



# Windows Server 2012 R2 Migration and Upgrade Guide

Guidance and resources for migrating from  
Windows Server

# Windows Server 2012 R2

migration process

# Windows Server 2012 R2 migration process

1. Discover  
Catalog your  
software and  
workloads



2. Assess  
Categorize  
applications and  
workloads



3. Migrate  
Make the move



# Discover

1. Discover  
Catalog your  
software and  
workloads



## Catalog your software and workloads running on Windows Server 2008

Self-service tools can help you with the process:

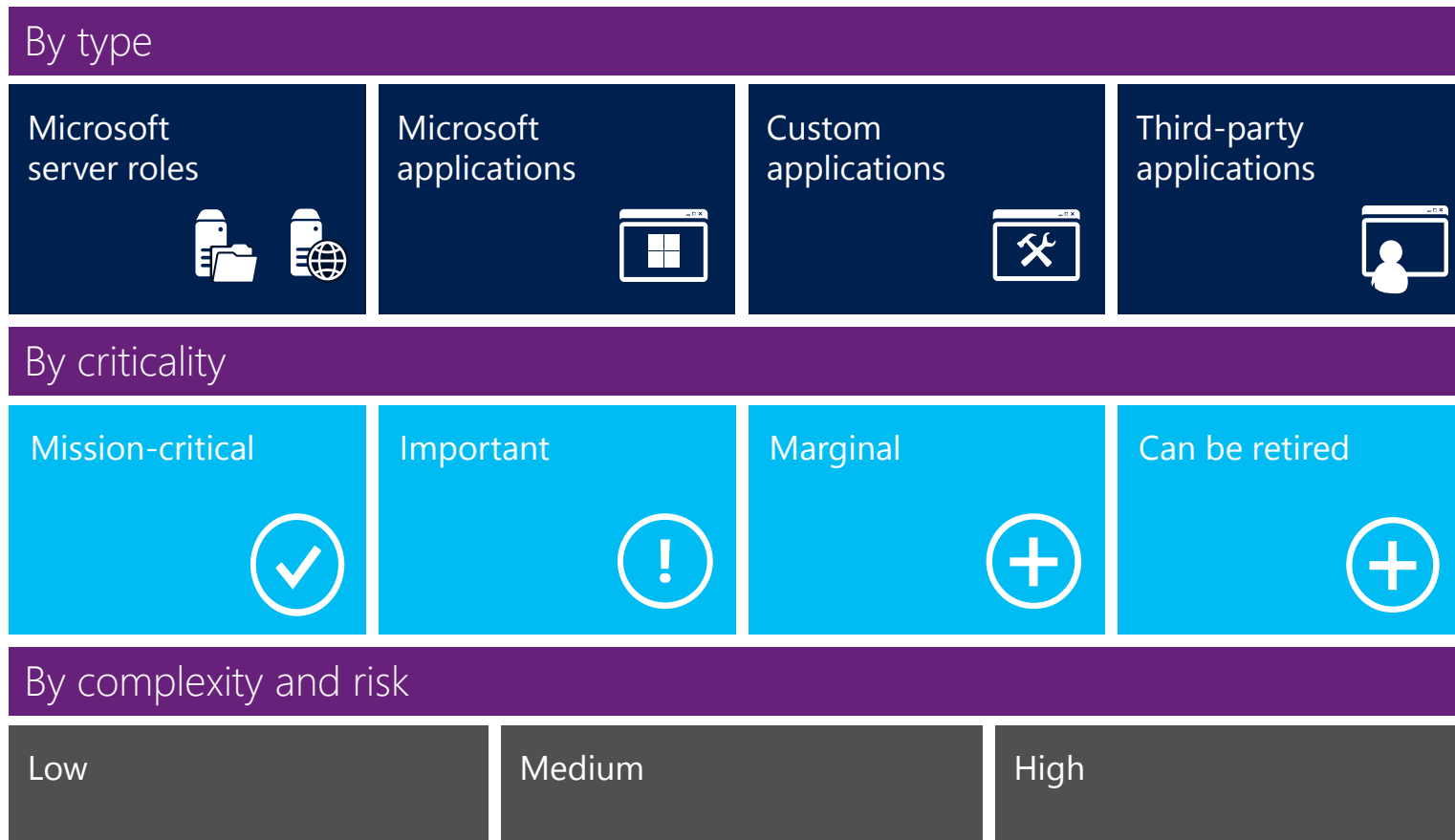
- [Microsoft Assessment and Planning \(MAP\) Toolkit](#)
- Third-party discovery offerings. (See Appendix.)



