

# Windows Server 2003/R2 End of Support | Migration

## WHAT END OF SUPPORT MEANS

Microsoft will end support for Windows Server 2003/R2 on **July 14, 2015** 11:59:59 P.M. PDT

This can have a dramatic impact on the security and stability of your organization's infrastructure.

<http://migrationplanningassistant.azurewebsites.net>

## NO UPDATES OR PATCHES

Microsoft will no longer develop or release any updates or patches after ending support. To put this in perspective—37 critical updates were released in 2013 for Windows Server 2003/R2 under extended support. Imagine what impact zero updates will have on your infrastructure after end of support (EOS).

## NO SAVINGS

The costs of maintaining your legacy servers can add up quickly, including maintenance costs for aging hardware and added costs for intrusion detection systems, more advanced firewalls, and network segmentation. Staying put will likely cost more in the end.

## NO COMPLIANCE

After support ends, your organization will likely fail to meet most industry-wide **compliance standards and regulations**. This could result in lost business or dramatically increase the cost of doing business, in the form of high transaction fees and penalties.

## NO SAFE HAVEN

Without continued support from Microsoft, your virtualized and physical instances of Windows Server 2003/R2 will not pass a compliance audit. Microsoft Small Business Server (SBS) 2003 will also be affected.

## 01 Discover

**Discover** and catalog all of your software and applications running on Windows Server 2003/R2 with help from the following **tools**:

- + **Microsoft Assessment and Planning (MAP) Toolkit**—A free tool for collecting and organizing system-wide information from a single, networked computer
- + JumpStart for Windows Server 2003 from Microsoft Consulting Services
- + **Microsoft System Center 2012 R2 Configuration Manager**—A set of tools for consolidating your hardware and software assets, managing your licenses with software metering, and tracking IT assets along with their users and location through the Asset Intelligence service
- + System integrators and Microsoft partner service providers

### WHAT YOU NEED TO DO

- Discover what's in your datacenter.**

Catalog all of your applications and determine their versions, licensing agreements, and what hardware they run on. To fully discover what's in your datacenter, use the free **MAP Toolkit** to create an inventory and assessment or use **System Center 2012 R2 Configuration Manager** to create a detailed, in-depth assessment:

  - + **Generate reports:**

Reports help administrators optimize hardware and software usage, improve IT operations, target migrations, and mitigate compliance risks.
  - + **Complete hardware inventory:**

Collect data about the servers on your network, including memory, operating systems, and peripherals. Support for Linux and UNIX is now included.
  - + **Complete software inventory:**

Track the software assets on your network, and get comprehensive details about both physical and virtual applications. Integration with the Asset Intelligence service gives IT administrators details about how software applications were installed, how users access them and how often, and whether they're in a physical or virtual environment.
  - + **Track software licenses:**

Take inventory of and manage software license usage with the Asset Intelligence catalog, a database that identifies 300,000 standard software titles and versions, and categorizes them. You can also add custom software categories and other information to the Asset Intelligence catalog.
  - + **Track software:**

With Asset Intelligence and software metering, you can reconcile software license usage with purchased software licenses deployed. Software metering and license usage reports, combined with information from the Asset Intelligence service, provide a wealth of information for administrators to track software use within the enterprise.
- Discover datacenter dependencies.**

Are you running any other applications that are dependent on Windows Server 2003/R2? Typically, legacy applications use Microsoft SQL Server 2005 (which reaches EOS on April 12, 2016) and may have a dependency on Windows Server 2003/R2. This expands your migration planning to include the number of SQL Server 2005 databases attached to each application currently supported by Windows Server 2003/R2.
- Get in touch with key stakeholders.**

Start talking to business stakeholders, IT developers, server and application teams, software vendors, and Microsoft partners. You will need their input for migration planning, and to understand potential pitfalls and the criticality of your solution or line-of-business (LOB) application.
- Define migration scope.**

Define the scope of your migration effort in a master document that includes a vision statement and incorporates the restraints imposed by time, resources, budget, and other limitations. Generally this involves using versioned releases to define an iterative approach to the project, where the project team identifies your organization's most essential needs and prioritizes deployment based on this assessment.
- Take inventory of your existing production servers and IT infrastructure.**

This will help you determine your installed application base and the types of hardware currently deployed in your organization. If you're using the **MAP Toolkit** to analyze your inventory, you can perform an assessment that shows which machines can run Windows Server 2012 R2, which applications can be migrated to Azure, and which applications are prepared for Office 365. The MAP Toolkit also generates a detailed report with an executive overview, assessment results, next steps, and a worksheet summarizing readiness for computers running Windows Server. The MAP Toolkit is available for Windows 8.x, Windows Server 2012 R2, Azure, SQL Azure, SQL Server 2014, and Office 365.
- Capture the performance metrics of your current IT infrastructure.**

