Azure e-book series

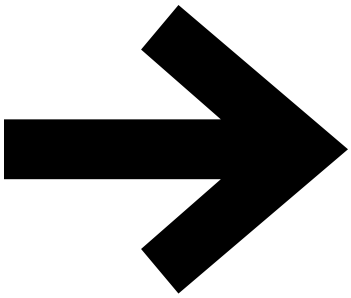
Microsoft

Lead your team through end of support

Windows Server 2008 and 2008 R2

Who should read this e-book?

This e-book is targeted to solution architects, IT managers, database administrators (DBAs), and IT pros.



01 Introduction

As technology continues to develop at an exponential rate, business dynamics are also changing—demanding the rapid transformation of business processes for better growth.

Microsoft server technology is no exception to this trend, entering the 2008 release with a shift from 32-bit to 64-bit computing and the early days of server virtualization. The 2008 family of products was groundbreaking for its time, but current versions of software and cloud services provide more powerful built-in security, as well as amplified performance and innovation. Windows Server 2008 mainstream support ended on January 13, 2015, and extended support is ending January 14, 2020—making now the ideal time to look for opportunities to transform your digital assets to the cloud.

This guide explores how enterprises can elevate their legacy applications from running on Windows Server 2008 or 2008 R2 by upgrading to the latest Windows Server on-premises or migrating to the cloud.

02
Time for a change: Windows Server 2008 and 2008 R2 lifecycle management

With the end of support for Windows Server 2008, Microsoft will no longer release security updates for any edition of Windows Server 2008 or 2008 R2, which may expose your organization to security vulnerabilities and noncompliance. The newer edition of Windows Server is a cloud-ready operating system that supports current workloads while also introducing new technologies to simplify the transition to cloud computing.

Depending on what you're running on Windows Server 2008, there can be multiple strategies for upgrading: move to a newer edition of Windows Server on-premises, establish a hybrid coexistence for the right mix of cloud-based and upgraded on-premises applications, rehost workloads in the cloud, or—eventually—rearchitect, rebuild, or build new applications native to the cloud.

An opportunity to transform

According to a recent IDC survey, cloud adoption is on the rise, with 87 percent of organizations saying they plan to merge their on-premises datacenter with the public cloud.[1] Moreover, worldwide spending on public cloud services and infrastructure is forecast to reach 160 billion USD in 2018, an increase of 23.2 percent over 2017.[2]

With nearly unlimited flexibility in terms of design choice, Azure can help organizations in search of a proven and consistent methodology for the adoption of cloud technologies. In addition, cloud computing can deliver significant cost savings over a traditional datacenter approach, thanks to abilities like quickly moving on-premises workloads to the cloud and easily building resilient apps that can scale up or down with the flow of traffic.

[1] Worldwide Semiannual Public Cloud Services Spending Guide. IDC

[2] Worldwide Public Cloud Services Spending Forecast to Reach $160 Billion This Year. IDC

03
Developing a cloud migration strategy

It's important to create an end-to-end project plan for migration that consists of estimated efforts and timelines required to complete the cloud adoption journey.

The migration process can be divided into three steps—Assess, Migrate, and Optimize—to solve the most pressing migration challenges and deliver the reliability, performance, and security that business stakeholders expect with limited impact on the business.

Step 1: Assess

Begin the Microsoft Azure migration journey by discovering and assessing existing apps and infrastructure. It is among the most critical tasks, as all other migration efforts—such as defining a migration portfolio, identifying migration scenarios, and executing migration from on-premises to the cloud—rely on the results of this assessment.

Assess the existing infrastructure

To accurately assess existing infrastructure, IT teams need to start by systematically reviewing the existing environment to determine what they have, where it is, what it does, and whether it's a good candidate for moving to the cloud.

To do this work, teams can leverage a comprehensive set of assessment tools and resources from Microsoft. These materials help identify which workloads are ready to migrate and what the priority workloads are. For different types of workloads, see the assessment tools described on the following page.

Azure Migration Center. Head to the Azure Migration Center to begin planning your migration strategy, find discovery and data migration software tools from Microsoft and our partners, and check out additional resources.

Microsoft Assessment and Planning (MAP) Toolkit. Collect and organize system resources and device information from a single networked computer. MAP performs four key functions: discovery and inventory of computers and applications, hardware and software migration readiness assessments, software usage tracking, and capacity planning for virtualization as well as public and private cloud migration.

