

STAR Watch

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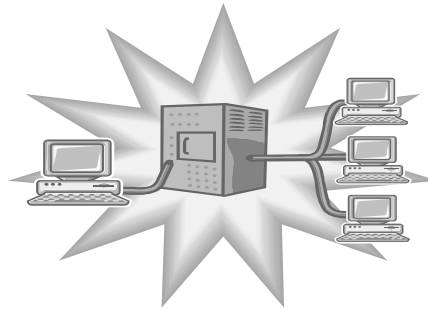
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Double the Capacity: Twin WAN Routers Become Affordable

In a standard hookup, the DSL or cable line connects to a modem, which connects to the WAN port of the router, which connects into the local area network via a hub or switch. In a twin WAN router system, two DSL or cable modem lines, each connected to a separate modem, are connected to the WAN1 and WAN2 ports of the router. The router has only a single connection to the local area network. When users fire up their favorite web browser, the router decides which DSL line to use to connect them to the Internet.



ify the percentage of traffic to be handled by each of the lines. Because of this feature, the bandwidth of the two lines do not have to be identical to achieve load balancing.

- If your organization has its web server in-house, it is not necessary to have a separate network connection on the server for every public IP address. The twin WAN router looks like a single router to the web server.

- Sometimes, ISPs price their services such that buying multiple lower-speed lines is cheaper than buying a single line that equals the combined bandwidth of the lower speed lines. It might actually reduce the cost of Internet service.

Advantages

Twin WAN routers offer organizations options without pillaging the budget:

- If a failure occurs on one line, the router automatically shifts all traffic to the other line. Things might be a little slower, but they don't stop.
- The router can balance the traffic loads between the two lines. These routers allow administrators to spec-



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- Even though each of these routers only has two ports, an organization is not limited to a maximum of two lines. Through the use of multiple twin WAN routers, an organization could combine the bandwidths of any number of DSL or cable services. For example, if an organization wanted to combine the bandwidths of four data lines, lines 1 and 2 would connect to twin router "A" and lines 3 and 4 would connect to twin router B. Routers A and B would be plugged into the WAN ports of twin router C. Router C is connected to the local network.
- The usable bandwidth of a DSL line decreases as the distance from the ISP increases (The maximum line distance for DSL is approx. 18,000 feet). Depending on the distance from the ISP, it may not be possible to get a single data line with enough bandwidth to meet an organization's needs. Combining the bandwidth of multiple slower lines might be a solution.

- URL blocking by address or keywords
- DMZ re-direct all packets from WAN port to specific local IP
- Intrusion Detection
- QoS Bandwidth Control
- DHCP Services
- Remote Management
- VPN Support
- UpnP
- Multiple LAN Ports

Manufacturers, Models and Prices

New twin WAN routers are coming to market every day. The products listed below are representative of what is available today in a variety of features and prices. The prices shown are the lowest prices we found for the product at www.pricegrabber.com and other sources on the Internet. As with all purchases, you must do your own investigation to determine if a specific product will meet your needs.

Other Features

Like single line routers, Twin WAN routers offer a multitude of options. Depending on the make/model of router, not all features listed below will be present on any specific router:

- NAT/Firewall
- Virtual Server for setup local web, email, FTP servers
- Block users' access of specific web sites
- Control users' internet access days & times

Hawking H2BR4	\$57
Xincom XC-DPG402	\$99
BroDigit NFR3024	\$100
Edimax 6524	\$144
Xterasys XR-4106	\$150
Xincom XC-DPG502	\$187
HotBrick HB-LB2	\$189
Linksys-Cisco RV082	\$268
Xincom XC-DPG503	\$309
HotBrick 600/2	\$489
Xincom XC-DPG602	\$629
Xincom XC-DPG603	\$849
ZyXel ZyWall 35	\$872



Simpler, But More Confusing: Intel Renames It's Processors

After years of using processor speed as the primary naming scheme, Intel has decided to simplify its naming of processors. Anyone who owns a BMW automobile will easily understand this new system: any processor number starting with "3" is considered entry level (like the BMW 3-Series automobiles), those that start with "5" are considered mid-range, and those starting with "7" are high-ticket and high performance. So far, it seems pretty good (3 = cheap; 5=not-so-cheap; 7=expensive). Supposedly, Intel determined the new names by considering the CPU's architecture, cache size, clock speed, bus speed and other unnamed factors.

