

# NETWORK TROUBLESHOOTING – SERVERS

There are many overlapping issues in network troubleshooting on Workstations.

## **Support contract essential**

Troubleshooting server problems is specialist work and we recommend having an agreement with a *network* contractor with engineers trained in the operating system and *hardware* you use.

Very few small organisations have the expertise in-house to deal with server problems but the usual things still apply: document the work carefully and make sure you find out from the engineer what the issue was and how it was fixed - in that way you may be better prepared in future, especially if it was caused by user error.

The knowledgebase articles [Working with a Support Contractor](#) and [What to expect from an IT support contract](#) will help with sourcing a support contractor.

## **Back it up**

Servers are much more reliable than they used to be but disaster can still strike.

Hard disks can fail, for example, and non-mechanical events like fire or water can damage or destroy the equipment.

**The importance of backing up cannot be stressed too highly, but it is *not* enough just to back up.**

It is essential to check that backups are actually running and then make sure you can restore data from them. Organisations have been caught out thinking that the tapes they are religiously putting into the drive every day are doing their job. The tapes may be worn out, not have enough capacity on to back up all data, or the drive may become dirty or worn out.

The Knowledgebase article [Could your IT cope if your office burned down?](#) explores backing up in more detail.

### **Planned downtime**

If you are taking the server down for routine maintenance or upgrading, it is good practice to give users some notice so they can save some files to local hard drives to work on while the server is unavailable. Let them know that any shared databases won't be accessible and, if you are running your own *email server* and web proxy server, that the *Internet* won't be working.

If you can do routine work out of hours then that suits users better - even if it means you giving up a few hours of your weekend - less complaints as well! If you will be undertaking a large upgrade such as installing a new server, *operating system* or hard drive then make it clear what you are doing to users and give

yourself plenty of time - better to over estimate than under estimate how long it will take.

### **Unplanned downtime**

If the server crashes or something happens which requires interrupting the usual smooth daily routine, make sure that users know as soon as possible that there is a problem, and give an approximate idea of how long it might take to fix.

For example, if there is a server issue and you have a 4 hour *service level agreement* time with your contractor, then it represents a minimum of a half day downtime - potentially longer if it is a hardware warranty issue that necessitates a visit from the manufacturer. Given this knowledge your users can make arrangements to do other things (that big pile of filing, for instance). Again it's better to over rather than under estimate... and be prepared to explain the situation to frustrated users.

### **Slow network**

If your users start complaining that the network is slow - that files take a long time to load or emails are arriving late for example - then it's time to do some investigation work.

The server may be acting as a bottleneck, slowing everything to a crawl. Perhaps the server's hard drive is starting to fill up or it has become fragmented. Check the

properties of the disk to see how much free space there is and look at running applications such as Diskkeeper to keep the disk in top condition. You might need to upgrade or add another disk. In such cases it is worth getting an opinion from your support contractor or network expert to see if it is time to replace the whole server. This can turn out more cost effective in the long run. If your server was purchased for a 10-user network and there are now 25 users then more memory is probably required.

Similarly if you are now running a large centralised *database* then that could be taking a large chunk of memory. Adding memory is not difficult but make sure you buy the correct type. It may cost more but it's probably best to buy from the server manufacturer, especially if the server is still under warranty. Bargain basement memory is often more trouble than it is worth - especially for servers. Again ask your support contract for advice.

Other things which may affect the speed of your server could be virus infection (both internally on your network or an outbreak in the outside world which is generating large amounts of email traffic). If you are running a mail server and your security isn't up to scratch, the server may have been taken over to relay *spam*. In these cases you may witness an unusually large amount of disk activity - your support contractor should be able to help with either of these situations.

## **Is the service running**

Servers run *services* or, in the case of Linux servers *daemons* - applications which run in the background and carry out the vital functions of the machine such as handling email, *antivirus* etc. These can be started and stopped by an administrator who is logged on to the server.

Generally the services which the server needs to run are started automatically at start up - there's a list of default services for a Windows 2000 server in this TechTarget article. If something stops working it's worth checking that the appropriate services are all running.

## **Uninterruptable Power Supply (UPS)**

Your UPS is basically a set of rechargeable batteries in a fancy case. As with all rechargeable batteries, eventually they reach a point where they can't hold a charge any longer and need replacing. The lights on the front of the UPS will indicate the state of charge. Sometimes this information can be found through the UPS *monitoring software*. Some UPSs allow user replacement of the batteries, others need returning to the manufacturer. In some cases it is cheaper to buy a new *UPS* than replace the batteries in an old one.

## **Licensing**

If you have a Windows or Novell server then you need to buy client licenses to allow your users to log onto the server. If you don't have enough client licenses you may experience users not being able to login until someone else logs out.

## **Accessing shared drives, folder permissions**

If your users cannot access resources on the file server it may be that permissions for accessing the folder have not been set up correctly. Checking the permissions and security properties of the folder will tell you who can access the folder.

Source: <http://www.ictknowledgebase.org.uk/networktroubleshooting3>