# Assess

## Categorize applications and workloads

After completing the assessment, you can prioritize workloads and applications for migration.



# Migrate



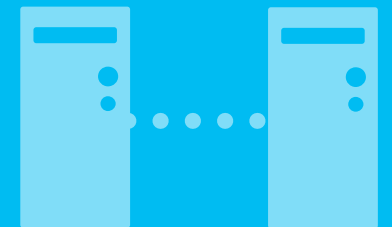
- [Disk2vhd](#)

Disk2vhd is a utility that creates VHD versions of physical disks for use in Microsoft Virtual PC or Hyper-V virtual machines.

- **Do-it-yourself tools**

Microsoft offers [Windows Server Migration Tools](#).

Several Microsoft partners offer do-it-yourself tools to assist in migration. (See Appendix.) .



# Windows Server 2012 R2

migration resources and tools

# Windows Server migration tools from Microsoft



## Install, Use, and Remove Windows Server Migration Tools

(How to migrate server roles, features, operating system settings, and other data and shares.)

<http://technet.microsoft.com/library/jj134202.aspx>



## Using the Windows Server 2008 R2 Migration Tools

(Use for additional context.)

<http://technet.microsoft.com/en-us/events/ee335985.aspx>



## Installing Migration Tools

<http://blogs.technet.com/b/matthewms/archive/2013/02/13/migration-and-deployment-installing-the-migration-tools-part-8-of-19.aspx>



## Microsoft Assessment and Planning Toolkit

(Use to inventory computers and applications.)

<http://www.microsoft.com/en-us/download/details.aspx?id=7826>



## Disk2vhd

(Use for VHD creation.)

<http://technet.microsoft.com/en-us/sysinternals/ee656415.aspx>



# General migration resources

- Server and cloud platform  
<http://www.microsoft.com/en-us/server-cloud/products/windows-server-2012-r2/default.aspx#fbid=g05NRtubdPw>
- Windows Server Technet Library documentation  
<http://www.microsoft.com/en-us/download/details.aspx?id=41182>
- Microsoft Virtual Academy training: Migrating to Windows Server 2012  
<http://www.microsoftvirtualacademy.com/training-courses/migrating-to-windows-server-2012-training>
- Microsoft Certification and Training Resources: Windows Server 2012  
<http://www.microsoft.com/learning/en-us/mcsa-windows-server-certification.aspx>
- Windows Server 2012 JumpStart  
<http://blogs.technet.com/b/jeffa36/archive/2012/08/22/windows-server-2012-jump-start-series-online-now.aspx>
- Migrating Roles and Features in Windows Server  
<http://technet.microsoft.com/en-us/windowsserver/jj554790>
- E-book gallery for Microsoft technologies  
<http://social.technet.microsoft.com/wiki/contents/articles/11608.e-book-gallery-for-microsoft-technologies.aspx#MigrateRoles>

# Specific server and service migration resources



Migrate Remote Access to Windows Server 2012

<http://technet.microsoft.com/library/hh831423>



Migrate Print and Document Services to Windows Server 2012

<http://technet.microsoft.com/library/jj134150>



Migrate Health Registration Authority to Windows Server 2012

<http://technet.microsoft.com/library/hh831513>



Migrate Hyper-V to Windows Server 2012 from Windows 2008 R2

<http://technet.microsoft.com/library/jj574113>



Migrate Network Policy Server to Windows Server 2012

<http://technet.microsoft.com/library/hh831652>



Migrate Windows Server Update Services to Windows Server 2012

<http://technet.microsoft.com/library/hh852339.aspx>



Single Hyper-V Server Running Windows Server 2008 R2 with GUI in Place Upgrade to Windows Server 2012 with GUI