Unfortunately, this newer, kinder naming system provides absolutely no guidance to users trying to determine which processor will meet their needs. The new naming scheme seems to imply some relationship between processor number and level of performance (Intel wants everyone to remember that higher numbers mean better processors). However, they don't even begin to answer any questions about what "better" means (Better for Intel because they make more money?). The end-result of all of this processor naming hype is more confusion among consumers. While the technology geeks will quibble about processor architecture and manufacturing processes and how they affect processor performance, for the consumer, it's really very simple:

1. If your current computer runs your favorite applications fast enough to please you and you are not planning to add any new applications, probably everything is fine.
2. If you are planning to purchase a new computer application, check out the minimum and recommended hardware to run the application (It's printed on the box). Consider that the minimum requirement is the vendor's best guess about what computer hardware would allow that application to operate at some minimum level of performance-- to them. Maybe they are more impatient than you are. Maybe the thought of shelling out a lot of money for new computer hardware will allow you to be more patient. Consider that the recommended hardware configuration is probably at a level where any additional performance improvement would not be noticed.

Here are the new processor names along with some useful information about each processor.

Processor Number	Processor Family ¹	Clock Speed ²	L2 Cache ³	Hyper-Thread ⁴	SSE3 Instr. ⁵
320	Celeron D	2.40	256 KB	No	Yes
325	Celeron D	2.53	256 KB	No	Yes
330	Celeron D	2.66	256 KB	No	Yes
335	Celeron D	2.80	256 KB	No	Yes
520	Pentium 4	2.80	1 MB	Yes	Yes
530	Pentium 4	3.00	1 MB	Yes	Yes
540	Pentium 4	3.20	1 MB	Yes	Yes
550	Pentium 4	3.40	1 MB	Yes	Yes



Processor Number	Processor Family ¹	Clock Speed ²	L2 Cache ³	Hyper-Thread ⁴	SSE3 Instr. ⁵
560	Pentium 4	3.60	1 MB	Yes	Yes
310	Celeron M	1.20	512 KB	No	No
320	Celeron M	1.30	512 KB	No	No
330	Celeron M	1.40	512 K	No	No
340	Celeron M	1.50	512 B	No	No
518	Mobile Pentium 4	2.80	1 MB	Yes	Yes
532	Mobile Pentium 4	3.06	1 MB	Yes	Yes
538	Mobile Pentium 4	3.20	1 MB	Yes	Yes
715	Pentium M	1.50	2 MB	No	No
725	Pentium M	1.60	2 MB	No	No
735	Pentium M	1.70	2 MB	No	No
745	Pentium M	1.80	2 MB	No	No
755	Pentium M	2.00	2 MB	No	No

Notes

- 1 Processor Family generally describes the internal architecture of the processor. Celeron D and Pentium 4 processors are designed for use in desktop computers or network file servers. Celeron M, Mobile Pentium 4, and Pentium M are designed for laptop computers.
- 2 Clock Speed describes the operating frequency of the system processor chip. While it is generally true that increased clock speed means increased performance, it is only true when comparing processors that are in the same processor family. Comparing clock speeds of processors from different families gives no information about relative performance.
- 3 More cache memory usually improves the performance of the processor, since the computer instruction or data can be accessed more quickly from cache than from RAM or disk.
- 4 If an application was written to take advantage of hyperthreading AND the operating system supports hyperthreading AND the processor is able to hyperthread, the application performance is 10 – 15% better than an equal processor without hyperthreading capability. So far, the only operating system that supports hyperthreading is Windows XP.
- 5 SS3 instruction set was recently announced as an improvement to the Pentium 4 processors. Without getting into a lot of technical detail, it improves the performance of the processor when processing multimedia data (audio, video, games, etc.) and hyperthreading. Until application developers begin to include SS3 processor instructions in their application code, these new instructions will not be executed. Unless the application specifically states that it can use this processor feature (read the box), it probably doesn't. It will probably take 3 – 5 years before these instructions are integrated into the majority of computer applications.



