CHAPTER 1

What Is Windows Home Server?

Microsoft's intention to release Windows Home Server was first announced on January 7, 2007 by Bill Gates at the 2007 International Consumer Electronics Show (CES) in Las Vegas. (For anyone who is interested, Microsoft referred to Windows Home Server as both Code Name Q and Quattro during its development. It was dubbed Quattro by the leader of the project, Charlie Kindel, because it was his fourth attempt at building a home server.) Soon after the announcement, Microsoft released a beta version to approved testers, and by early June 2007, over 60,000 people were testing Windows Home Server worldwide.

So, what is Windows Home Server? You likely have some idea, because you are reading this book. But just in case you are not sure what it is, or you want to make sure you know everything that it is supposed to do for you, this chapter provides an introduction. First, this chapter gives you an overview of Windows Home Server. It then describes the system requirements for running Windows Home Server, reviews the option of buying a ready-made Windows Home Server, and details what software you get with Windows Home Server.

Windows Home Server Overview

In a nutshell, Windows Home Server is a server running Windows for your home. Yes, I know that is obvious, but bear with me.

When most people think of servers, they think of those big machines that sit in secured rooms somewhere in the workplace and do things such as run databases or e-mail programs; most people typically don't think of a server as something that they might have at home. Of course, because you are reading this book, you realize that having a server at home not only is possible but is a great idea (indeed, you may already have a server at home).

According to Microsoft, by the year 2009 there will be over 70 million multi-PC networked households in the world. That is quite a large number! Obviously Microsoft would like to take advantage of this opportunity by providing a product that will benefit all of those households, and that is where Windows Home Server comes into play.

It is very likely that the residents of each of those 70 million households have some data that they will want to share among their PCs, be it digital photographs, home movies, songs, or some other type of media. It is extremely likely that each of those households will want to be able to easily back up and restore those computers with as little effort as possible. (I don't know about you, but if I had a dollar for every time I wished I had performed that backup when something later went wrong, I probably could have bought a new computer by now.

It's not that I don't back up my data—far from it—it's just that I occasionally forget to back it up, or sometimes I just can't be bothered.) Also, each one of those computers in those households will need to be updated with security patches and updated virus definition files to ensure that they are protected from the many threats that exist on the Internet.

Windows Home Server has features that address each of these scenarios to some extent, most of which can be set up initially with a few clicks of the mouse and then left to run quietly in the background. The only one of these scenarios that Windows Home Server does not really address adequately is the need to obtain security patches and virus updates. Windows Home Server will inform you that your computers are not patched or have out-of-date protection, but it will not handle the updates for you. You still have to visit each computer and take care of this issue yourself. Let's hope Microsoft plans to include that functionality in Version 2 of the product!

Microsoft wants you to take away one message from using Windows Home Server: "Protect, Connect, and Organize." Using Windows Home Server enables you to protect, connect to, and organize your digital data with very little effort.

Essentially, your Windows Home Server will become the central hub of your home network, performing and storing all of your computer backups, storing and sharing all of your digital files, and monitoring the health of your home computers on your network. It can also provide you with remote access to your computers and your files for when you are away from your home.

■ **Note** There are certain things that Windows Home Server cannot do. For example, you cannot use Windows Home Server to share your Internet connection with all of your home computers. If you are currently using Internet Connection Sharing provided by Windows XP, for example, then you will still have to use it!

The following list gives you an idea of what you can do with some of the features of Windows Home Server:

- *Back up automatically any connected and supported Windows home computer*: During the Windows Home Server Connector software installation process on each of your home computers, an automated backup schedule is created. All you have to do is ensure that your computer is switched on and connected to your home network when the backup time arrives, and your backups will be performed automatically.
- *Easily restore any backed up files*: You can easily and quickly restore any number of files, from a single Word document to an entire hard drive full of data, with just a few clicks of the mouse.
- *Easily restore a backed up computer*: You can easily restore an entire computer in the event of a failure or other problem just by inserting the Windows Home Server Home Computer Restore CD and selecting a backup.
- *Share digital files*: You can share any of your digital files, be they movies, photos, songs, or other digital media, just by copying them to any shared folder and ensuring that others have access to that folder. Giving access to shared folders is as simple as clicking the mouse.

