Microsoft

Windows Server

Windows Server 2012
Top Technical Reasons to Upgrade

Markus Erlacher
Technical Specialist Datacenter

Windows Server 2012: Cloud optimize your IT

Beyond virtualization 	Scale and secure workloads, cost-effectively build a private cloud, and securely connect to cloud services
The power of many servers, the simplicity of one 	Efficiently manage infrastructure while maximizing uptime and minimizing failures and downtime
Every app, any cloud 	Build on an open and scalable web platform that supports applications across premises
Modern workstyle, enabled 	Support a mobile and flexible work style

Why Windows Server 2012?

TOP BENEFITS OF WINDOWS SERVER 2012

Comprehensive cloud platform

- Complete, built-in virtualization platform
- Enterprise-class scale and performance, so you can virtualize every application
- Ability to achieve business continuity with inbox disaster recovery solutions
- Best-in-class hybrid cloud experience with a common set of technologies

Cost savings and increased efficiencies

- Reduced storage costs with Storage Spaces and other storage enhancements
- Increased server/administrator ratio through Windows PowerShell and multimachine management
- Increased uptime with Cluster-Aware Updating and transparent failover

Support for a modern work style

- Virtual Desktop Infrastructure (VDI): simplified management and reduced cost of implementations
- Optimized branch office wide area network (WAN) bandwidth use
- Ability for remote users to more securely access internal resources without a virtual private network (VPN)

Storage

ENTERPRISE-CLASS FEATURES ON LESS EXPENSIVE HARDWARE

- Storage Spaces
- Application storage support through SMB 3.0
- Data Deduplication
- Server Message Block (SMB) Direct

IMPROVED PERFORMANCE AND MORE CHOICE THROUGH INDUSTRY INNOVATION

- Offloaded Data Transfers (ODX)
- Virtual Fibre Channel for Hyper-V
- Windows Cluster in a Box
- Windows Storage Server

CONTINUOUS APPLICATION AVAILABILITY

- File system enhancements
- SMB Transparent Failover
- Online backup
- Cluster-Aware Updating (CAU)
- SMB Multichannel
- High availability with iSCSI and NFS

SIMPLIFIED MANAGEABILITY

- Management options
- Unified storage management

Management and Automation

STANDARDS-BASED MANAGEMENT

Windows Management Framework provides a common platform for building automation and integration incorporating PowerShell, WS-Management and WMI

ROBUST AUTOMATION

Windows PowerShell 3.0 provides more features to allow more activities to be automated across the server ecosystem

MULTISERVER MANAGEMENT

Server Manager enables a multiserver management experience that builds on the standardized approach to management and robust automation capabilities

ECOSYSTEM AND EXTENSIBILITY

Cross platform capabilities enable automation across the datacenter

Standardized interfaces and tools extend the interoperability with **DevOps**

Web and Application Platform

MUTLTENANT HIGH-DENSITY WEBSITES

Server Name Indication (SNI) allows high-density sites that are more secure

Non-Uniform Memory Architecture (NUMA) takes advantage of hardware that has complex specifications

Centralized SSL store dynamically maps sites to certificates

HIGH-PERFORMANCE WEB APPLICATIONS

Application Initialization improves user experience of first requests

CPU throttling helps ensure that no single web application affects the performance of others

Dynamic FTP and IP restrictions set policies to block unwanted access

CONSISTENT AND REPEATABLE CONFIGURATIONS

Shared configuration helps ensure consistency across web farms

Configuration Editor provides a rich, visual method to edit web configurations and create repeatable actions

ECOSYSTEM AND EXTENSIBILITY

Embraces web standards to work more easily with PHP and node.js

Provides a **common development platform** across clouds

Virtual Desktop Infrastructure (VDI)

EFFICIENT MANAGEMENT

Easy deployment automates deploying and configuring server roles

Unified administration uses a single, integrated console for management

Streamlined management helps IT manage pooled and personal virtual machines

BEST VALUE FOR VDI

User Profile Disk maintains user personalization in pooled deployments

Fair Share dynamically distributes bandwidth, CPU, and disk use

Multiple storage options support direct-attached, network-attached, or storage area network (SAN) storage of virtual machines

RICH USER EXPERIENCE

RemoteFX for wide area network (WAN) dynamically detects network conditions and tunes experience

Graphics processing unit (GPU) support for both physical and software GPUs

USB redirection enables access to locally attached devices in remote desktops

Seamless experience supports multitouch, new Windows Experience, and Start menu integration

Identity and access

Protection of corporate resources

Data access management and protection

Simplified deployment and management of identity infrastructure

TOP FEATURES FOR IDENTITY AND ACCESS

- Dynamic Access Control
- Classification
- DirectAccess
- Simpler deployment of Active Directory
- Domain Name System Security Extensions
- Active Directory virtualization
- Active Directory cloning
- Kerberos constrained delegation
- Private VLAN
- Multitenant security and isolation

Dynamic Access Control

Classification

- Files inherit classification tags from parent folder
- File owners tag files manually
- Files are tagged automatically
- Files are tagged by applications

Access control

- Central access policies are based on classification
- Access conditions for user claims, device claims, and file tags are based on expressions
- Assistance is available for denial of access