A performance assessment helps you with consolidation and virtualization planning by generating reports on performance and consolidation recommendations for your servers. Use performance metrics captured both before and after the virtualization to estimate your server utilization.
- Determine which physical servers are the best candidates for virtualization, and the hosts on which you should place those virtual machines.**

If you have third-party inventory software, you can use it for reporting. For more complete reporting, use **Microsoft System Center**. The types of software and workloads that you will discover can be categorized into the following groups: Windows Server roles, Microsoft applications, custom applications, and third-party applications.

### WHAT YOU WILL ACHIEVE

- + Deep understanding of your organization's requirements to select and then deploy the appropriate solution for public, private, or hybrid cloud deployments
- + Identification of need for in-place upgrade, server migration, or migration to cloud solution or service
- + Adoption of tools for planning an upgrade and migration
- + A plan for server consolidation, cloud server deployments, and workload migration to Azure or Office 365

## 02 Assess

**Categorize** and **analyze** all of your cataloged applications and workloads based on type, criticality, complexity, and risk. This can help you to prioritize workloads and applications for migration by identifying both issues and opportunities, such as:

- + Vital business-critical applications and workloads that need immediate attention and additional capacity
- + Redundancies in your environment and mismatched service levels for availability
- + Applications without the right level of IT control
- + Misallocated resources for underutilized or unneeded business-critical projects
- + Business owners who have agreements with other vendors outside of the IT plan

### WHAT YOU NEED TO DO

- Get the right input from the business.**

What new capabilities are business decision makers looking for? How much does your organization want to expand? Where does the business plan to grow geographically? The answers to these questions will help shape and guide your assessment.
- Identify the owners and impact of each workload and application.**





Engage with the right people to determine your migration approach. For example, if you have several databases running on Windows Server 2003/R2, engage with the application team to discuss an upgrade to a supported version. Important stakeholders typically include executive sponsors, development teams, and application LOB owners, administrators, and users.
- Determine your "Six R's" strategy for each workload or application using the following:**
  - + **Determine applications for redeployment.**

Start a process for packaging or scripting applications that you plan to redeploy, so that you can reinstall them quickly and consistently without intervention.
  - + **Determine which applications to migrate to a platform as a service (PaaS) solution such as Azure.**
  - + **Define a strategy for applications that cannot be supported on the new platform.**
  - + **Determine if Unified Messaging infrastructure should be migrated to Office 365.**
  - + **Determine your public cloud infrastructure as a service (IaaS) strategy.**





This includes selecting which workloads are candidates for SQL Azure, or hosting virtual workloads on Azure or the **Cloud OS Network**.
- Organize applications and workloads based on type, criticality, and complexity and risk.**

To organize your applications and workloads, ask the following: What departments or customers use these resources today? Are they fully utilizing these resources? Do these applications or workloads align with business goals? What availability do they need and how much downtime is acceptable? Use the answers to these questions to build a decision matrix (as shown in the figures below) for each application.

#### By type:

 Microsoft server roles	 Microsoft applications
 Custom applications	 Third-party applications

#### By criticality:

 Mission critical	 Important	 Marginal	 Can be retired
May require more resources Likely to be required for compliance purposes Planning is critical Start now	Does it provide a competitive advantage? Could you do something different to drive more value?	Consider usage statistics What is the business value? Possibly retire or move to a different solution	Retire them

#### By complexity and risk:

1 - LOW
2 - MEDIUM
3 - HIGH

## 03 Target

During the **targeting phase**, your organization has the opportunity to transform the way it does IT by embracing new ways of delivering IT solutions to your users that are more efficient and cost effective. Choose a migration target destination for each application and workload from the following options:

- + **Windows Server 2012 R2**
- + **Microsoft Azure**
- + **Cloud OS Network**
- + **Microsoft Office 365**

Different workloads and applications will logically lead to certain targets. Others could offer the possibility of migration to one or more of these destinations. The choice will be driven by factors such as speed, ease of migration, cost, and desired functionality.

### WHAT YOU NEED TO DO

**Consider the following options when choosing a target destination for your applications or workloads:**

#### Windows Server 2012 R2 Target

- + **Upgrade on new hardware:**

This option is straightforward with little complexity and risk, but may not be the most efficient. Hardware requirements define the minimum hardware required to run the Windows Server 2012 R2 server, but your actual hardware requirements might be greater, depending on the server's load and responsiveness and the services that it hosts. Each role service and feature places a unique load on network, disk I/O, processor, and memory resources. For example, the File Server role places different stresses on server hardware than the DHCP role does.

