



10 THINGS

YOU SHOULD KNOW
ABOUT YOUR NETWORK

WELCOME

LIKE MOST OF US, YOU DEPEND ON YOUR IT ENVIRONMENT TO KEEP YOUR BUSINESS RUNNING. WHEN COMPUTERS FAIL, OR YOUR NETWORK BECOMES UNRELIABLE, OR A DISASTER HITS, EVERYTHING STOPS IN ITS TRACKS AND VALUABLE PRODUCTIVITY GOES DOWN THE DRAIN.

And that's the purpose of this little booklet: to help you look for bottlenecks and problem areas on your network that can bog down your entire organization. With a bit of preemptive detective work you can make sure that these little holes don't turn into giant ones that sink the ship.



1

Your network is only as fast as the weakest link.

We service a lot of computer networks, and it always surprises us when we go into a site where all of the desktop computers and server are brand-spanking new, but at least one of the Ethernet switches is still using old 10/100 (100BaseTX) technology, instead of Gigabit Ethernet.

Once upon a time, Gigabit switches were exotic and expensive technology . But that was years ago, and today Gigabit is commonplace and cheap.

The problem is that if you still have one or more 10/100 switches in your network, they could be slowing down everything else! And it doesn't need to be that way.

Our customers have seen huge improvements in network speed by moving from old switches to new ones, usually at a very low capital cost.

Better still, in the vast majority of environments, the changeover is completely transparent, apart from the enormous improvement in speed.

If you haven't already done so, it's worth your while to do a quick survey of your network and confirm that you're not still running out-of-date technology . Remember to check out-of-the-way places where someone might have installed a small desktop switch when they ran out of Ethernet outlets.

LOADING...



VERY SLOW

2

Frustration costs money and productivity

"My computer is so slow today!" How often have you heard that when you're on the phone with the gas company or an airline or your appliance service center?

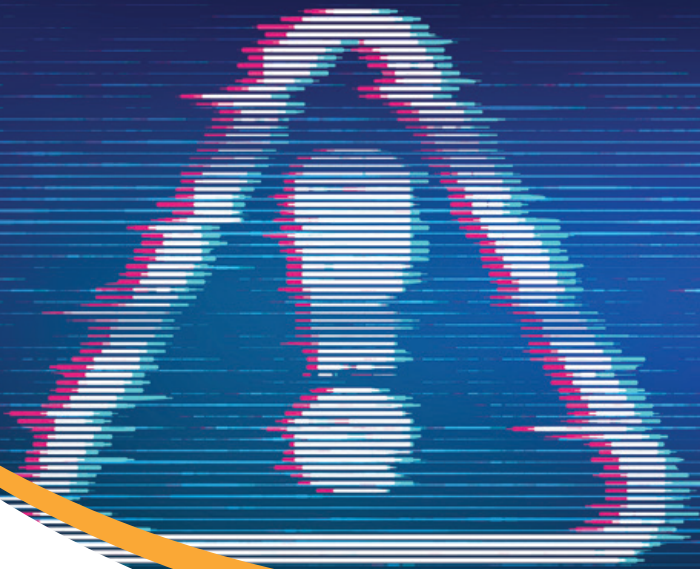
If you're like most of us, you've heard it a lot. But did you ever stop to think that the computer users in your own office may be experiencing the same thing? In many businesses, the computers on people's desks are 3 to 5 years old, sometimes older.

But they're still working, right? True enough, but a computer is not a toaster. Over time, it will slow down as a result of disk fragmentation, software installation and file corruption. And as new versions of software are released, they demand more and more from the computer hardware.

So many of your users may be sitting at their screens, drumming their fingers on the desk while they wait for their computer to respond.

And that costs money! Not only is there wasted time that you'll never get back, but worse still, the frustration factor causes employees to be less productive.

It doesn't have to be that way. New computers are no longer expensive, and the cost of replacing an old computer is often no different from the cost of trying to repair or upgrade it. A one-time capital investment can yield big gains in productivity!



