

Terry Walsh

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# Using Windows Server 2016 Essentials

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eBook Edition

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# About the Author

## Terry Walsh

Terry Walsh is the Owner and Editor of We Got Served (<http://www.wegoterved.com>), which he established in 2007 to share his experiences with emerging home server platforms.

Since then, the site has grown to cover a wide range of digital home, consumer electronics, and small business product categories but retains at its core the mission to help users make the most of technology.

Terry graduated from the University of Durham, UK in 1995 with a Bachelor of Arts in English Language and Literature. Prior to starting WGS, Terry cut his teeth online in 1993 building and operating successful alternative music websites and communities for international artists.

Born and raised in Liverpool, England and now living in Waterloo, Canada with his wife and two sons, Terry has been awarded Microsoft's Most Valuable Professional Award each year since 2008 for his work on We Got Served.

Over the last four years, Terry has authored a wide range of Mac and Windows home server guides, including *Building a Windows 10 Home Server*, *Using OS X Mavericks Server at Home*, *Building a Home Server With Windows 8.1*, *Windows Home Server 2011 Step by Step*, *Using OS X Lion Server at Home*, *Using OS X Mountain Lion Server at Home*, *25 Essential Windows Home Server Projects* and *Building a Windows Home Theatre PC*. He has also edited a number of titles, including *Building a FreeNAS Home Server*, *Using Windows Home Server*, *25 Essential Windows Home Server Projects Volume 2* and *15 Essential Windows 8 Projects*.

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## About We Got Served

We Got Served is a popular technology news and community site that was founded in February 2007. It is written, edited and moderated by a dedicated and knowledgeable team of technology enthusiasts around the world who are focused on bringing you the latest news, reviews, tutorials and support for the products you're using today and will be using tomorrow.

We created We Got Served as a place to learn about new technology, help readers make the most of the products and services they use, and most importantly to create a community where readers can learn, discuss and share their experience and knowledge with others in need of support. However you use the site, we hope you enjoy it.

## Other Books by Terry Walsh

We Got Served publishes a wide range of guides for Microsoft Windows and Apple Mac OS X. Click the titles below to view online or visit <http://store.wegotsserved.com>.

- [25 Essential Windows Home Server Projects](#)
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- [Building a Windows Home Theatre PC](#)
- [Manage Your Music and Video Metadata](#)
- [Using OS X El Capitan Server at Home](#)
- [Using Windows Server 2012 R2 Essentials](#)
- [Windows Home Server 2011 Step by Step](#)

# Using Windows Server Essentials Reviews

A big thank you from the author to every reader who takes a couple of minutes to share their feedback on the book. Writing these books is a labour of love, with a few busy months invested in each title, so your thoughts and suggestions are always welcome - wherever you choose to express them!

## ***Outstanding Investment***

*For only a couple of bucks, this book provided the necessary information to get Server 2012 up and running with some real value-added functionality. The tag line is 'written by non-IT people; for use by non-IT people' and it is absolutely true. In short order anyone can follow the steps provided and get a home network on a backup schedule, monitor updates, start serving web pages & media.*

## ***A Great Book to Get You Through the Initial Setup***

*Windows Server 2012 Essentials takes a little more time to setup. The book provided me with the needed instructions to get me through the build. Detail was good for the things that I needed to set up. I loved all the pictures of the different screens, that really helped to be sure that I was in the right place. Once completed everything has worked flawlessly. This is a great resource for future work on my server.*

## ***Perfect for a Newbie***

*I found this guide to be just what I needed for my first experience configuring a new server for the church where I volunteer. The level of detail was just right for me.*

## ***The Right Amount of Detail***

*The Using Windows Server 2012 Essentials book made installing and setting up our new business server so much easier. It has the information you need without all the ott technical fluff.*

*The day this new book came out we immediately purchased it (on the train, on the way to the office). Once we reached the office we purchased Windows Server 2012 R2 Essentials and have not had one problem with our configuration.*

# Revision History

**v1.0**

**January 2017**

Initial release

# Using Windows Server 2016 Essentials

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# Introduction

*Welcome to Using Windows Server 2016 Essentials. Essentials - as I'll refer to it in the book - is touted by Microsoft as the "Ideal First Server" for those small businesses, with less than 25 users, who want to focus their time on running their business, and not have to become an IT expert or rely on an IT consultant to maintain their server.*



If you are an advanced home user (sometimes known as a "Prosumer" to the Marketing *cognoscenti*), Windows Server 2016 Essentials provides you with a robust media and central storage platform that can grow as your home network grows. If you are a SOHO (Small Office, Home Office) user, Essentials provides you with that same robust platform providing a central storage unit and the ability to back up and restore data to and from any client computers you have, alongside advanced remote access capabilities.