#### Upgrade on virtual machine:

Windows Server 2012 R2 can be deployed on a virtual machine in your Microsoft Hyper-V or other hypervisor environment for increased operational efficiency, flexibility, and ease of management. Windows Server 2012 R2 virtualized deployments need to match the same hardware specifications as physical deployments. For example, when you create a virtual machine to host Windows Server 2012 R2, you need to configure the virtual machine with enough memory and hard disk space.

#### Upgrade on Azure virtual machine:

Using Microsoft Azure Virtual Machines unlocks development or migration of applications that have dependencies on resources that require virtual machines. You can quickly take advantage of Azure by migrating an existing application as-is using Azure Virtual Machines. You can also connect different application models such as Web Sites or Cloud Services web and worker roles with Azure Virtual Machines. Azure provides a new set of network virtualization and site-to-site VPN-based cross-premises connectivity capabilities. You can provision and manage Azure Virtual Network by using the Microsoft Azure Management Portal or by using a network configuration file. When you consider migrating on-premises applications to the cloud platform, be sure to carefully plan each migration phase. A typical migration project includes the following phases: analysis, application migration, data migration, testing and optimization, and operation and management.

#### Upgrade on hybrid cloud storage:

With a StorSimple device and some additional planning, you can use Microsoft Azure Storage to extend your on-premises storage to cloud-integrated storage.

#### Microsoft Azure Target

##### Migrate app to Azure PaaS:

Your custom applications can be migrated to Microsoft Azure PaaS services for the ultimate in capacity, flexibility, and reliability without the need to buy hardware or manage underlying infrastructure. You may be able to run the application as-is on Azure PaaS, but you will most likely need to refactor it to make it work correctly.

##### Migrate web application to cloud:

Moving directly to Microsoft Azure Web Sites is possibly the fastest migration path for web applications. Azure offers secure and flexible development, deployment, and scaling options for any sized web application. With Azure Web Sites, you can use your existing tools to create and deploy applications without the hassle of managing infrastructure.

##### Migrate database to PaaS cloud:

Possibly the quickest migration option, Azure SQL Database is a fully managed relational database PaaS offering that delivers flexible manageability, built-in high availability, predictable performance, and massive scale-out capabilities. Azure SQL Database is offered in different service tiers to meet basic and high-end needs, and it removes the need to manage hardware and infrastructure. Your applications may need to be refactored to run on Azure SQL Database. If you're running a hybrid cloud and on-premises architecture, you will need well-designed connectivity for your infrastructure.

#### Office 365 Target

##### Upgrade to SharePoint Online and Exchange Online:

One of the best options for migrating SharePoint or Exchange Online off of Windows Server 2003/R2 is Office 365, a cloud-based service designed to meet organizational needs for robust security, reliability, and user productivity. Office 365 will likely provide the fastest and easiest option for your migration. It can reduce your planning costs and may lead to overall cost savings by reducing hardware capital expenditures and ongoing operations costs. If you're running a hybrid cloud and on-premises architecture, you will need well-designed connectivity for your infrastructure.

##### Software as a service (SaaS) cloud:

One of the best options for migrating your third-party applications may be a replacement, cloud-based SaaS offering from the third-party that wrote your original software. This option may reduce your planning costs and may lead to overall cost savings by reducing hardware capital expenditures and ongoing operations costs.

#### Cloud OS Network Target

##### Upgrade on Cloud OS Network partner:

The **Cloud OS Network** is a select group of more than 100 service providers that partner closely with Microsoft to offer hybrid cloud solutions. Combining expertise in Microsoft technology, customer requirements, and geographic specialization, network members offer solutions based on the Microsoft Cloud Platform in over 600 local datacenters in addition to scenarios enabled by Azure.

### WHAT YOU WILL ACHIEVE

- + Completion of migration prerequisites in your environment
- + Preparation of migration tools, source server, and destination server or service:
  - + Windows Server Migration Tool
  - + Azure Migration Accelerator
  - + Office 365 Deployment Guide

ID	APPLICATION	OWNER	Server role	Microsoft app	Third-party app	Custom app	Rehost	Refactor	Revise	Rebuild	Replace	Retire	Marginal	Important	Critical	Complexity (1-3)	Risk (1-3)	Windows Server 2012	Microsoft Azure	Cloud OS Network	Microsoft Office 365	Migrate as-is	Upgrade version	Switch app vendor	Virtualize/shim app	Repair/rewrite/refactor
01	Exchange	Denise Smith			●				●							●	1	1		●			●		●	●
02	Web Server	Qiong Wu		●					●						●		2	2		●			●	●	●	●
03	Shipping Services	Naoki Sato					●				●					●	2	1		●		●	●	●		
04	Quick Quarter Close	Daniel Roth					●	●						●			2	2	●				●	●		