Azure Migrate. Assess on-premises workloads for migration to Azure while evaluating your existing infrastructure with Azure Migrate. You can perform cloud suitability analysis of on-premises machines and performance-based sizing, with cost estimations provided for running your on-premises machines in Azure. After running a cloud assessment with Azure Migrate, begin migrating your on-premises virtual machines (VMs) to Azure using services including Azure Site Recovery and Database Migration Service. Visit the Azure Migration Center to learn more and to find discovery and data migration software tools from our partners.

Database Migration Guide. Get help with moving your data by consulting the Database Migration Guide, which provides comprehensive, step-by-step instructions. You can simply define your source and destination database platform for assistance with end-to-end guidance, including pre-migration, migration, and post-migration.

Migration partner tools. Use other Migration partner solutions to support the assessment process and beyond with tools like Movere, Cloudamize, CloudPhysics, Corent, TSO Logic, and Turbonomic.

Define the migration portfolio

To understand which applications to move—and when and how to move them—it's important to create a well-attributed catalog of IT-managed apps. Then you can weigh the relative importance of each attribute (for example, business criticality or the amount of system integration) to build a prioritized list. There might be many attributes, ranging from document classification types, to server counts, to protocols. Note that it's often useful to group these into sets of overall attributes.

Not all workloads are suitable for running in the cloud. Key factors include application attributes, business requirements, and compliance needs. Based on assessment results, on-premises workloads can be categorized into different levels of cloud migration suitability, such as:

Ready for migration
Can be lifted and shifted to Azure with no changes.

Optimized for cloud
Possible to rearchitect and then recode for cloud computing.

Redesign for cloud-ready
Must be modernized with cloud-native technologies.

Here, a compilation of customized line-of-business and enterprise applications make up 65 percent of the migration portfolio. Most of these have been identified as "first to move" and are basic web apps or solutions that can be directly migrated to Azure without any code changes. Some of the remainder are identified as candidates that are "next to move," with some code changes. A small portion are identified as "hard or costly to move," and less than 5 percent of applications will remain on-premises (Figure 1).

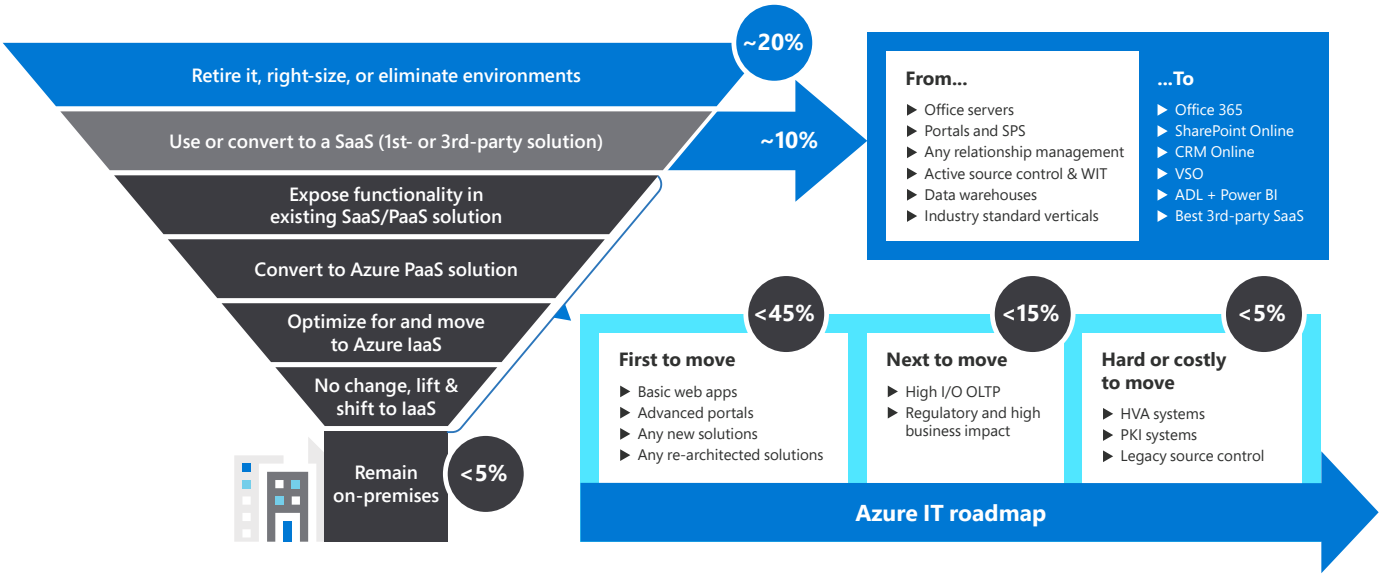


Figure 1: Assessing organizational infrastructure to prepare for cloud migration

Assess the risk of migration

With the migration portfolio created, it's time to assess the risk associated with migrating. Calculating the risk of migration depends on two factors:

Business impact. Score business impact by assessing how important the workload is to operations.

