New Features in Windows Server 2012

For the free video please see
http://itfreetraining.com/server#new-2012

This video will look at 9 of the biggest new features in Windows Server 2012. Understanding what is available will help decide if Windows Server 2012 is the right choice for you.

New Features

- Server 2012 Interfaces
- Server Core
- Server Manager
- Storage Spaces
- Resilient File System (ReFS)
- SMB 3.0
- DirectAccess
- Hyper-V improvements
- RemoteFX improvements

New Features
This video will look at the following new features in Windows Server 2012. Server 2012 Interfaces, Server Core, Server Manager, Storage Spaces, Resilient File System (ReFS), SMB 3.0, DirectAccess, Hyper-V improvements and RemoteFX improvements.

Server 2012 Interfaces

Windows Server 2008 introduced the core interface. The choice of whether to use the full GUI interface or the server core interface had to be made at install time and could not be changed. With Windows Server 2012 you can change the interface at any time. To change the interface, it is a simple matter of removing and adding features using server manager, rebooting the server, and then the interface will be changed. Windows Server 2012 also adds an additional interface called the minimal interface. This reduces some of the more intensive graphical options but still allows access to tools like Server Manager. The minimal interface provides an interface between the full and server core interface.

Server Core

- Number of roles supported by Server Core increased
  - 12 of 19 roles are available
  - Roles not available
    - Active Directory Federation Services
    - Fax Server & Application Server
    - Network Policy and Access Services
    - Remote Desktop Services/Gateway/ Session Host/Web Access
    - Volume Activation Services
    - Windows Deployment Services
- SQL Server is supported

Server Core

Windows Server 2012 increases the number of roles that are available in server core. Of the 19 roles in Windows Server 2012, 12 of these are available in server core. Roles not available are Active Directory Federation Services, Fax Server & Application Server, Network Policy and Access Services, Remote desktop Services, Remote Desktop Services Gateway, Remote Desktop Session Host, Remote Desktop Web Access, Volume Activation Services and Windows Deployment Services.

Most of these are due to the graphical nature of the role, for example, Remote Desktop Services and other associated roles are not available since Remote Desktop Services is very graphical intensive. With Windows Server 2012, SQL server is also supported in server core.

Server Manager

- Interface has changed significantly
  - Provides access to most administration functions
- Manage pools of servers from Server Manager

Server Manager

Windows Server 2012 offers a lot of improvements to server manager as well as changing the interface look and feel. The difference with server manager is that you can manage multiple servers in the one pool. For example, if you want to install a particular role on a group of servers, you could put these servers in the one pool and install the role to all these servers in one go.

The interface in server manager has changed so that there is a tile for each role installed on the server. There are also menus on the left hand side that allow quick access to configuration features available for that role.

Storage Spaces

This is a feature available in Windows 8 and Windows Server 2012. It allows for multiple drives to be combined together to form one logical unit of storage. The drives used can be internal or external or a combination of the two. Storage space allows redundancy to be configured so that if a drive was to fail, the failed drive could be replaced and no data would be lost. Storage spaces also supports thin provision. This is when the drive is stored in a file rather than a block of data which can increase in size as more data is added.

Resilient File System (ReFS)

- Next generation file system
- Self healing (Reduces downtime)
- Does not support
    - Does not support booting
    - Disk quotas
    - EFS encryption or compression
- Requires Windows 8/Windows Server 2012

ReFS

NTFS was introduced in Windows NT in 1993. Since then it has been expanded and developed as required, however a new approach was required for modern computing. Microsoft has introduced the Resilient File System (ReFS) as a replacement for NTFS. Since it is a replacement for NTFS, it is considered to be a next generation file system. The main feature is that it allows the file system to be self-healing which means problems can be corrected without the need to reboot the computer. NTFS has introduced simpler features but due to the fundamental way it was originally designed, it has had limited success at making these features work. Since the file system is new, it requires Windows 8 or Windows Server 2012. ReFS, at this stage, does not support the following features, booting the operating system, disk quotas, EFS encryption and compression.