VIRUS ALERT

3

Any virus on your network is a BIG deal

Looks like your computer has a virus . “Well,” you tell yourself, “it’s not the end of the world. I’ll just call the IT guy.” Sometimes it really is that simple. But there are plenty of times when it’s not. Here are some things you should know:

1. Some viruses are designed to spread. Once your computer is infected, they will try to infect other computers on your network . If that happens, it can take days to get rid of the infection.
2. Some infections are so “virulent” that the only solution is to either replace the computer or reload it from scratch.
3. Other viruses (some of which are invisible) can turn your computer into a “zombie”, allowing a remote hacker to take control of your computer to attack other networks.
4. Some viruses generate Spam mail attacks on other servers. This can have the side effect of having your network blacklisted for sending out Spam.
5. And finally, any time a computer is infected and you need to call for IT assistance it’s going to cost the company money .

So obviously, the best solution is not to get infected . Isn’t that what AntiVirus software is for?

Well... it’s not actually that simple. There are many different AntiVirus software products out there. Not all of them are created equal. Some do a better job with certain types of viruses than others. And often, the removal of a stubborn virus can require two or three different products.

The best bet, therefore, is to do the following:

1. Make sure you have an effective Firewall to block at least some of the virus load.
2. Ensure that your email provider has built-in virus and spam protection .
3. Work with your IT service provider to determine the right AntiVirus solution for your organization.
4. Always keep your AntiVirus licenses current and your software up to date.



4

All Firewalls are NOT the same

Seriously, it surprises us how often we encounter businesses who are relying on an \$80 consumer-grade router to secure their business data.

Would you consider your home safe if you protected your front door with a \$2 luggage lock?

But that's pretty much what you're doing if you rely on a device that's designed for home use. If you don't have an Internet connection, never use email, and never plug in a USB drive, CD-ROM or floppy disk (remember those?), then a consumer-grade device is probably fine. Everyone else should start worrying - immediately!

There's more nasty stuff out there than "viruses". There are also: Trojans, Exploits, Spyware, Ransomware, and a whole host of other stuff that you really don't want on your network. An \$80 router from the neighborhood "big-box" store isn't going to stop that stuff. Only a commercial grade Firewall will do that and even then, the best advice is always to "be careful online!"

Besides, do you really want your staff playing online games, or downloading software, or shopping while they work? A high-quality Firewall will stop all of that activity, cold.

The good news is that there are plenty of options out there for business enterprises and that they don't have to be expensive. We particularly like the devices made by Dell SonicWALL, which start at around \$450, but there are lots of other options.

Isn't your critical business infrastructure worth more than \$80?

WHATEVER YOU DO, MAKE SURE THAT YOUR VALUABLE DATA IS PROTECTED.



5

Most backups are worse than useless

Wow! That's a pretty provocative statement. What do we mean by that? Let's take a step backward, and start by talking about the two reasons why you should do backup:

1. The most obvious reason is to protect against a disaster. If your computer has a catastrophic failure, or you experience a fire, flood, earthquake, etc., you need to be sure that you can recover your data.
2. The other, fairly obvious reason is to be able to recover information when it is either intentionally or accidentally deleted.

That seems pretty straightforward. So what would make a backup useless?

1. If you are not taking your backup media to another location on a regular and frequent basis, you might as well stop doing backups right now. If your business experienced a fire and your only viable backup was months old, how would you ever be able to reconstruct your data?
2. Are you testing your backups to see if they work? That's especially important if you're using tape backup. Tapes can be unreliable and they get more so over time.
3. Are you backing up all of your essential data? It still amazes us to find users on corporate networks who insist on saving their files onto their local hard drives instead of on the server, where they can be sure of backup.

4. If you're backing up your files onto hard drive or a USB thumb drive, you are doing yourself a disservice. Part of the reason for backup is to be able to recover missing files. But at best, you might get 3 or 4 copies of your backup on a hard drive. That's not a lot of choice when you're searching for a missing file. And hard drives are a lot bigger and more difficult to take offsite than a tape.

In our opinion, the very best option is **Cloud Backup**. By backing up your files to a secure, offsite service, you end up with the best of all worlds. Your data is guaranteed to be safe and secure. You don't have to worry about taking backup media offsite. And you can recover files whenever you need to.

A final word : why do we say that most backups are **WORSE** than useless?

The answer is simple: if you are relying on your current backups to save you in the event of a disaster and those backups are inherently flawed, then you are deluding yourself and living with a false sense of security. When you most need them, your backups will not be there to save you.

The cost to implement reliable backup is not huge. But the benefits are priceless.



6

One Task = One Server

Today's computers are pretty powerful. So it's a natural temptation to crowd as many things as possible onto a single server. Why not have file-sharing, database management and email on one server. It certainly keeps the costs down. Doesn't it?

