



Topic: Network Troubleshooting
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Problem:

Network response is slow and/or workstations appear to “hang” or connection to the server is dropped.

Troubleshooting Suggestions:

There are countless reasons for the type of behavior described. It may be necessary to bring in a network consultant who has special equipment designed to diagnose network problems, but listed below are some much simpler things to check before calling in the professionals. We have seen every one of these issues at SOS customer sites:

- Ÿ Disable screen savers on your server computer. Some screen savers, especially those that feature animation, can be very demanding of the server’s resources, much to the detriment of network functions. After disabling the screen saver, you can simply turn the monitor off when it is not needed.
- Ÿ If the problems started after an upgrade of networking hardware (network interface cards, hub or switch, and/or cabling) to run at a faster speed, you could have defective hardware or your existing cabling may not be adequate to support the faster network speeds. If replacing the high-speed hub or switch with another similar unit does not help, but replacing with a standard 10Base-T hub eliminates the problem, you can be pretty sure that the problem is cabling, or possibly a source of interference in the environment that causes corruption of network communications at the higher speeds.
- Ÿ It is possible for a single bad network card to flood the network with trash, causing problems for everyone else. Use a trial-and-error approach, shutting off workstations one at a time to see if the problem only occurs when a particular workstation is on the network. Be sure to actually turn the workstation off, or unplug it from the network. If a problem station is identified, change the network card in that computer.
- Ÿ A short or bad connection in one or more cables can cause a problem, especially if the bad cable is the one between the server and the hub or switch. It is a good idea to locate the hub or switch near the server and to connect the two with a high quality, manufactured cable with molded ends (as opposed to a hand-made cable). To check the connections on each end observe the lights on the network card and on the hub when you put a little pressure on the connector or wiggle it. If the “link” light falters, you have a problem. If in doubt, replace the cable and/or network card and/or plug into a different port in the hub or switch.
- Ÿ Remove any network protocols that are not actually in use. Some versions of Windows install two or more networking protocols by default. For example, if you intend network communications to be done over TCP/IP (the recommended protocol in most cases), you

should not be loading NetBeui and IPX/SPX protocols on either the server or the workstations. TCP/IP can be a little more involved to configure if your network does not include a DHCP server, but most experts agree that it is the most robust of your protocol options.

- Ÿ Confirm that there is plenty of free disk space on your server's system volume. If there is less than a gigabyte of free disk space on the C: drive, you probably need a larger hard drive. There should also be ample free free disk space on each workstation's system drive. Unless there is sufficient space, your system will not be able to create temporary files that are often needed when running SOS and other applications.
- Ÿ Insufficient RAM will cause serious performance issues. Even a very small practice should have no less than 256 MB, and preferably 512 MB or more of RAM on a server running Windows 2000, Server 2003, or XP. Larger organizations will require proportionally more RAM. On Windows 2000, 2003, and XP you can easily monitor memory usage on the server: press Ctrl-Alt-Delete to bring up Task Manager, then select the **Performance** tab. Watch the memory and CPU usage as your users go about their normal activities. If you see available physical memory fall to 10,000 or less, you must increase the amount of RAM in your system.
- Ÿ Do not attempt to run Microsoft SQL Server and the SOS Sybase database on the same server. Other resource-gobbling applications such as Exchange Server and Internet Information Server should also be disabled. If it is necessary to run any of these large applications, then you should seriously consider moving your SOS database to another computer or upgrading to a multiprocessor server (one containing two or more CPU's). If you are running Microsoft Small Business Server, it is quite likely that you are running one or more of these applications on your server even if you do not use them! If you do not know how to disable the unnecessary applications, have your consultant come in and do it for you. To see the processes that are currently active and the resources (memory and cpu) that each is using, open up Task Manager, then select the **Processes** tab.
- Ÿ Make sure that you have installed all recommended patches and service packs for your operating systems, particularly on the server. Remember to back up before installing operating system updates, preferably by doing a "disaster recovery backup" of the entire operating system volume!
- Ÿ If you have tried the above suggestions without success, be sure to contact SOS for any new information that may be available or for other suggestions the technicians may be able to offer.