- *Access computers and files from anywhere*: You can access any of your shared files or computers from anywhere in the world by connecting to a Microsoft Windows Live web site, which in turn connects to your Windows Home Server. Not only can you view or download files, you can also upload files.
- *Centralize storage*: All of your shared storage can be accessed in one single place. Instead of seeing drive letters, you just see shared folders.
- *Expand the storage as your needs increase*: If you start to run out of hard disk storage space on your Windows Home Server, you can easily add more hard drives, either internal drives, if your hardware can support any more, or external drives. It's just as simple as plugging them in! This is called the Windows Home Server Drive Extender.
- *Protect your shared files*: If you want to ensure that your shared files are available to you even if one of the hard drives in your Windows Home Server fails for any reason, you can choose to duplicate folders over multiple hard drives, again just by a click of the mouse.
- *Monitor the health of the computers on your network*: By using the Windows Home Server Console, you have a single place to view the state of your computers so that you don't have to visit every machine to check its health.
- *Add and remove users*: You can easily add and remove users and grant them privileges.
- *Easily connect your home computers*: You can connect up to ten home computers and create up to ten user accounts.
- *Use less space for backups*: Windows Home Server reduces the amount of disk space used for backups by utilizing single-instance storage, which requires only one copy of any file, no matter how many times it appears on computers within your home network.
- *Stream media across your network*: You can stream media to devices on your network that support Windows Media Connect, such as a Microsoft Xbox 360.

■ **Note** Each of these elements of Windows Home Server will be covered in depth in subsequent chapters in this book.

If you are thinking that similar software is available from Microsoft, you are right, sort of. You could run Microsoft Windows Server 2003 with Active Directory at home and have all of your computers as part of your home domain, which, with the correct additional software, could help you to back up and monitor your computers and provide shared folders. Obviously, though, the average home user likely does not have the knowledge to set up, configure, and maintain a potentially complex network such as this and really wants only the simple functionality of being able to monitor computers and back up and share data easily—which is exactly what Windows Home Server is designed for. And besides the complexity involved in this setup, it potentially is very expensive for a household with only a few computers.

■ **Note** Active Directory is Microsoft's directory service that was first introduced in Windows 2000. Think of it as a giant phone book that includes entries for a number of different elements, including users, computers, printers, and more.

Another piece of software from Microsoft that provides some similar functionality to Windows Home Server is Small Business Server 2003. Unlike the Windows Server 2003/Active Directory combination, Small Business Server 2003 is a single piece of software that comes with a number of additional applications out of the box, enabling small businesses and home users to set up and configure only the components that they need to use. For example, Small Business Server 2003 contains a simplified version of Microsoft Exchange so that you can run your own e-mail server. It also contains a number of wizards that walk you through setting up each of the components, which means you don't have to be an expert at numerous applications. This is a far easier and less expensive option than purchasing Windows Server 2003, creating an Active Directory, and then purchasing any additional software that you might need, such as ISA Server or Exchange, which are really aimed at the enterprise market. However, Small Business Server 2003 still involves more hassle and expense than most average home users are willing to accept, and in most cases, average home users are not interested in running their own e-mail server and want something even simpler to use.

Windows Home Server is intended to overcome home users' reluctance to set up a home server. It is relatively inexpensive (depending on the hardware you purchase) and is incredibly simple to set up and use. In fact, once you have it set up and running how you want it, you may even forget it's there. It is designed to be set up and used by anyone, not just those people who are computer experts.

Windows Home Server is actually built on the Windows Server 2003 platform, but many of the more complex elements have been hidden away, leaving just the simple elements that are needed to perform the job in question; for example the number of options on the Start menu is dramatically reduced from what you would expect to see. This is because you don't need them!

Windows Home Server is designed to run on a small form factor set of hardware, meaning that instead of a big box with multiple hard drives, CD and DVD drives, and more ports than you can shake a stick at, it has only exactly what it needs to run, nothing more, nothing less. In fact, you will probably find that most prebuilt Windows Home Server machines don't even have ports for a keyboard, mouse, or monitor. But don't worry, you can do everything you need to do on your Windows Home Server from the Windows Home Server Console—more on that later.

■ **Note** Having no keyboard, mouse, or monitor is also referred to as being *headless*.

One of the reasons for making the form factor so small is that most people don't want yet another bulky computer in their home. Windows Home Server can run on a computer that is small and relatively quiet, and you can set up your system so that the computer doesn't need to be connected to anything other than an AC power socket and an Ethernet cable, meaning you can tuck it away in a corner or some other unobtrusive spot.

■ **Caution** If you decide to put your Windows Home Server somewhere out of the way, make sure it has enough ventilation so that it doesn't overheat!

Prices for Windows Home Server hardware will vary depending on the manufacturer or system builder, the specification of the hardware, and other factors such as additional software that might come with the machine, but Microsoft's ultimate vision is to see Windows Home Servers selling for around $500.