Here's the problem. Different applications demand different things from a server. Some applications require more RAM memory, others more disk space. And all of them require different kinds of maintenance at different times.

What happens when your email server stops responding? Rebooting it will probably resolve the problem, but your database users are busy and they can't afford the time to wait around for a reboot. Or what if your database malfunctions and crashes the server. Now all of your email and file-sharing users are down too!

The obvious answer is to put your separate applications onto separate servers, to designate a single server for each logical task. Now you can reboot email without

impacting your database users. We believe that this is the ideal strategy for organizations looking for a reliable, manageable IT environment.

But what about the cost? Even though hardware prices continue to drop, servers are obviously not free.

That's where **Virtualization** changes the equation. Virtualization allows you to run multiple servers on a single hardware platform. By "virtualizing" the hardware, each server will run as a standalone unit and can be managed as such. But in fact, all of your servers are running simultaneously on the same hardware.

Here's another great thing about Virtualization: most of the time, it's free. Unless you have very unusual needs, Virtualization software from industry leaders like **VMware** and **Microsoft** is completely free.

And once your servers are virtualized, moving them from one hardware platform to another is a piece of cake. Simply use the migration utility and you can move your server onto new hardware completely transparently.



7

Consider locking down your computers

Do your users really need to play games at their desks? Or download apps from the Internet? Do they need to change their Windows settings? Or explore your network in their spare time?

In most IT environments, the obvious answer is NO. While it may be okay to use your home computer as a “toy”, you certainly don’t want your staff treating your network that way.

And actually, it’s easy to prevent that.

Microsoft Windows has a feature called “Group Policies”. These policies allow you to very narrowly define what users are allowed to do. You can restrict software installation, lock out Windows features, limit Internet access and create unique profiles for specific groups of users.

Once you’ve locked down your computers, your users will be much less likely to download malicious software or cause other corruption that will necessitate costly IT intervention.

Any capable Windows technician should have the necessary skills to build a set of Group Policies that will work for your organization.



8

Make sure you have adequate power protection

This one seems kind of obvious, but it's amazing how often we walk into a new site and find essential equipment with no power conditioning or a UPS with a battery that is no longer able to hold a charge.

Most of us understand that a server should be protected with an Uninterruptible Power Supply (UPS).

But other equipment is just as important: Ethernet switches, Wireless Access Points, Printers, and telephone equipment are all just as critical to your IT operations. But in many environments, these devices are plugged into standard wall outlets where they may be sharing power with everything from vacuum cleaners to industrial machinery.

And if there's an electrical storm or a sudden power outage, those devices could be permanently damaged, resulting in many hours of lost productivity.

This doesn't have to happen; all you need to protect your valuable peripherals is a small UPS or a surge suppressor. Most of those can be purchased for less than \$100.

Now let's get back to your servers. Chances are pretty good that your servers are connected to a UPS. But here are a few things to think about:

1. Is the UPS powerful enough to support everything plugged into it?
2. How old is the UPS? When was the last time you tested the battery?
3. Does your UPS have online power monitoring capability? Is it connected and working?

A little attention to your power environment goes a long way to ensuring that your equipment remains reliable. Make sure that all of your equipment has power protection and check the batteries regularly. Don't forget about your UPS's, just because they're tucked away in a corner.



9

Not all data belongs in the Cloud

The media is full of stories about “Cloud Computing”. All of the major IT companies – from Microsoft, to IBM to Google – are offering a wide variety of products and services aimed at moving information from local hard drives into the Cloud. Notebook Products like Microsoft Office 365 and Google Apps are at the forefront of this movement.

Many applications are ideal for the cloud, from data backup to document collaboration to salesforce management.

But it’s important to remember that not every application is well suited to the cloud. For example, if you have a large spreadsheet or database, and the software applications that access them run on your local computers, you will find performance to be very slow.

That same concern applies to a wide range of “legacy” software applications that were never designed to run in a cloud environment.

The Cloud can offer you many benefits, but before you jump in with both feet you should explore your needs and your goals with your IT support specialist.



10

The best defense...

...is always a strong offence. We all know that.

How does that apply to your IT environment?

We've already talked about nine steps for improving your networks. But the most important step is to **be proactive**. The biggest mistake that organizations make is waiting until small issues become big ones.

Except that it's not always obvious when those small issues will erupt. Unless you have the time and the skills to check the status of your entire network several times a day, you can't predict where the next problem may arise.