<http://social.technet.microsoft.com/wiki/contents/articles/16289.single-hyper-v-server-running-windows-server-2008-r2-with-gui-in-place-upgrade-to-windows-server-2012-with-gui.aspx>

# Windows Server 2012 R2

workload, role and application  
migration resources

# Active Directory migration

Active  
Directory



File  
server



Application  
server



Terminal  
Services



Web  
server



# General Active Directory migration resources

Active  
Directory



Migrate Windows Server 2008 R2 Active Directory Domain Services To Windows Server 2012

<http://blogs.technet.com/b/canitpro/archive/2014/05/28/step-by-step-active-directory-migration-from-windows-server-2008-r2-to-windows-server-2012.aspx>



How to Migrate Windows 2008 Active Directory to Windows 2012 Active Directory

<http://social.technet.microsoft.com/wiki/contents/articles/11993.how-to-migrate-windows-2008-active-directory-to-windows-2012-active-directory.aspx>



Active Directory Domain Services and DNS Server Migration Guide

[http://technet.microsoft.com/en-us/library/dd379558\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/dd379558(v=WS.10).aspx)



Migrating to Windows Server 2012 training: Upgrading Active Directory

<http://www.microsoftvirtualacademy.com/Content/ViewContent.aspx?et=2863&m=2857&ct=16753>

# Active Directory migration resources for specific servers and services



Active Directory Certificate Services Migration Guide for Windows Server 2012 R2

<http://technet.microsoft.com/en-us/library/dn486797.aspx>



Migrating Active Directory Federation Services Role Service to Windows Server 2012 R2

<http://technet.microsoft.com/library/dn486815.aspx>



RMS to AD RMS Migration and Upgrade Guide

<http://technet.microsoft.com/library/cc754277.aspx>



Active Directory Domain Migration From Windows Server 2008 to Windows Server 2012

<http://social.technet.microsoft.com/wiki/contents/articles/16268.active-directory-domain-migration-from-windows-server-2008-to-windows-server-2012.aspx>



