Q. Why does nothing happen when I use the clear apple routes command?

A. Unfortunately, these commands were never implemented as described in the documentation.

Q. I have configured an interface to use ARPA encapsulation, but I want to run AppleTalk Phase 2, which I understand is SNAP encapsulated. How do I specify two kinds of encapsulation on the interface?

A. You do not have to. The router automatically adjusts its encapsulation type for the appropriate protocol. The encapsulation command is used to change the default encapsulation.

Q. When I try the command show apple traffic, why do I see an entry for martians, and why is it increasing?

A. Martians are packets that are sourced from networks for which we do not have an entry in the routing table. This normally occurs when a device is moved from one network to another. If you see a large number of them and the number is increasing, this can be an indication that a device is misconfigured.

Q. I configured the Cisco for discovery mode; why does it still provide seed information to other routers?

A. The definition of seed routing can cause confusion. The terms "seed" and "discovery" apply only to the operation of the router in its startup period (before it has become operational). Once operational, all AppleTalk routers provide "seed" information to any routers that starts up in "non-seed" or "discovery" mode.

Q. When I try to configure an interface for Phase 2, why do I get a message that says port violates internet compatibility mode?

A. The Cisco router has detected that a nearby router requires that the internet remain in what is known as "internet compatibility" mode. This results when you have a mixture of Phase 1 and Phase 2 routers on your internet.

Note: A Phase 1 router is one that supports only Phase 1 routing; a Phase 2 router with non-extended interfaces is still a Phase 2 router.

Q. Customer cannot get AppleTalk to work with the chooser, and the client claims that no ZIP information gets to his client in a network with a Catalyst 5000 switch.

A. The Catalyst 4000 and 6000 work fine with this feature, but, in the Catalyst 5000, there are hardware limitations. No local chooser traffic appears on the LAN. The chooser does not respond with anything in it in a network that uses a Catalyst 5000 switch. The workaround is to disable the protocols on the ports, which are connected to AppleTalk clients that use the **set port protocol** command. You can see the protocol enable/disable status for a port if you issue the **show port protocol** command.

Refer to the Catalyst 5000 Switch and ROM Monitor Commands Guide for the details of these commands.

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Updated: Oct 04, 2005

Document ID: 10547