It sounds like an impossible task, but the solution is simple - it's called **Remote Monitoring and Management** Software (or **RMM** for short).

There are many different RMM products, from large companies and small, ranging from simple to extremely sophisticated, and from very expensive to free.

A good RMM tool will automatically alert you when your servers are running low on disk space, when AntiVirus software is out-of-date, when hardware warranties are about to expire, when new software is installed and many other events.

Your IT service provider can work with you to select the tool that matches your needs. For small-to medium sized organizations, we're big fans of a free product called **SpiceWorks**. It provides all of the services described above and many more. But there are plenty of options available, depending on your specific needs and your budget.

No matter what you choose, remember that "a stitch in time save nine!"

10 STEPS TO A HEALTHIER NETWORK

How about a quick review of the topics we've covered, along with our recommendations?

- 1 Networking:** For maximum performance, make sure your entire network uses Gigabit Ethernet Technology. On large networks, consider implementing VLANs (virtual LANs) to segment your network.
- 2 Keep your Technology Current:** Old, unreliable equipment can lower your productivity. For a small capital outlay, you can have a happier, more productive staff.
- 3 AntiVirus Software:** Make sure that every computer in your network is protected with an up-to-date, effective AntiVirus software solution.
- 4 Firewall Protection:** Ensure that your networks are thoroughly protected against costly intrusions. Keep your Firewall software and licenses up to date.
- 5 Backups:** Consider moving your backups to the "Cloud". Or, in the alternative, make sure that you have a comprehensive backup strategy which includes offsite rotation of your backup media. Test your backups regularly.
- 6 One Application = One Server:** Consider separating your applications so that each critical app runs on a separate server. Virtualization from VMware or Microsoft can help control the costs of doing so.
- 7 Lock down computers:** Implementing a Group Security Policy will help you keep your maintenance requirements low and your network at maximum efficiency.
- 8 UPS Protection:** Make sure that all of your critical technology is protected by UPS units with adequate capacity and functioning batteries. Test your UPS' s on a regular basis.
- 9 Use the "Cloud" Judiciously:** The Cloud is very trendy but it's not necessarily the place for every application and data source. Examine and understand your data requirements carefully before migrating to the Cloud.
- 10 Consider Network Monitoring:** Being proactive about monitoring your IT environment will go a long way toward guaranteeing you years of reliable, low-cost operations.

OUR MISSION STATEMENT

IT Support LA's mission is to provide high quality IT services and support to small and medium sized businesses through proactively monitoring and managing their IT infrastructure.

Although they don't like to admit it, most IT consultants are one-trick ponies; they have only one specialty. They're very good at Microsoft Windows, but they don't know much about Linux. Or they know all about Cloud services but have no experience with Voice-over-IP (VoIP).

At IT Support LA, we think differently. Your business has more than one need, so we have more than one skill.

Due to our expertise in Hardware and Managed Services, IT Support LA is the only true Hardware as a Service (HaaS) provider in the country. We have millions of dollars' worth of hardware stock at our immediate disposal which we implement and install for our clients at no additional cost. This allows our clients to use the latest and greatest in technology without the huge capital expense that is normally accompanied by it. In addition to all of this, IT Support LA is the only HaaS provider in the country that does not utilize any contracts on the equipment we provide which allows our customers to be in total control of their infrastructure.

IT Support LA was founded in 2002, located in Los Angeles, we specialize in delivering effective outsourced and Managed IT services which includes hardware, software, and service solutions.

Our clients depend on us to provide a complete IT solution that encompasses desk-side support, help desk services, network management, security, and technology consulting which we strive continuously to exceed our clients' expectations. This is shown by the fact that we don't require our clients to enter into a long-term contract as we will prove the value we bring every day.

In our nearly 20 years of business, we have established solid alliances with the top suppliers in the IT industry. We have strong partnerships with Microsoft, VMware, Cisco, Dell, HP, Ubiquity, QNAP and other partner relationships as well. In addition to this, we have partnerships with many of the industry's best-known niche providers of advanced computer, network hardware and software.

By combining all of these facets together we have the industry contacts and expertise required to help our customers achieve the results they need to power their businesses in the twenty-first century.

Our years of experience in working with business customers means that we are uniquely qualified to understand the needs of our clients and to respond to them in a timely, professional, and responsible fashion.

SUPPORT FROM INDUSTRY CERTIFIED EXPERTS



OUR ACCREDITATIONS





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