Random Walk Shoes

Setting Up a Web Server

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Internet Commerce
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Seminar Four - Chapter 8, Case 2
Memorandum

To: Amy Lawrence, Random Walk Shoes
From: Dayna Evert, Evert Designs
Date: 12/10/2013
RE: Features and Capacity of Web Server

In choosing a Web server, the first item we need to look at is the needs of a server, as this is the driving factor that will dictate the size of the server. Below are software requirements and estimates of disk space needed as provided by Random Walk Shoes:

- Web page information, including images - 400 MB
- Database management software - 200 MB
- Shopping cart software – 200 MB (Schneider, 2013)

In addition, the estimated customer volume is 8,000 the first month, with a 20% growth in traffic each month during the first two years (Schneider, 2013). By this estimated growth, the site will have 635,975 visitors a month in two years. The site should accommodate 3000 visitors one time (Schneider, 2013). The average page size is 100 KB, with an average person visiting 23 pages per visit (Schneider, 2013).

Dell recommends never exceeding 85% usage of disk drive space (Graham, 2001). With 800 MB of disk space currently required for software and data, Random Walk Shoes would need a minimum of 1 GB disk storage. However, most computers come with 500 GB hard drives, so this wouldn’t be an issue.

Dell’s PowerEdge series of Web servers come highly acclaimed. I recommend the PowerEdge T620 tower server. PC Magazine states “The T620 is custom-made for fault-tolerance, redundancy and virtualization (Lynn).” The T620 is built on Intel's SandyBridge EP/EX processor technology (Dell). The base model’s chassis accommodates up to 4 3.5” hard drives, software RAID and tower configuration, with an Intel Xeon E5-2603 1.80 GHz processor and 500 GB hard drive. Dell’s current price for this server is $1,199 plus shipping. Software is not included in this figure and will be addressed separately.

The T620 has lots of expansion options and can accommodate future growth.
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To: Amy Lawrence, Random Walk Shoes
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Date: 12/10/2013
RE: Web Server Operating Systems

There are two main types of operating system platforms to host your web site: Linux and Windows. Each has its own features, advantages and disadvantages.

Price: Linux is free, while Windows can cost up to $200 for each license. Software for Windows is also more expensive as compared to many of the open source options available on Linux.

Ease of Use: Most computer users are more familiar with Windows, making it easier to use. For those not familiar with Linux, there is a small learning curve.

Reliability: Linux machines can run for months or years without needing to be rebooted. Although Windows has seen improvements in reliability, it still cannot match that of Linux (Computer Hope).

Software: Because of the large amount of Windows users, there is a larger selection of software (Computer Hope). Many of the software available on Linux are open source. This is also true for the three key pieces of software that are needed for websites: Apache, MySQL and PHP (Claire, 2011). For Windows, software is not free can cost several hundreds of dollars. Many of the open source programs available through Linus are customizable allowing users to modify code for their needs.

Hardware: Because of the amount of Windows users, almost all hardware manufacturers will support their products (Computer Hope). Linux is not supported on all hardware devices.

Security: Although Windows continues to improve the security of their operating system, it is vulnerable to viruses and other attacks (Computer Hope). Linux offers superior security. With Linux, users do not have “root” privileges which are given by default in Windows (Noyes, 2010).

Support: Windows offers paid support for its operating system. Linux is an open source, so there is not support. However, there is a large community of Linux users and answers can be found online through search engines and forums.

Linux is the industry preference for web servers and is my recommendation. Since Linux and the software used on Linux is open source, the cost savings are huge. Linux machines are more reliable and require less rebooting than Windows, which can cause downtime. In addition, Linux is more secure and less vulnerable to attacks.
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To: Amy Lawrence, Random Walk Shoes
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Date: 12/10/2013
RE: Web Server Software Packages

Apache: Apache is the leading server software on the web with 65% of the market (Schneider, 2013). Apache is open-source with many people contributing to the source code and has fewer vulnerabilities than Microsoft software. It performs efficiently and has a large base of knowledgeable users (Schneider, 2013). Although several companies sell support packages for Apache, there are many online forums and blogs where one can find technical information. Apache runs on many systems including Linux and Windows (Schneider, 2013). Apache can provide both static and dynamic service. Apache comes with a lot of configuration features (Issac, 2013). Apache is the only server that allows for direct programming that improves upon website performance and integration (Julia, 2012).

Microsoft Internet Information Server (IIS): Microsoft is the second most popular Web server software, with 15% of the market (Schneider, 2013). Although IIS is free, the operating system it comes packaged with can range in cost from $1,000 to several thousand (Schneider, 2013). IIS is only compatible with Windows operating systems and prone to malware attacks (Seymour). Windows is supported by Microsoft, so help is readily available.

Nginx – Nginx is a lightweight web server with a reputation for speed (Hutchinson, 2011). It is a free, open-source software. Compared to Apache, which is process-driven, Nginx is event-driven, making it faster. Nginx has fewer features than Apache and has limits to configurable features. In Nginx, memory consumption is very low for serving static pages compared to Apache’s nature of creating new process for each request increases the memory consumption (Issac, 2013). Nginx does not support some operating systems, like OpenVMS and IBMi.

Lighttpd – Lighttpd offers good security and performance, but has high memory usage.

With Apache being the most widely used software, it would be my preferred choice. Apache offers more features and is the more compatible with other computer platforms. If offers good security and high performance.
REFERENCES