Migrate DHCP Server to Windows Server 2012 R2

<http://technet.microsoft.com/library/dn495425.aspx>

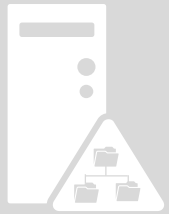


Upgrade Domain Services to Windows Server 2012

<http://technet.microsoft.com/library/hh994618.aspx>

# File server migration

Active  
Directory



File  
server



Application  
server



Terminal  
Services



Web  
server



# File server migration resources

File  
server



File and Storage Services: Prepare to Migrate

<http://technet.microsoft.com/en-US/library/dn479284.aspx>



Migrate File and Storage Services to Windows Server 2012 R2

<http://technet.microsoft.com/library/dn479292.aspx>



File and Storage Services: Migrate the File and Storage Services Role

<http://technet.microsoft.com/en-US/library/dn479285.aspx>



File and Storage Services: Migrate Network File System

<http://technet.microsoft.com/en-US/library/dn479295.aspx>



File and Storage Services: Migrate an iSCSI Software Target

<http://technet.microsoft.com/en-us/library/dn479297.aspx>



# File server migration

File  
server



## Migrating to Windows Server 2012 training

A. <http://www.microsoftvirtualacademy.com/Content/ViewContent.aspx?et=2863&m=2862&ct=16763>

B. <http://www.microsoftvirtualacademy.com/Content/ViewContent.aspx?et=2863&m=2862&ct=16765>



## File and Storage Services: Verify Migration

<http://technet.microsoft.com/en-us/library/jj863560.aspx>



## File and Storage Services: Post-Migration Tasks

<http://technet.microsoft.com/en-US/library/dn479290.aspx>

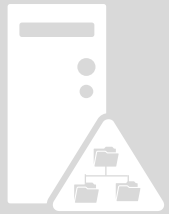


## File and Storage Services: Appendix A: Optional Procedures

<http://technet.microsoft.com/en-US/library/dn479298.aspx>

# Application server migration

Active  
Directory



File  
server



Application  
server



Terminal  
Services



Web  
server



# Application server migration process

1. Investigate  
origin of the  
application  
to determine the  
complexity of  
migration



2. Evaluate  
your application  
platform options

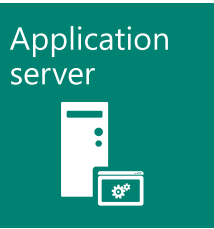


3. Review  
and weigh all  
application  
migration  
scenarios



Focus on controlling application migration costs.  
Do not delay. Start evaluating all applications now.

# 1. Investigate the origin of the application



Custom applications

Do not delay. Lead time and detailed planning are required.



Repair, rewrite, or refactor

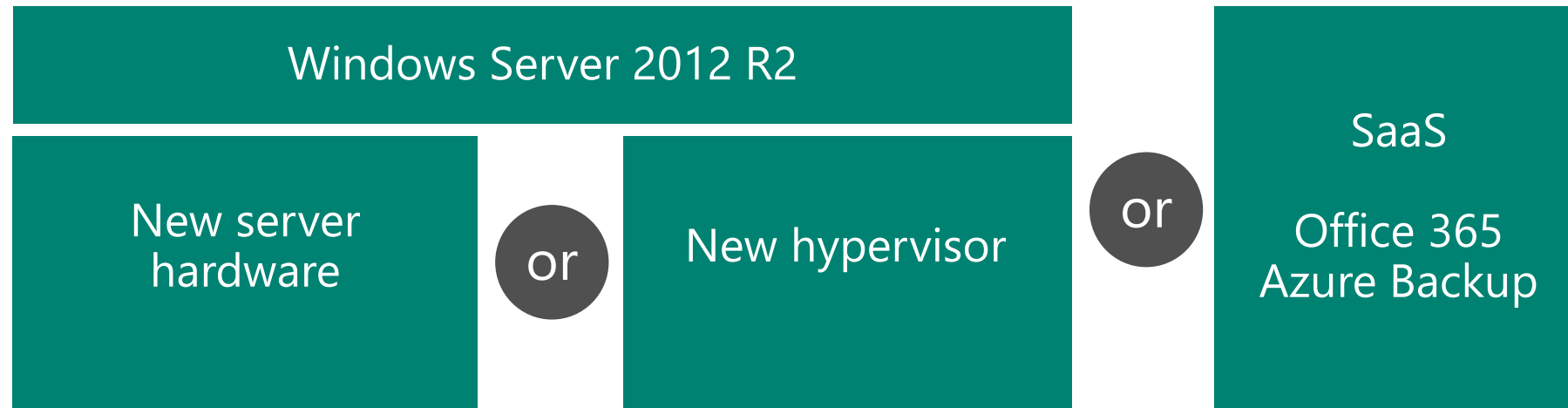
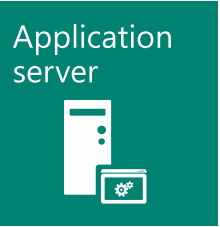
Third-party applications

New version from ISV and ISV migration resources can simplify any migration.

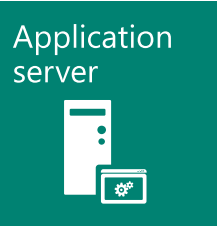


Upgrade

## 2. Evaluate all application platform options



# 3. Review application migration scenarios



Migrate as-is

A white arrow pointing to the right.