## WHAT TO LOOK FOR

During the discovery process, look for other outdated solutions such as Exchange Server 2003 (which has already reached EOS) or SQL Server 2005 (which will reach EOS on April 12, 2016). Also, verify that none of your key infrastructure systems are using Windows Server 2003/R2. These systems may include but are not limited to:

- + Keypad or proximity entry systems that could leave your organization's physical security at risk
- + SCADA systems
- + Telephone systems
- + Specialized or appliance systems (such as Healthcare or Scientific)

You will need to work with the vendors of these systems to determine migration or upgrade paths. Failure to mitigate these systems may leave your entire infrastructure at risk.

## TO BE SUCCESSFUL

Embrace cloud technologies—Windows Server 2012 R2 will put you in a better position to move to the cloud.

Loop all of your key business and IT stakeholders in on migration decisions.

Avoid third-party virtualization providers who promise protection by migrating Windows Server 2003/R2 servers to their platform rather than migrating to Windows Server 2012 R2. Whitelisting leaves your environment vulnerable to risk and is not supported.

Migrate to the latest versions of Windows Server or SQL Server.

Replace or upgrade 16-bit applications instead of remediating them.

Some 32-bit applications will not install on 64-bit platforms without remediation. For example, many legacy Win32 applications used a 16-bit bootstrap and/or installer that will need to be programmatically removed or remediated through the use of **repackaging software**.

### Key compatibility remediation questions

- + Are your existing applications compatible running on the migration target (that is, Windows Server 2012 R2, Azure, or Office 365)?
- + Will your services be consistent while supporting your unique business operations?
- + Will the new solutions require new hardware or incur infrastructure expenses?
- + Does your organization have enough time, energy, and resources to remediate compatibility issues?

### How to take inventory of your existing applications

- + Check for unwanted and outdated applications.
- + Prioritize applications based on department, functional group, application committee, last use, or other criteria unique to your organization.
- + Decide which applications will need compatibility remediation planning.
- + Prioritize the packaging of applications based on volume or location.
- + Provide information on hardware that may need to be upgraded or replaced.

The **Application Compatibility Toolkit** is part of the **Windows Automated Installation Kit (AIK)** and can be used to remediate common compatibility issues.

### Rehost

In the discovery phase, you will identify applications that are compatible with modern operating systems. To rehost these applications, simply move them to a supported operating system without modifying their architecture. This allows you to move the application layer off of Windows Server 2003/R2 and run the applications on Windows Server 2008/2012 R2 or Azure IaaS.

- + If you're running a Windows Server 2003/R2 physical instance, you most likely will have to purchase new hardware or you can take advantage of a hoster's infrastructure offering such as the **Cloud OS Network** of hosters.

- + If you're running a Windows Server 2003/R2 virtual guest, then you will need to spin up either Windows Server 2008 or Windows Server 2012 R2 as the new virtual guest and move your application to this new virtual supported operating system.

- ⚠ Despite what some vendors may have said, running Windows Server 2003/R2 in a virtualized state does not make that instance supported, and it leaves your entire environment vulnerable. Don't leave your IT organization's data and solutions to whitelists—migrate to a supported platform.

### Refactor

In addition to running your applications within an Azure IaaS offering, you can also move to Azure PaaS where your developers can use its services to rework your applications or move to a PaaS delivery model such as Azure Websites.

### Revise

Some legacy applications will not be compatible with any supported operating system, but your development teams should be ready to review application requirements and either modify or extend—that is, revise—the code so that your legacy applications can run on a supported operating system. Microsoft Visual Studio Online offers you an easier way to host your entire organization on a single account.

### Rebuild

If you have applications that are not compatible and cannot be revised, then you will likely need to rebuild them with the help of an internal development team. Consider the move to Azure and Visual Studio Online for the development phase. This will speed up your project, and you can either move your rebuilt applications back to your on-premises environment or continue to run them within Azure.

### Replace

You can replace unsupported applications with assistance from numerous third-party applications, which may help you free up your development team to focus on applications that require customization for your business.

### Retire

Applications that cannot be remediated or replaced, or that are no longer in use, are likely candidates for retirement. Before retiring applications, consult with departments using them, identify the team that will retire them, and ensure that any business processes running on these applications can be supported on other applications.