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Setting Up A 100Base-T Network: Requirements (5/96)

Article Created: 13 May 1996

TOPIC -----

I'm setting up a Fast Ethernet (100Base-T) network in conjunction with our existing 10Base-T network. I have installed the 100Base-T cards correctly, but am only getting near 10Base-T performance. What could be wrong?

DISCUSSION -----

There are many variables which can affect network performance, as well as some requirements for setting up a 100Base-T or Fast Ethernet network.

First, existing or new cabling should be Category 5 Unshielded Twisted Pair wire (UTP) for optimum performance. Type 1 STP may be used, but will not offer the performance of UTP cable. Also, the diameter of your network must not exceed 205 meters (10Base-T required a maximum diameter of 500 meters).

Next, 100Base-T networks require a 100Base-T compliant hub. If you are going to be replacing your existing 10Base-T network hub, this may require a switchable hub (one that can switch between 10Base-T or 100Base-T) or a hub that has both 10Base-T and 100Base-T connections.

An alternative to a switchable hub is to use a 10/100Base-T bridge between the 10Base-T and 100Base-T segments. This alternative would allow you to add a less expensive non-switching 100Base-T hub for your Fast Ethernet segment and keep your existing non-switching 10Base-T hub. Keeping the two segments separate will also increase overall network bandwidth by separating high traffic and low traffic workgroups.

NOTE: There should be a maximum of one Class 1 hub or two Class 2 hubs (or two repeaters) within the same collision domain.

Client performance may be affected by local activity such as program sharing or other I/O activity like modem, printer, or adb communication. Another factor at the client may be hard drive performance. A typical internal hard drive sustained transfer rate may not be any more than 4 megabytes per second. Reducing the number of concurrent processes and isolating a fast internal hard drive (or providing a disk array) may increase performance.

Finally, driver code may not be fully native - or native to the currently active network architecture. Check with your vendor for more information regarding

driver performance and compatibility with your system software.

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Keywords: <None>

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19960513 15:50:59.00

Tech Info Library Article Number: 19775