The application can be migrated without change

Find alternative

A white icon of a window with an arrow pointing from the window to the right.

Use a different app or SaaS offering to achieve the same business result

Repair, rewrite, or refactor

A white icon of a wrench and a hammer crossed.

Modify the application to work on the new platform

Virtualize or shim

A white icon of a window with two gears inside, enclosed in a dashed border.

Use technology to counter incompatibilities

Upgrade

A white icon of a stack of four blocks with an upward arrow on the top block.

The application must be upgraded to the latest version

# Application migration resources

Application  
server



Windows Server compatibility cookbook

<http://www.microsoft.com/en-us/download/details.aspx?id=27416>



Microsoft Application Compatibility Toolkit

<http://technet.microsoft.com/en-us/library/cc507852.aspx>



Migrating Clustered Services and Applications to Windows Server 2012

<http://technet.microsoft.com/en-us/library/dn530779.aspx>

# SQL Server migration

Application  
server



SQL  
Server

Exchange  
Server

SharePoint



# SQL Server 2012 migration resources

SQL Server

Exchange Server

SharePoint

Application  
server



## SQL Server 2012 Upgrade Technical Guide

<http://msdn.microsoft.com/en-us/library/dn144931.aspx>



## How to upgrade to SQL Server 2012 Technical Reference Guide

[http://blogs.technet.com/technet\\_blog\\_images/b/sql\\_server\\_sizing\\_ha\\_and\\_performance\\_hints/archive/2012/05/21/how-to-upgrade-to-sql-server-2012-technical-reference-guide.aspx](http://blogs.technet.com/technet_blog_images/b/sql_server_sizing_ha_and_performance_hints/archive/2012/05/21/how-to-upgrade-to-sql-server-2012-technical-reference-guide.aspx)



## A Step-by-Step Migration Guide

<http://sqlmag.com/sql-server-2012/migrating-sql-server-2012>

# SQL Server 2012 migration resources

SQL Server

Application  
server

Exchange Server

SharePoint



## SQL Server 2012 Upgrade and Application Compatibility

<http://social.technet.microsoft.com/wiki/contents/articles/7009.sql-server-2012-upgrade-and-application-compatibility.aspx>



## Upgrading to Microsoft SQL Server 2012 "Done Right"

<http://channel9.msdn.com/Events/TechEd/NorthAmerica/2012/DBI335>



## Upgrade Assistant Tool for SQL Server 2012

<http://social.technet.microsoft.com/wiki/contents/articles/2558.upgrade-assistant-tool-for-sql-server-2012.aspx>



## SQL Server 2012 Developer Training Kit

<http://social.technet.microsoft.com/wiki/contents/articles/6976.sql-server-2012-developer-training-kit-content.aspx>



## Upgrade Assistant for SQL Server 2012: Create a Test Environment

<http://social.technet.microsoft.com/wiki/contents/articles/2635.upgrade-assistant-for-sql-server-2012-create-a-test-environment/rss.aspx>

# SQL Server 2014 migration resources

SQL Server

Application  
server

Exchange Server

SharePoint



Upgrade to SQL Server 2014

<http://technet.microsoft.com/en-us/library/bb677622.aspx>



Upgrade to SQL Server 2014 Using the Installation Wizard (Setup)

<http://technet.microsoft.com/en-us/library/ms144267.aspx>



SQL Server 2014 Upgrade Advisor

<http://technet.microsoft.com/en-us/library/ee210467.aspx>



Planning a SQL Server Installation

[http://technet.microsoft.com/en-us/library/bb500442\(v=sql.120\).aspx](http://technet.microsoft.com/en-us/library/bb500442(v=sql.120).aspx)



Microsoft SQL Server 2014 Migration: Case Study Featuring In-Memory and Hybrid Cloud Scenarios

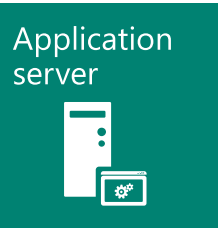
<http://channel9.msdn.com/events/TechEd/NorthAmerica/2014/DBI-B382#fbid=>