Complexity. Score complexity by evaluating how complex the application is and how well the team understands it.

A critical workload will score a higher risk even if it's simple, whereas a more complex but less-critical workload might score a lower risk—and thus be a better candidate for early migration.

Step 2: Migrate

As every application is unique, there's no single set of steps to follow for migrating to Azure. Some applications are ready to migrate, some may require minor changes in code, and still others may need a complete redesign to make them cloud-ready. Choosing the right migration approach for different applications in your portfolio can help you extract maximum value from cloud-enabled and innovative technologies.

Upgrade workloads that remain on-premises

A migration portfolio identifies workloads running on Windows Server 2008 or 2008 R2 that need to stay on-premises (Figure 2). By upgrading to the latest edition of Windows Server, organizations can take advantage of the benefits of cloud- and DevOps-ready infrastructure while still supporting current workloads. Organizations can choose from different upgrade options, based on technical feasibility and requirements.

Clean installation. If you want to move to the latest edition of Windows Server, you first move from your existing operating system to the latest edition of Windows Server on new hardware or VMs, and then move roles and services to new computers running a newer edition of Windows Server.

Upgrade. If you plan to remain on existing hardware, you might want to consider upgrading to a newer operating system, beginning with Windows Server 2012/2012 R2.

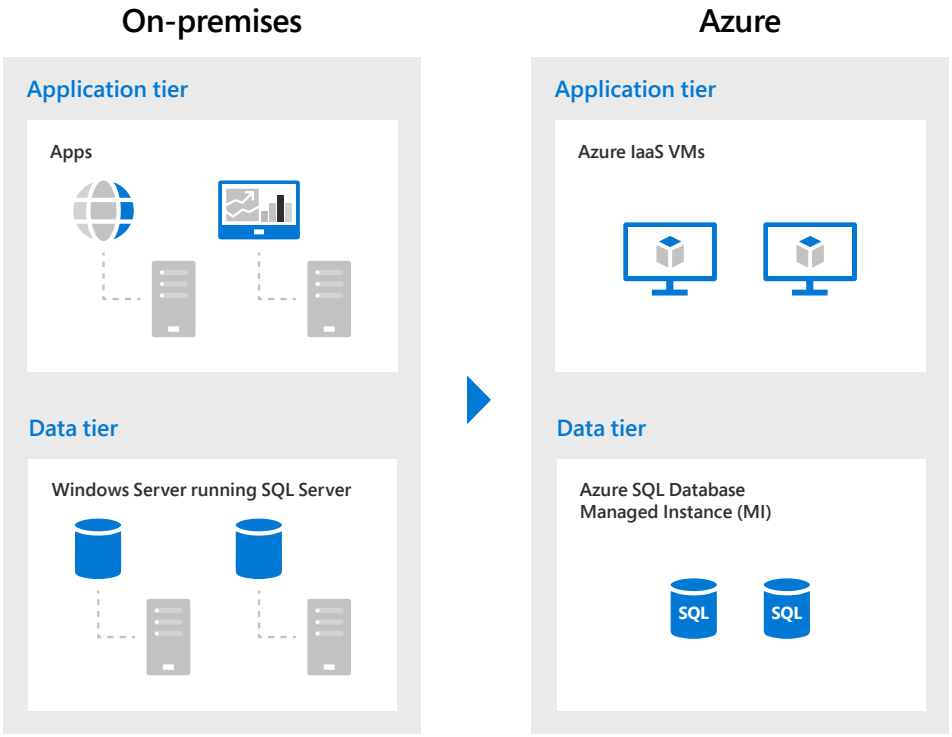


Figure 2: Identifying on-premises vs. cloud workloads in a migration portfolio

Migrate applications

A migration portfolio also identifies a group of applications that is ready to migrate without any changes required. Migrating these workloads by rehosting them to Azure can help to resolve on-premises challenges like application downtime due to hardware failure, isolated management of IT infrastructure, expensive and time-intensive procurement processes, inefficient disaster recovery, and inconsistent archiving. Rehosting is often referred to as a "lift-and-shift" migration. Rehosting can be considered a first step toward cloud adoption and is the fastest way to migrate because it doesn't require any code changes to your app.