Microsoft produced a prototype Windows Home Server, shown in Figure 1-1, lovingly referred to as "the hockey puck" by anyone who has seen it. Unfortunately, it is unlikely that this particular piece of hardware will ever see the light of day in the stores, although you might see something similar from some manufacturers and systems builders.

Figure 1-1. *Microsoft's prototype Windows Home Server hardware*

There are a number of specific language versions of the Windows Home Server software:

- English
- German
- Spanish
- French

Other language versions may be released at a later date, so keep checking the Microsoft Windows Home Server web site for updates if you need a version in another language.

■ **Note** The Microsoft Windows Home Server web site is at `http://www.microsoft.com/windows/products/winfamily/windowshomeserver/default.mspx`.

Windows Home Server is also designed to enable additional software to be integrated with it. This additional software could be installed in the same way as you would install software now, such as antivirus software, or it could be installed as an add-in, with the software's features available within the Windows Home Server Console. The possibilities are endless for

the different types of software that could be available. For example, software might be offered that provides home automation through your Windows Home Server.

■ **Note** For more information on add-ins and additional software for Windows Home Server, take a look at Chapter 13.

Requirements for Running Windows Home Server

The minimum requirements for running Windows Home Server are lower than the requirements for running a current home computer, because Windows Home Server is not used in the same way that a normal home computer is used.

This statement may lead you to think that you can reuse an older computer rather than buy a new one for Windows Home Server, and for the most part you probably can do this. However, if you attempt to do so, you will need to find hardware drivers for those components you wish to reuse. Because Windows Home Server is built upon the Windows Server 2003 platform, you need to find drivers for your hardware for Windows Server 2003. If you cannot locate drivers for this platform, then your hardware will not work with Windows Home Server.

■ **Note** Windows Home Server does not support USB 1.1—it supports only USB 2.0. This does not affect you unless you plan to use external storage, in which case you must make sure that your motherboard supports USB 2.0 or it won't work.

The minimum hardware requirements and the recommended hardware requirements are listed and described in Table 1-1. These requirements are found in the *Windows Home Server Getting Started* guide (accessible from the Windows Home Server web site) and may be subject to change, so check the latest version of the document if you are not sure. The recommended hardware requirements are those that will ensure you have a better Windows Home Server experience.

■ **Note** You can certainly run Windows Home Server on a computer that meets the minimum hardware requirements. However, if you plan to do more with your Windows Home Server than just use the features provided, you really should consider meeting the recommended requirements or even plan on exceeding them. Don't go overboard, though, because you may not get as much of a return on your investment.

Table 1-1. *Windows Home Server Hardware Requirements*

Requirement	Minimum	Recommended
CPU	1 GHz Pentium 3 (or equivalent)	Pentium 4, AMD x64, or newer processor. Windows Home Server includes a 32-bit operating system, which runs on 32-bit and 64-bit (Intel EM64T and AMD x64) architectures. Future versions of Windows Home Server may support 64-bit processors only, so it is recommended that you use a 64-bit compatible processor in order to make sure that you can upgrade to future versions.
RAM	512 MB	512 MB
Hard drives	70 GB internal (ATA, SATA, or SCSI) hard drive as the primary drive, and any number of additional hard drives of any capacity. The primary (system) hard drive should be as large as possible to ensure that you can copy a large number of files or multiple large files to your home server at the same time.	At least two internal hard drives with 300 GB as the primary (system) hard drive.
Network interface card	100 Mbps Ethernet network interface card.	100 Mbps (or faster) Ethernet network interface card.

■ **Caution** Microsoft has stated that future versions of Windows Home Server may support 64-bit processors only. It is recommended that you use a 64-bit compatible processor to make sure that you can upgrade to future versions.

You may also need the devices listed and described in Table 1-2 to install Windows Home Server, depending on the computer manufacturer and whether you are building your own Windows Home Server. These requirements are also found in the *Windows Home Server Getting Started* guide.

■ **Tip** For information on the components needed to build your own Windows Home Server, take a look at Appendix A.

Table 1-2. *Other Device Requirements*

Requirement	Description
DVD drive	Internal or external DVD drive. Your home server must be capable of booting from this internal or external DVD drive in order to install Windows Home Server. Follow the computer manufacturer's instructions to configure the computer's BIOS to boot from the DVD drive.
Display	Compatible monitor.
Other devices	Keyboard, mouse, or other compatible pointing device.

There are also a number of network requirements that you must meet in order to use and get the most out of Windows Home Server. These requirements, found in the *Windows Home Server Getting Started* guide, are listed and described in Table 1-3.

