

What's the Difference?

Genuine Network Servers

One of the most frequent questions we hear from new clients is "What's so special about a server? What makes it different from a desktop PC?" But think about what a server does that is different from the typical single-user tasks for which a desktop computer is optimized:

Multi-user - Simultaneous requests for data or services come from several sources at once. This changes the way disk activity and network traffic requests work.

Multi-tasking - NT Server, Unixware, and NetWare are truly multitasking, which means that the CPU can work on several jobs at the same time. Motherboard bus speed and (more importantly) bandwidth become critically important here.

High availability - Servers are usually run 24 hours a day, 7 days a week, without being shut down or rebooted. On the other hand, desktop systems might be rebooted several times a day. The need for continuous power supply, error-correcting memory, hot-swappable components, and reliable hard drives grows with the number of users that rely on the server's data availability to do their jobs.

Server-class machines, therefore, are designed with a number of characteristics that desktop computers don't have. There isn't room here to go into detail, but a short feature summary follows:

Faster Hard Drives - SCSI hard drives take advantage of 'elevator seeking', allowing them to retrieve data in a more logical, systematic manner than conventional drives. Much like an elevator will stop at the next closest requested floor, a SCSI drive will retrieve the next closest requested data, then the next, and so on,

regardless of the order in which the requests are made. An ordinary IDE drive will simply retrieve data in the order it is requested. In a multi-user system, elevator seeking improves overall disk-access time and prolongs disk life.

Enhanced Motherboard with Multiple PCI Buses -

The key advantage of server-class architecture versus typical PC architecture is the speed at which it performs its tasks. In any computer, data travels over one or more buses between memory, the CPU, and peripheral devices like SCSI controllers, disk drives and modems. The single most important components of a server-class computer are the multiple PCI buses. The normal shared bus architecture allows multiple adapters to access the computer's processor(s) and memory simultaneously; the number of separate buses on the server's motherboard multiplies this. In addition, the PCI-to-PCI bridge system allows PCI buses to be daisy-chained together, thus supplying faster access to more PCI ports and providing enhanced peripheral performance for each.

Data Protection and Availability - Typical PC architecture offers some small steps to secure your data, but these are limited. Server-class machines can more effectively utilize advanced disk fault tolerance (RAID) technology to keep your 'mission critical' data accessible even in the event of disk failure. Furthermore, some servers include hot-swap capabilities, which allow you to change components like hard drives and PCI cards (e.g. modems), while the machine is still running. Depending on the failure, preparations could be made or restorations carried out during business hours. The redundancy of a growing number of critical components like power supplies and cooling fans, and built-in monitoring tools to warn of impending hardware failures are all intended to minimize downtime as well.

ECC Memory - Much like RAID level 5 for hard drives, Error Correction Code (ECC) memory provides self-correcting fault-tolerant capabilities in RAM. This type of memory virtually eliminates memory errors and the possibility of your server crashing because of them. ▢

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Virus Alert! Kris Virus

One of this virus' features is a payload which activates when an infected file is run on **December 25th**. Kris Virus info can be found at:
<http://vil.nai.com/vil/vpe10255.asp>

Novell BorderManager Offers VPN Opportunities

BorderManager 3 offers excellent virtual private networking (VPN) services, in addition to the firewall and proxy services that have always been available in it. You can use VPN services for three kinds of remote connection:

1. **Site to Site** - Should you wish to enlarge your WAN with remote sites, VPN services allow you to securely connect via the Internet. This is the traditional VPN.
2. **Client/Server** - Individual users can use the Internet to connect to your LAN using a special VPN client. Users must log in to BorderManager before they can access the LAN.
3. **Remote Access** - When there is no Internet connection, users can dial into a modem pool for direct access, authenticated through BorderManager.

Long distance wide area networks are far more affordable using VPN technology over the Internet since the high cost of Frame Relay can now be avoided. ▢

5 Year 2000 Issues – Have you missed any?

Incredible as it may seem, we are still encountering businesses that have done little or nothing to counteract the much-publicized Y2K issues. The following, while not an exhaustive list, is offered as a reminder of some of the issues, and what Nautalex can do to help.

1. **Computer Hardware** – Have you had all your computer hardware tested for Y2K compliance? Contact Nautalex to have a trained technician test all your computer hardware and provide a report.
2. **Operating Systems** – Have you upgraded or applied the necessary patches for Windows95, Windows NT, and Novell NetWare? Nautalex can evaluate your current installations, and help you obtain and apply appropriate upgrades, patches and service packs.
3. **Applications** – Have you identified your “mission critical” applications? Have you contacted the publisher (or visited the publisher’s web site) to ensure that all your applications are Y2K compliant? Have you upgraded where necessary?
4. **Data** – Have you checked (and corrected) your company’s existing spreadsheets and databases which may contain 2-digit dates? Software is available which can rapidly scan directories, search for vulnerable files, and generate a report.

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5. **Contingency Plans** – Let’s say despite all your preparations, systems fail due to circumstances completely beyond your control. Where are you vulnerable: E-mail? EDI? Computer-generated payroll? Phone systems? This list could go on and on. Food for thought: What do you need to do to make sure you can do the basics: get orders, obtain raw materials, provide your product or service, and pay your bills? ▢

Power Problems – Comment

In our article “More on Power Problems” in the Spring 1999 issue of Nautalex News, we said “Add to this the fact that overall city-wide demand for power has grown faster than the available supply, and the result is poor power – often unacceptably poor for computer use.”

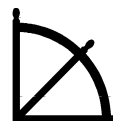
Jon Jarosz, Energy Services Technician at Cambridge and North Dumfries Hydro, was kind enough to contact us about the last sentence in that paragraph. His letter included this statement:

“The following are reliability figures published in the Canadian Electricity Association ‘Service Continuity Report’, 1998:

Cambridge and North Dumfries Hydro:	99.9881%
B.C. Hydro:	99.9597%
Hydro Quebec:	99.1229%
Ontario Hydro:	99.6217%
Canada Total:	99.7476%”

This represents a mere 5 minutes per month of power outage, on average. However, to address power **quality** issues, we still recommend the use of surge suppressors, line conditioners and/or uninterruptible power supplies, particularly for servers. ▢

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Nautalex
Business Services Inc.

200 Avenue Road
Cambridge, Ont. N1R 8H5
Phone: (519) 622-8840
Fax: (519) 624-5580
E-Mail: news@nautalex.com
Web site: www.nautalex.com

Nautalex designs and implements fully-integrated computer network systems for businesses. Providing consulting, software, hardware and peripherals, we offer complete, cost-effective network solutions. ▢