In writing this book, we believe you're going to be in one of four camps:

For those of you upgrading from the previous release of Windows Server Essentials, you'll have a good understanding of the platform, so we'll walk you through the key changes and improvements from the 2012 R2 release. It's fair to say that the enhancements this time around are incremental, but there are some significant differences that you should be aware of before you migrate.

If you are new to the Windows Server platform, I hope this book will help you quickly discover how easy it is to install, configure and use Windows Server 2016 Essentials, and how useful its features are in both the home and small business environments.

Whether you are interested in Windows Server Essentials:

- As a file server
- As an easy way to share files with friends and colleagues
- As an application server
- Or you're simply looking for an easy way to protect your PCs and Macs

or all of the above, you will learn that your First Server can indeed play an “essential” role at the heart of your network.

We assume, however, that you are more than just passively interested in the technology behind Windows Server 2016 Essentials. If you're reading this book, you may be either at the purchase point or you have already pulled the trigger to buy. Whether you're moving from another Microsoft Server platform, a Linux NAS, or this is your first venture into the server world, our goal in this book is to guide you through the first few weeks of life with your server. The decision process of matching hardware to software, the installation/migration process, deployment, and other basics of getting Windows Server Essentials up and running. Once set up, we will demonstrate the capabilities of Windows Server 2016 Essentials and what you need to do from a maintenance perspective to keep things running smoothly.

When we talk about *deployment*, we're referring to both *clients* and *users*. A server, whether in the home, small business or a large corporation “serves” no purpose without clients (devices that connect to the server, such as PCs, printers and other devices). If you are a home user, you may want to know how to set up the media features of Essentials and connect such devices as an Xbox One, or other game console. If you are a SOHO user, you may want to set up Remote Web Access so that you can access your computers from anywhere you might find yourself. If you are running a small business, you may be interested in Line of Business (LOB) applications and Cloud services. No matter which profile you fit, you should most definitely be interested in connecting users and configuring their access to information stored on the server.



## Why Would You Want to Read This Book?

When writing a guide such as this, it is useful to envision who will be reading and why. My assumption is that you will have at least heard of Windows Server 2016 Essentials, or in more general terms, servers and network attached storage devices. You are interested in finding out what a server can do for your home or business. Whilst each of you will have specific areas of interest, your basic needs are the same: provide a central storage device from which to serve data and a means to protect that data.

You may have tried storing your growing collection of files on an external hard drive, but find it difficult to share files around the home or business. That hard drive is filling up, and you're wondering what to do next with your data. You may own or work for a small business with up to 25 PCs and/or Macs being used around the office, and have need of a server that can backup and protect your vital data with ease, and allow centralized file sharing, user account management and remote access.

You may know a lot about computers, you may know just a little - but I am going to assume that your home or business includes more than one PC, that you have a growing mass of data to look after, and you are interested in knowing if Windows Server 2016 Essentials is right for you. My job is to help you get started with Windows Server Essentials, but more importantly, prepare you with the knowledge you need to begin your own adventures with the platform, at home, at work, or on the road.

## Just Who Am I to be Talking About Windows Server 2016 Essentials?

I am that home computer enthusiast that started many years ago with one computer. As my kids grew, that one computer became multiple computers. As the world started becoming more and more digital, I found more of my information and media going on to my computer. No more CDs, no more printed pictures, no more home videos on VHS tapes. I soon figured out that if those digitized pictures or home videos got lost, I was not going to survive the repercussions. I needed to protect that data. I also wanted a central "device" from which to serve all my media to any computer, or other media device, in my home.

About that time, Windows Home Server came to market. This was the perfect solution for my situation, and it included an array of additional features that I soon found quite useful, or essential. WHS was specifically designed for the consumer and for home use - inexpensive, with modest hardware requirements. Over time, I became an expert of sorts, began writing about my experiences with

Windows Home Server on the We Got Served (<http://www.wegotserverd.com>) website, all of which eventually led to my selection as a Microsoft MVP (Most Valuable Professional - Microsoft's award program for technical expertise in the community). They've awarded me that title on nine occasions.

As a computer enthusiast, I am always looking forward to the latest and hopefully greatest thing coming from the computer hardware and software, world. With the demise of Windows Home Server, my attention turned to its replacement - Windows Server 2012 Essentials, and subsequently, the later releases of the platform.

The gist of that last paragraph is I am most definitely **not** an "IT person" and this is not a book for geeks (well, not *hardcore* geeks, anyway!). Corporate servers are an area in which I have had minimal interest or expertise. As a small business server replacement however, Essentials is being touted as the server for a business without an IT department. Install it; configure it; deploy it; job done; no experience required - if that's good for business, then it's good for home.