SMB 3.0

- Protocol used to access network shares
- Allows block features
  - Previously hard disk only or ISCSI
- High availability features
  - Transparent failover
  - SMB multichannel
- Allows virtual machines to be hosted on a file share

SMB 3.0
Server Message Block (SMB) is the protocol used to share folders. With Windows Server 2012 there is a new version of the protocol called SMB 3.0. There are a number of enhancements to the protocol to allow the protocol to work over the network better in particular with virtual machines. The most noticeable new feature is the protocol now has the ability to work at the block level. Previously if you wanted to work at the block level over the network you would have needed a protocol like ISCSI.

SMB 3.0 also adds support for high availability features including transparent failover and SMB multichannel. Transparency failover means that when a server fails in a cluster and the user is moved to a different server, this process should be transparent to the user and they should not notice an outage. SMB multichannel means that multi-channel can be combined together to form one channel, which increases the data throughput.
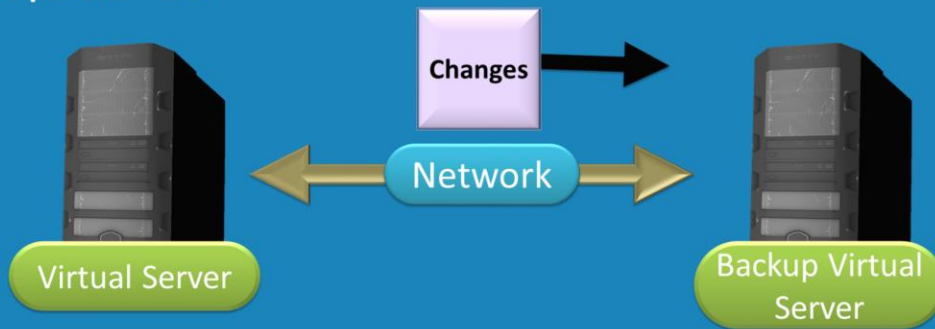
DirectAccess

DirectAccess is designed to be a replacement for traditional VPN Software. Previously VPN software would need to be installed and the user would need to authenticate using this software in order to create a tunnel back to the office. This may have required the user to login to the computer first, or some VPN software would prompt the user for this information on the Windows login screen. DirectAccess works seamlessly and is able to connect up to the office using a secure tunnel as soon as the computer is started up and does not require the user to enter in a username or password. Windows Server 2012, DirectAccess no longer requires IPv6.

Hyper-V

There has been a lot of improvements to hyper-V. Microsoft has released 10 new features for Hyper-V and updated 7 old features to add additional functionality. The biggest changes are better support for live migration of virtual machines. This means that it is easier to move a virtual machine from one server to another server. Also there is additional support for resource monitoring. This will allow you to better determine which virtual machines are using which resources on the server. For example, to determine how much CPU is being used by a particular virtual machine. Windows Server 2012 also allows replicating to be configured between an active virtual machine and another virtual machine. Replication changes are sent as blocks so this means that if the main virtual machine was to fail and the second virtual machine was used, some data may be lost. For this reason it is not at feature that was made to work for high availability.

RemoteFX
RemoteFX was first introduced in Windows 2008 R2 service pack 1. RemoteFX allows a server running Remote Desktop Services (Terminal services) to render a 3D image on the server which can be sent to the 2D client. This eliminates the need for the client to have 3D hardware. Windows Server 2008 R2 SP1 would only work with particular 3D cards. Windows Server 2012 now supports a greater range of 3D cards and also has a software mode if there is no 3D card in the server.

See http://YouTube.com/ITFreeTraining or http://itfreetraining.com for our always free training videos. This is only one video from the many free courses available on YouTube.

References
"What's New in Windows Server 2012" http://technet.microsoft.com/en-us/library/hh831769.aspx
"Windows Server Installation Options" http://technet.microsoft.com/en-us/library/hh831786.aspx