Latest Big Hard Drives Cause Problems

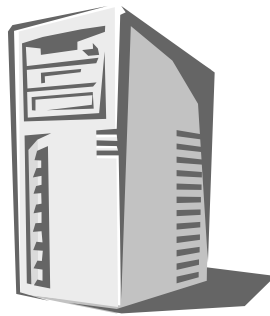
With the latest round of hard drive price cuts combined with huge increases in storage capacity, many computer users have opted to replace the hard drive on their computer with one of these new monsters with capacities up to 400 Gigabytes. Everything proceeds according to plan until it is suddenly realized that something is missing. No matter what the user does, the capacity never manages to exceed 137.4 Gigabytes. So what happened?

Well, there's good news and there's bad news. The good news is all of the capacity is really there. The bad news is the computer doesn't know how to use it—yet. This problem occurred twice before in the history of personal computers. It reared its ugly head first when hard drive capacities exceeded 512 Megabytes, and then again when the capacities jumped above 8.4 Gigabytes. The problem: The data field that contains the addressing information for the hard drive is too small—again.

There are two ways to solve this problem. The simplest, and least demanding way to regain the missing space is to create a second partition on the drive. The best news about this method is the fact that the data already on the disk can remain there. It will not need to be reloaded. The second partition would be treated as if it were a completely different drive and would have its own unique drive letter associated with it. In most situations, this is probably a reasonable solution. There is little if any performance degradation by using this method.

But sometimes, a single large partition must

be present. In that situation, more work is required that is not for the faint of heart. For most computers, the information contained in the BIOS must be updated. BIOS (Basis Input/Output System) contains very basic information that is used by the operating system to tell it about the computer hardware that it is running on. One of those pieces of information is the data field that contains the size of the hard drive partition, among other things. Unlike operating system updates, one size does not fit all. You must find the BIOS update that was written for the specific make and model of computer that you are using. When in doubt, pay someone to do this who has the expertise.



Now that the computer has the ability to store the actual size of the complete hard drive, you must remove the current partition from the disk. When you do this, you will lose all of the data that was contained in the 137 Gigabyte partition (Alternative #1 is sounding better, right?). After all partitions have been removed from the disk, a single partition equal in size to the drive's capacity can be defined. After this is complete, the drive must be formatted and all of the data, programs, etc. can be reloaded. Now you have one big monster hard drive.

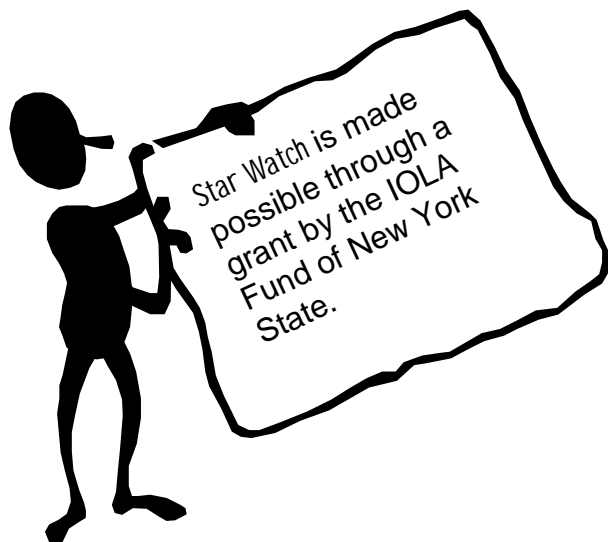
If hard drives continue to get larger and larger, could this happen again? The sad answer is "yes". But don't be too sad. It won't happen again until hard drive capacities exceed 144 Petabytes. Since 1 Petabyte = 1 Million Gigabytes, it should not be happening in the near future. Enjoy yourself until then.



WNYLC Web Statistics For August 2004

Total Hits.....326,287
 Total User Sessions.....42,632
 Average Hits/Day
 (Monday – Friday).....13,701
 Average user Sessions/Weekday...1,671
 Number of Pages Viewed.....105,708
 Average Number of Pages
 Viewed Per Day.....3,303
 Number of Documents Viewed.....72,622

Accessed Using Internet Explorer....89%
 Accessed Using Netscape.....4%
 Operating Systems Used:
 Windows 98.....28%
 Windows 2000.....20%
 Windows XP.....36%
 Windows 95.....<1%
 Windows ME.....2%
 Windows NT.....<1%
 Macintosh.....<1%
 Linux/Unix.....<1%



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