So, the challenge is to determine how true a statement that is. If I can do all that, so can you. The goal of this book is that it can become your guide on the ABCs of how to get you up and running with Windows Server 2016 Essentials. It'll be easier if you know *something* about computers, in general, but hopefully this book can get you there regardless of your level of expertise.

Just remember, this is a book *written by* non-IT people; *for use by* non-IT people. With that said, let's dive in!

# Please Register This Book

Whilst the concept of registering a book may sound a little strange, I heartily invite you to do so! Registering your email address with us allows us to inform you of updates and amendments to the book, let you know about new books we're writing as well as send over offers from time to time on our other titles.

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4. Please purchase your eBooks directly from us at <http://store.wegotserved.com> to avoid future issues (you may get a little money off in the future too!)

# Chapter 1:

## *Welcome to Windows Server Essentials*

*Before we get hands on with Microsoft's ideal "first server" platform, let's take a little time to understand what it is and where it came from. A brief history lesson will give you a deeper appreciation of the qualities that make the platform so unique.*

### **Windows Server 2016 Essentials in a Nutshell**

The latest release of Windows Server Essentials, **Windows Server 2016 Essentials**, is one of a family of operating systems grouped under the Windows Server 2016 brand. Windows Server is, as the name suggests, a server platform that is designed for business application (although tech enthusiasts may well run the OS at home). Unlike a client operating system, like Windows 10, Windows Server is highly componentized, so it can be tweaked and tailored by system administrators for specific uses in a wide variety of business environments - from a single user, home-based business through to massive multi-site corporations with hundreds of thousands of employees.

Windows Server Essentials is targeted at small businesses with twenty-five users (or fewer) and supports up to fifty PCs. Unlike other editions of Windows Server, which require advanced IT administration skills to configure and manage, the core features and user experience of Windows Essentials have been carefully designed to make it easy for everyday users to support. Much of the initial server setup is automated and the elements that do require user intervention are heavily guided with simple configuration wizards. There's also a Dashboard management console that allows easy, ongoing administration of the server and connected clients (PCs).

The Windows Server family includes:

- **Windows Server 2016 Datacenter Edition** –designed for large, highly virtualized private and hybrid cloud environments.
- **Windows Server 2016 Standard Edition** – targeted at non-virtualized or lightly virtualized environments.

- **Windows Server 2016 Essentials** - targeted at small businesses with 25 users or fewer.
- **Windows Server 2016 MultiPoint Premium Edition** - targeted at Academic institutions
- **Windows Storage Server 2016** - designed for network attached storage application and only available with the purchase of new hardware.
- **Microsoft Hyper-V Server 2016** - a free hypervisor download for virtualized applications.

While Windows Server Essentials includes a vast array of features - both inside and outside of the Dashboard that you'll find in other Windows Server editions, there *are* technical limitations imposed on the platform that ensure it doesn't compete with higher-end versions designed for Enterprise. With a price of \$500, compared to thousands of dollars for other editions of Windows Server, that's fair enough. It's worth noting that these more expensive editions of Windows Server also support Windows Server Essentials features. A dedicated **server role** called *Windows Server Essentials Experience* (sounds like the name of the world's worst rock band, right?) enables all the features and dependent services and roles of Windows Server 2016 Essentials on Standard and Datacenter editions - without all of the locks and restrictions that Microsoft place on the cheaper Essentials product. In short, Windows Server Standard and Datacenter users get every feature they need. Up to 200 devices and PCs are supported via the Essentials Experience role on Standard and Datacenter.

*Good for them* you're probably thinking - but there are some benefits for Windows Server 2016 Essentials owners. If your needs grow and you want to move up to Microsoft's Windows Server Standard or Datacenter releases then you'll have an easier upgrade path and can retain all of the features you love about your current server, with the added features of the expanded products.

In the meantime, you'll find all of the features you'll need to run a small business, or a prosumer home in Windows Server Essentials. Let's talk about a few of those now.

## Windows Server 2016 Features

While you'll hear a lot of buzz about "running your business in the cloud", Windows Server Essentials enables small businesses to run their applications locally or, "on-premise" as the marketers like to say. But includes a number of links to Microsoft's Azure cloud platform and other online platforms for those that wish to use them - a setup known as a "hybrid" server.

The core features of Windows Server 2016 Essentials include:

- **Shared, centralized storage** - a secure location on the network for users to store shared and private files, accessible from any network-connected PC or device.
- **Automated data backup** - protection of business-critical data on the network through regular backup of data stored on the server and daily backup of network connected PCs.
- **Easy data restoration** - the ability to restore individual files and folders or entire PCs from archived backups should disaster occur.
- **Secure remote access** - easy configuration of remote web and VPN access, allowing users to access files and folders from the server wherever they are.
- **Integrated cloud services** - seamless management of users' Office 365 accounts, cloud-located Microsoft Exchange servers for email, Windows Azure Backup and Microsoft Intune device management.
- **Health Reporting** - automated monitoring and customizable reporting of connected PC status.