Microsoft SQL Server 2014: In-Memory OLTP End-to-End: Preparing for Migration

<http://channel9.msdn.com/events/TechEd/NorthAmerica/2014/DBI-B384#fbid=>

# Exchange Server migration



# Exchange Server migration resources

SQL Server

Application  
server

Exchange Server

SharePoint



## Time to Upgrade from Exchange 2003

[http://technet.microsoft.com/en-us/library/dn201758\(v=exchg.150\).aspx](http://technet.microsoft.com/en-us/library/dn201758(v=exchg.150).aspx)



## Upgrade from Exchange 2007 to Exchange 2013

<http://technet.microsoft.com/en-us/library/jj898581%28v=exchg.150%29.aspx>



## Planning and Deploying Exchange Server 2013

[http://technet.microsoft.com/en-us/library/aa998636\(v=exchg.150\).aspx](http://technet.microsoft.com/en-us/library/aa998636(v=exchg.150).aspx)



## Exchange 2003 Migration Toolkit

<http://blogs.technet.com/b/exchange/archive/2014/03/10/exchange-2003-migration-toolkit.aspx>

# Exchange Server migration resources

SQL Server

Exchange Server

SharePoint

Application  
server



Microsoft Exchange Server Deployment Assistant

<http://technet.microsoft.com/en-us/exchange/jj657516>



Microsoft Exchange Server 2013 Public Folder Migration

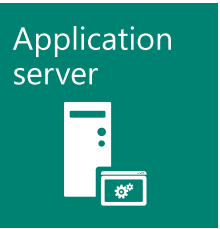
<http://channel9.msdn.com/events/TechEd/NorthAmerica/2014/OFC-B313#fbid=>



Microsoft Exchange Server 2013: Migration Experiences from the Field

<http://channel9.msdn.com/events/TechEd/NorthAmerica/2014/OFC-B326#fbid=>

# SharePoint migration



# SharePoint migration resources

SQL Server

Application  
server

Exchange Server

SharePoint



Upgrade and migrate to SharePoint 2013

<http://technet.microsoft.com/en-us/sharepoint/fp142375.aspx>



Install SharePoint 2013

[http://technet.microsoft.com/en-us/library/cc303424\(v=office.15\).aspx](http://technet.microsoft.com/en-us/library/cc303424(v=office.15).aspx)



Overview of the upgrade process to SharePoint 2013

[http://technet.microsoft.com/en-us/library/cc262483\(v=office.15\)](http://technet.microsoft.com/en-us/library/cc262483(v=office.15))



Best practices for upgrading to SharePoint 2013

[http://technet.microsoft.com/en-us/library/cc261992\(v=office.15\)](http://technet.microsoft.com/en-us/library/cc261992(v=office.15))



Upgrade service applications to SharePoint 2013

[http://technet.microsoft.com/en-us/library/jj839719\(v=office.15\)](http://technet.microsoft.com/en-us/library/jj839719(v=office.15))



Troubleshoot database upgrade issues in SharePoint 2013

[http://technet.microsoft.com/en-us/library/cc262967\(v=office.15\)](http://technet.microsoft.com/en-us/library/cc262967(v=office.15))



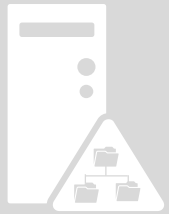
SharePoint for IT pros

<http://technet.microsoft.com/en-us/sharepoint/ee198298.aspx>



# Terminal Services and Remote Desktop Services migration

Active Directory



File Server



Application Server



Terminal Services



Web Server



# Terminal Services and Remote Desktop Services migration resources



Migrate Remote Desktop Services to Windows Server 2012 R2

<http://technet.microsoft.com/library/dn479239.aspx>



Remote Desktop Services – Upgrade Guidelines for Windows Server 2012 R2

<http://social.technet.microsoft.com/wiki/contents/articles/22069.remote-desktop-services-upgrade-guidelines-for-windows-server-2012-r2.aspx>