Moving to the cloud enables better scalability, reliability, and security of the underlying application infrastructure; it also significantly reduces capital investments and overall operational cost.

Modernize applications

Modernize legacy applications for the cloud to digitally transform and make them future-ready. The right approach for modernizing your application workloads will vary based on business requirements, migration portfolio, and migration compatibility results. The applications to be modernized may require minor changes in code or need a complete redesign to make them cloud-ready. Common approaches include refactoring by moving applications into containers, rearchitecting using microservices architectures, or rebuilding using Azure platform-as-a-service (PaaS) solutions.

Refactor. Transforming your legacy application by modernizing your application deployment architecture to retain your existing application code and business logic.

Rearchitect. Rearchitecting to modify or extend the existing application's code base to optimize it for cloud platform and better scalability, including loosely coupled modules or functions that integrate to build a complete app.

Rebuild. Considering cloud-native technologies to leverage the high productivity of PaaS and rapid application development when building greenfield applications in this phase.

Learn more about these approaches.

Step 3: Optimize

Optimizing workloads on Azure is an ongoing process of continuously streamlining cloud resources to enhance security, improve performance, and maximize ROI. To do so, organizations can use Azure security and management offerings to govern, secure, and monitor their workloads in Azure. They can start leveraging the following offerings to run a secure, highly efficient, and well-managed environment.

Cost Management. With Azure Cost Management, you can manage your cloud spend with transparency and accuracy—giving you the tools to monitor, allocate, and trim your cloud costs so you can accelerate future cloud investments.

Security and governance. You can rely on the Azure Security Center for unified security management and advanced threat protection across hybrid cloud workloads, giving you full visibility and control over the security of your applications in Azure.

Cloud health monitoring. With continuous monitoring, you can get visibility into the health and performance of your apps, infrastructure, and data in Azure through monitoring tools like Azure Monitor, Log Analytics, and Application Insights (Figure 3).

Data protection. By backing up your apps in Azure with Azure Backup, you can avoid costly business disruptions, meet compliance goals, and protect data against ransomware and human error.