Table 1-3. *Windows Home Server Network Requirements*

Requirement	Minimum
Server connection	100 Mbps wired connection.
Home computers	One or more computers that are running a supported operating system, with either a wired or a wireless network connection.
Internet connection	Broadband connection.
Broadband router/firewall device	An external Internet broadband router/firewall device with 100 Mbps wired Ethernet connection. Additionally, Windows Home Server assumes that your home computers get their IP address from the router/firewall device on your home network.

■ **Note** To see a list of supported home computer operating systems, take a look at Chapter 4.

■ **Note** Your Windows Home Server must be connected to your home network via a wired connection—wireless is not supported. See Appendix A for more information about home networking.

Buying a Windows Home Server System

By the time you are reading this book, there should be a number of Windows Home Servers on the market from different manufacturers, with that number increasing as time goes on.

Buying a Windows Home Server rather than building one yourself has numerous advantages, including the following:

- The hardware is all prebuilt for you and you will have confidence that it will all work with the Windows Home Server software.
- You will get support from the manufacturer.
- The form factor of the Windows Home Server could be a lot smaller than one you build yourself.
- Buying one might actually work out to be cheaper than building one.
- Sometimes it is just plain easier to buy one thing that has everything you need!

Hewlett-Packard was one of the first manufacturers to announce its intent to release a machine that runs Windows Home Server software—the HP MediaSmart Server, shown in Figure 1-2. The MediaSmart Server is essentially a Windows Home Server that has a reduced form factor that HP describes as "a powerful home server allowing access to personal documents and digital entertainment from anywhere in the world."

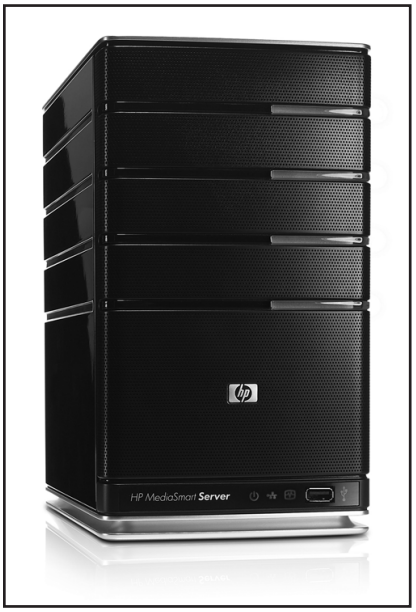

Figure 1-2. *The HP MediaSmart Server*

This product, one of the first variants of a Windows Home Server, has the capability to support four separate SATA hard drives, as you can see in Figure 1-3. This should give you a real indication of the actual size of the HP MediaSmart Server, because it is not much taller than those four hard drive bays.

The specification of the HP MediaSmart Server is as follows (although it is important to note that this specification might be different by the time you are reading this):

- AMD 1.8 GHz 64-bit Sempron processor
- 10/100/1000 RJ45 Ethernet
- SATA 7200 RPM hard disk drives
- Size: 14cm (W) × 25cm (H) × 23cm (D)
- Four internal hard disk drive bays
- Up to 7.5 terabytes storage
- 4 USB 2.0 ports
- Internal universal power supply

You may notice from the preceding specification that there is no CD or DVD drive; that's because one is not needed on this particular machine! If you needed one, you could always connect a USB DVD drive in order to install additional software.

Figure 1-3. *A better view of the HP MediaSmart Server*

So that was a very quick look at one Windows Media Server. You should take a look at what is available currently and make a decision whether to buy one or build one. If you decide to buy one, make sure it is the right one for you. Only you will know what else you might want to use the Windows Home Server for, so keep that in mind when shopping around.

Windows Home Server Software

Depending on the Windows Home Server you may have purchased or built, you should have some Windows Home Server software. That software will include specific Windows Home Server media:

- *Windows Home Server Installation DVD*: The DVD you use to install the Windows Home Server software on the Windows Home Server computer
- *Windows Home Server Connector Software CD*: The CD that you use to install the Windows Home Server Connector software onto each of your home computers
- *Windows Home Server Home Computer Restore CD*: The CD that you use if you need to perform a system restore on one of your home computers

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■ **Note** During the installation of the Windows Home Server software, a Software shared folder is created on the Windows Home Server that contains both the Windows Home Server Connector software and the Windows Home Server Home Computer Restore CD software. For more information on the Windows Home Server Connector software, take a look at Chapter 4, and for more information on using the Windows Home Server Home Computer Restore CD, take a look at Chapter 7.

Summary

So now you have a high-level view of what Windows Home Server is and what it can do for you. In the upcoming chapters, each of the elements of Windows Home Server will be examined in detail. You have also seen what software you actually get as part of Windows Home Server and the different requirements for running Windows Home Server.