Remote Desktop Services migration to Windows Server 2012 R2

<http://blogs.msdn.com/b/rds/archive/2014/01/29/remote-desktop-services-upgrade-and-migration-guidelines-for-windows-server-2012-r2.aspx>



Migration Guide for RDS WS2008 R2 RDSH Farm to WS2012 RDS Deployments

<http://social.technet.microsoft.com/wiki/contents/articles/17021.migration-guide-for-rds-ws2008-r2-rdsh-farm-to-ws2012-rds-deployments.aspx>



Remote Desktop Licensing Website

<https://activate.microsoft.com/>



Migrate client Access Licenses

[http://technet.microsoft.com/en-us/library/hh553155\(v=WS.10\).aspx](http://technet.microsoft.com/en-us/library/hh553155(v=WS.10).aspx)

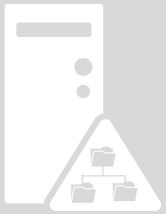


Migrate Remote Access to Windows Server 2012

<http://technet.microsoft.com/en-us/library/hh831423.aspx>

# Web server migration

Active  
Directory



File  
server



Application  
server



Terminal  
Services



Web  
server



# Web server migration resources

Web  
server



IIS Learning Center

<http://www.iis.net/learn>



IIS Easy Migration Tool (IEMT)

[http://www.iis.net/downloads/community/2013/04/iis-easy-migration-tool-\(iemt\)](http://www.iis.net/downloads/community/2013/04/iis-easy-migration-tool-(iemt))



IIS Sites Transfer

<http://www.iis.net/downloads/community/2008/11/iis-sites-transfer>



Installing IIS 8.5 on Windows Server 2012 R2

<http://www.iis.net/learn/install/installing-iis-85/installing-iis-85-on-windows-server-2012-r2>



Azure Web Sites Service

[http://azure.microsoft.com/en-us/solutions/web/?WT.mc\\_id=azurebg\\_us\\_sem\\_google\\_br\\_solutions\\_nontest\\_web&WT.srch=1](http://azure.microsoft.com/en-us/solutions/web/?WT.mc_id=azurebg_us_sem_google_br_solutions_nontest_web&WT.srch=1)



Windows Server 2012 R2 – Resolving Port Conflict with IIS Websites and Work Folders

<http://blogs.technet.com/b/filecab/archive/2013/10/15/windows-server-2012-r2-resolving-port-conflict-with-iis-websites-and-work-folders.aspx>



# Appendix

# Third-party tools for discovery

Catalog your software and workloads running on Windows Server 2008

1. Discover  
Catalog your  
software and  
workloads



Illustrates how each network component is related

Helps you:

- Identify outdated and replace inefficient servers
- Remove decommissioned servers
- Inventory apps
- Discover app dependencies
- Map app data sources



- Used in Dell global application factories
- Automates application compatibility testing, app remediation, packaging, and virtualization to reduce the risk of migrating
- Ensures app readiness
- Accelerates patch updates or deployments to new platforms



Provides change management, event management, application resource analysis, chargeback, virtualization assessment and planning, application pool design, and more

# Third-party tools for migration

## Make the move



### Citrix AppDNA

Discovers, automates, models and manages applications for faster application migration, easier application virtualization, and streamlined application management

### appzero

- Moves server apps to clouds or datacenter servers, without re-engineering, reinstallation, or lock-in
- Makes complex Windows Server apps moveable with one-click simplicity
- Automates the extraction of server-side apps to any cloud or machine in a fraction of the time required by other approaches—and with no change to the app



### ChangeBASE

- Used in Dell global application factories
- Automates application compatibility testing, app remediation, packaging, and virtualization to reduce the risk of migrating
- Ensures app readiness
- Accelerates patch updates or deployments to new platforms