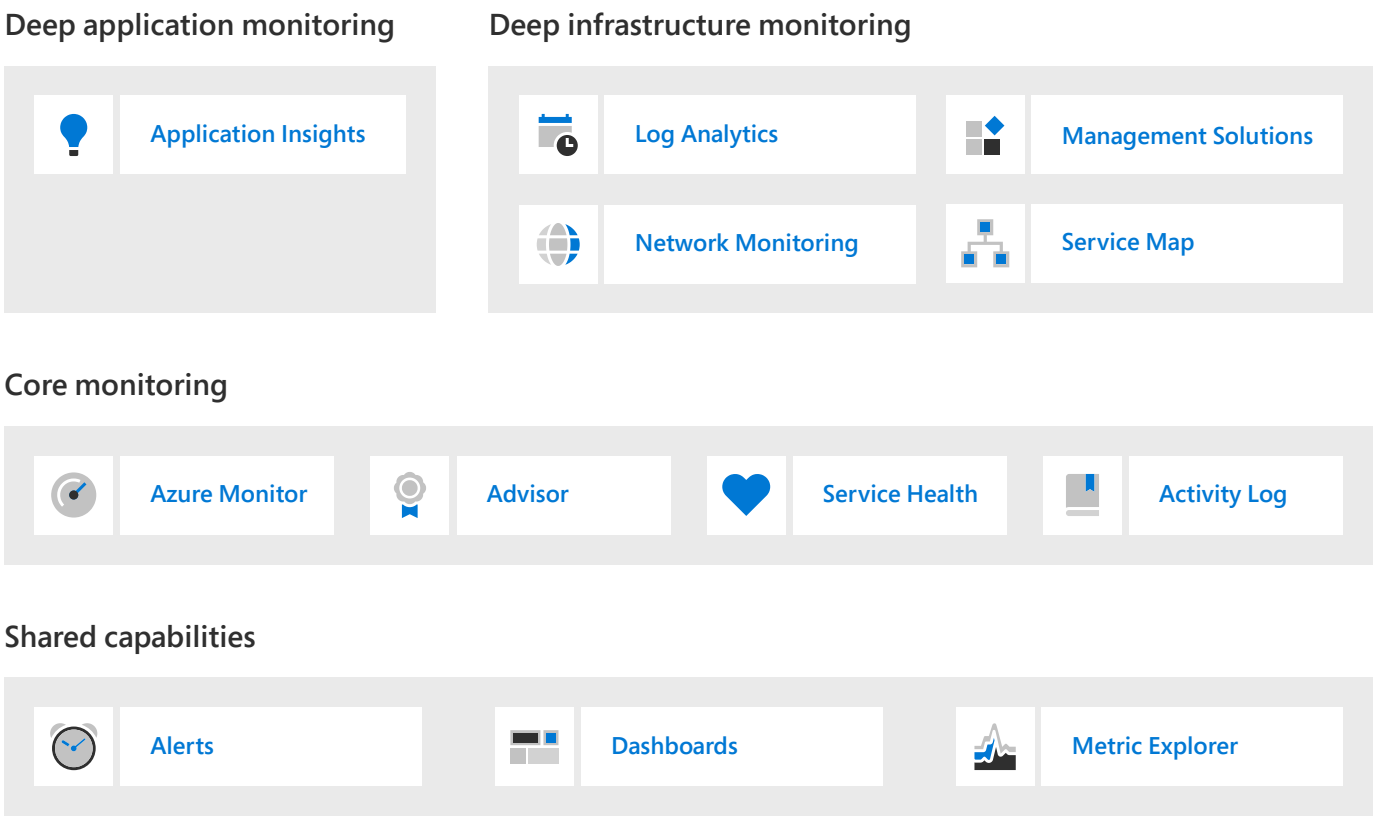


Figure 3: Azure offerings help manage, secure, and monitor workloads

04
Why migrate to Azure?

Azure provides a comprehensive cloud platform to meet modern, ever-changing business requirements. It gives you the freedom to build, manage, and deploy applications on a massive, global network using your favorite tools and frameworks. Azure is the most trusted cloud platform—startups, government agencies, and almost 90 percent of Fortune 500 businesses are using Azure.

The right cloud for Windows Server

You can migrate to Azure with confidence because it literally runs on Windows Server. Plus, it's easy to move workloads to the Microsoft cloud platform and still use existing skills, familiar tools, and established procedures. With Windows Server onboard, there's one place to go for support, and Windows Server licenses can be used to save on Azure IaaS. Azure is also the only consistent hybrid cloud that connects data and apps on-premises to those in the cloud.

Your organization is free to decide what computing resources stay in-house and what moves to the cloud.

Business value with transformation

Flexibility to deploy or develop. Azure allows you to quickly migrate, create, and configure new Windows Server VMs. With the proper tools and procedures, you can easily lift and shift Windows Server 2008 VMs on-premises to Azure.

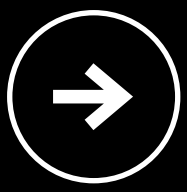
Global scale. For applications and workloads that are spread out geographically, moving to a cloud like Azure offers global distribution with defined service-level agreements (SLAs) on performance.

Improved security and compliance. Azure continuously protects data and its integrity with a robust suite of security monitoring tools and controls. Powerful network security, access and authorization controls, and auditing features add control and peace of mind.

Reduced maintenance overhead. You can reduce IT overhead and maintenance costs by moving line-of-business applications built on older editions of Windows Server and SQL Server to the latest editions—significantly reducing the work required to operate, secure, and maintain these apps.

05
Next steps

- End of support for Windows Server 2008 and 2008 R2 is scheduled for January 2020, so now is the ideal time to consider migrating to Azure.
- It's critical to develop a migration strategy to help ensure a seamless migration—a complete strategy should consider end cloud environment, training, and readiness of workloads and applications.
- To define a well-appointed migration portfolio, categorize different applications by grouping them based on migration compatibility results.
- The right migration approach depends on business requirements and technical feasibility, including upgrading, migrating, or modernizing Windows Server 2008 and 2008 R2 workloads.
- After transforming workloads to Azure, you can focus on optimizing them to enhance security, improve performance, and maximize ROI.
- Throughout the cloud adoption journey, Microsoft and partners provide tools, resources, and guidance: from assessing existing business processes and infrastructure, to performing workload and database migration, to managing and optimizing post-migration workloads in Azure.



Prepare for Windows Server 2008 and 2008 R2 end of support.

Sign up for an Azure free trial—$200 credit for 30 days, 12 months of free services.

Learn more about Azure Migration Center.

Create your free Azure account and start exploring it.

Train to build expertise in Azure.

Find the right partner for your needs.