Auditing

- Central audit policies can be applied across multiple file servers
- Audits for user claims, device claims, and file tags are based on expressions
- Audits can be staged to simulate policy changes in a real environment

Rights Management Services protection

- Automatic Rights Management Services (RMS) protection is available for Microsoft Office documents
- Protection is in near-real–time when a file is tagged
- RMS protection extends to files not created in Microsoft Office

DirectAccess

Enables dynamic cloud access

Ease of deployment

- Express setup wizard
- Ability to work with existing network equipment
- Connectivity to IPv4 and IPv6 servers
- Deployment mode supporting only remote management of mobile computers

Improved manageability

- Unified remote access management experience
- Enriched experience for monitoring remote client activity and status
- Reporting and accounting capabilities for audit/compliance
- Rich Windows PowerShell management interface
- Enhanced troubleshooting tools

Enabling new scenarios

- Multisite and hybrid cloud
- Support for one-time password and Trusted Platform Module authentication
- Provisioning support for off-premises clients
- Deployment of DirectAccess server behind network address translation device

Improved scale and performance

- Support for high availability and external load balancers
- Improved performance in virtualized environments
- Dramatically more users per server

Other Active Directory Improvements

- RID Improvements
- Deferred Index Creation
- Off-Premises Domain-Join
- Connected Accounts
- Active Directory–Based Activation
- Group Managed Service Accounts
- AD DS Replication and Topology Cmdlets

Migration

Migrate or upgrade?

Server migration

- migrating server configuration and data to a new server with a clean installed OS

In-place upgrade

- installation of a new OS to replace the existing OS on the same server.

Benefits of Migration

- Clean OS installs exhibit more stability
- Reduces risk and downtime
  - OS installation and most of migration tasks are performed while the old server is still operational
  - Allows to verify migration and benchmark performance before switching to the new server
  - Old server remains available if migration fails
- Provides a transition path from
  - x86 to x64 OS (WS2012 is x64 only)
  - Physical to virtual (and vice versa)
  - Full server to server core (and vice versa)
- No supported path for in-place upgrades from WS03 to WS12, but some settings can be migrated

Windows Server Migration Tools

- Feature of Windows Server 2012
- Powershell Cmdlets based
  - Provide the ability to run via automation or multi target
- Installed on both Source and Destination Servers
- Will install and run on full Server or Server Core
- May require temporary opening of Firewall ports for servers outside of Network
- Supports Migration on ALL editions
- Supports Migration to Physical or Virtual
- Supports Migration from x86 to x64
- Requires Admin privileges on both source and destination
- Migration Tools resources located here

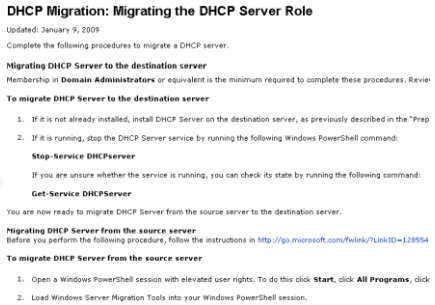
Migration Process Overview

TechNet Migration Portal

Discover

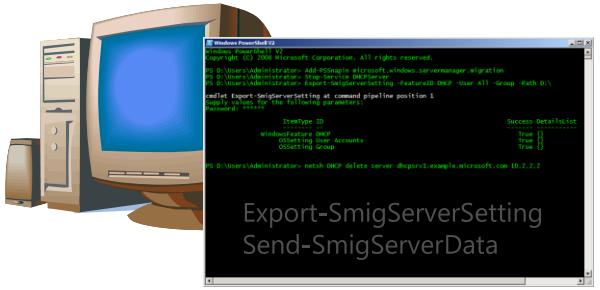
Prepare

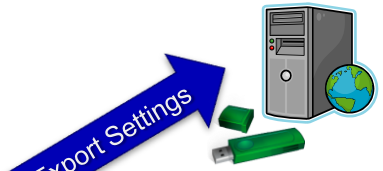
Migration Guides



Temp Storage

Source Server



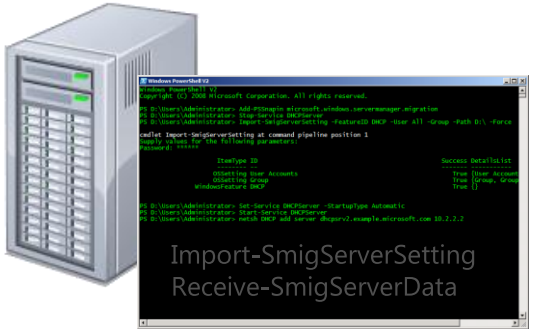


Export Settings

Import Settings

Transfer Data & Shares

Destination Server



Supported Scenarios

Category	Supported
Source Server OS	WS03, WS03R2, WS08, WS08R2 x86, x64; full server, WS08R2 server core; physical, virtual
Destination Server OS	WS08R2 x64; full server, server core; physical, virtual
Server Roles	ADDS, DHCP, DNS, File, Print Additional roles considered post RTM
Server Features	Branch Cache
OS Settings	Local Users and Groups, IP Configuration (IPv4 and IPv6)

Note: migrations from x86 to x64, between physical and virtual, between full server and server core are supported