Of course, you'll be able to take advantage of a broader suite of Windows Server features, should you need them, a few of which include:

- **Active Directory** - Windows Server Essentials can serve as a domain controller, managing user authentication and authorization across the network.
- **Storage Management** - storage pooling and virtualization with Storage Spaces alongside a wide range of advanced storage features.
- **Advanced Networking** - manage networking features traditionally performed by routers, including DNS, DHCP and other routing functions.
- **Website and Web Application publishing** - run websites and web applications on the server via IIS and third-party support for PHP/MySQL.
- **Windows Server Update Services (WSUS)** - manage the distribution of Microsoft updates and hotfixes on network connected PCs.

As you can see, there's a lot to get your teeth into. That \$500 outlay buys you a lot of features that can make your business more efficient, or provide an ideal playground for learning server administration.

## How to Buy Windows Server Essentials

While most editions of Windows Server require you to understand complex licensing restrictions involving client access licenses (CALs), processor counts and other weird and wonderful regulations, life with Windows Server Essentials is much easier.

You can purchase the Windows Server Essentials software from many online software vendors as well as tech giants like Amazon and Newegg. You'll receive physical software which licenses the installation of Essentials on a server supporting up to two processors, with the 25 user/50 device limitations I mentioned earlier. That's all you need to know. Job done.

The screenshot shows the Newegg website interface. At the top is the Newegg logo and navigation links like 'Log In or Register', 'Try PREMIER', '0 Items', 'Wish List', and 'Customer Service'. Below the navigation bar is a search bar and category links. The main content area displays the product 'Microsoft Windows Server 2012 R2 Essentials 64B 1-2CPU - OEM'. The product image shows the Microsoft Windows Server 2012 R2 Essentials box. To the right of the image, there's a price section showing '\$399.99' with a 'Save: \$100.00 (20%)' and a 'FREE SHIPPING AVAILABLE' badge. Below the price, there's a 'Add to Cart' button and options to 'Add to Compare', 'Price Alert', and 'Add to Wish List'. A 'SHOPIRUNNER' badge is also visible. At the bottom, there's a 'Customers Also Bought' section with a 'Recommendations' button.

*Purchase Windows Server Essentials at your favorite online tech retailer.*

If you have a Microsoft subscription, such as MSDN or similar, you'll find Windows Server Essentials 2016 available to download from your account.

# A Brief History of Windows Server Essentials

While Windows Server has been around since the days of Windows NT 3.1 in 1993, small business editions of the platform first emerged in 1997, with the release of BackOffice Small Business Server 4.0. It was built on Windows NT Server 4.0 SP3 and included Exchange Server 5.0 SP1, Internet Information Services 3.0, SQL Server 6.5 SP3, Proxy Server 1.0, Internet Explorer 3.02 or 4.01, and Outlook 9.

Microsoft has continued to release new editions of Windows Server for small businesses every few years, under various names although up until 2007, with the release of a prosumer variant, Windows Home Server, you would have still needed advanced IT administration skills to get up and running with the platform.

Together Windows Home Server and Windows Small Business Server (as it was known at the time) drove the simplification of the Windows Server user experience, with innovations such as the Windows Server Dashboard, Launchpad for client connections, advanced data backup and bare metal PC restoration. Now, configuring the platform was simple enough for prosumers and enthusiasts, with much of the advanced work performed automatically, behind the scenes.





*Windows Home Server encouraged PC manufacturers to develop new, compact server hardware.*

Major software innovations such as Drive Extender, an advanced storage pooling and data redundancy feature which removed the concept of drive letters, may not have been successful, but the concept gave birth to today's Storage Spaces feature, which is installed on millions of Windows PCs around the world.

The core features of Windows Home Server and Windows Small Business Server were merged into a newly named Windows Server Essentials line in 2012, although many prosumers were frustrated at the loss of a dedicated home server line and the resulting price hike. On the small business side, Windows Server 2012 Essentials lost the bundled Microsoft Exchange messaging and collaboration software, as the software developer refocused the product (and its licensing) for the cloud era.

With the release of Windows Server 2102 R2 Essentials and now Windows Server 2016 Essentials, the operating system has been further strengthened with new features (predominately cascading from the parent OS) and fixes. That said, in classic Microsoft style, the company's server development teams appear to have been surprised by releases from their Windows client teams - support for connecting Windows 10 PCs was slow to arrive, causing significant frustration for users.

However, Windows Server 2016 Essentials provides the perfect opportunity for Microsoft to refresh and bolster the platform with enhanced features, driver support and other, under the hood tweaks. Let's take a look at some of the new features that are in store.