Azure eBook series

Microsoft

From end-of-support to Azure – a migration path

01
Introduction

With support for Windows Server 2008 ending in the near future, cloud adoption provides considerable value over other alternatives, offering greater scalability, cost efficiency, control over security risks and improved performance. Specifically, Windows Server 2008 and 2008 R2 will reach end of support on 14th January 2020. As such, Microsoft Azure now includes three more years of security updates for Windows Server 2008 and 2008 R2 at no additional charge.

Organisations are looking to quickly take advantage of this value by migrating their existing applications and workloads. To enable successful migration, it's important to have a strong plan in place that covers the end-cloud environment, training and, most importantly, the readiness of your workloads and applications.

If you're an IT manager running on-premises applications and servers, this eBook is designed to help you start a migration to the cloud.

In this eBook, you'll find:

An overview of steps to consider when planning a migration

Various approaches for rehosting workloads for the cloud

Information about tools you can use to accelerate migration

With the right tools and processes, your migration project can be fast and effective, and enable you to focus on future cloud modernisation

One of our big objectives was to eliminate $3 million in capital costs over about three years, and to reduce our operating costs by approximately the same amount. At the same time, we wanted to improve our quality of service. With Azure, we're confident that we'll meet those goals.

Jim Slattery

Chief Financial Officer

Capstone Mining [1]

[1] https://customers.microsoft.com/story/capstone-mining

Why migrate now?
At first glance, migration might seem like a technical decision, but at its core, it's a business decision.

With end of support for Windows Server 2008 quickly approaching, the benefits of the cloud are clear – reduced operating costs, faster modernisation capabilities and increased security.

Other benefits that might factor into your migration decision include the following:

Decreased time to market/release

Support for more cost-effective scalability requirements

Renewal of datacentre lease, hardware leasing or software licensing

Application development flexibility and modernisation

02

How do you approach cloud migration?

Sometimes cloud migration can be simple, with only a few decision points. Your case might be more complex, depending on how many servers and virtual machines (VMs) you use. Your migration could require you to run parallel and iterative migration processes as you progressively move your applications and workloads to the cloud.

Rehosting is also referred to as "lift and shift". This stage entails migrating your physical servers and virtual machines 'as-is' to the cloud. By simply shifting your current server environment straight to infrastructure as a service (IaaS), you reap the benefits of cost savings, security and increased reliability (Figure 1).

In the new rehosted cloud model, hardware and operating systems you previously managed yourself are now managed by the cloud provider. All other aspects of the workload or application remain the same. This is the most popular migration approach because it lets organisations move quickly, with little risk or impact and receive immediate benefits. It also reduces the total cost of ownership (TCO) faster, enabling investment back into the migration process to evolve through the model.

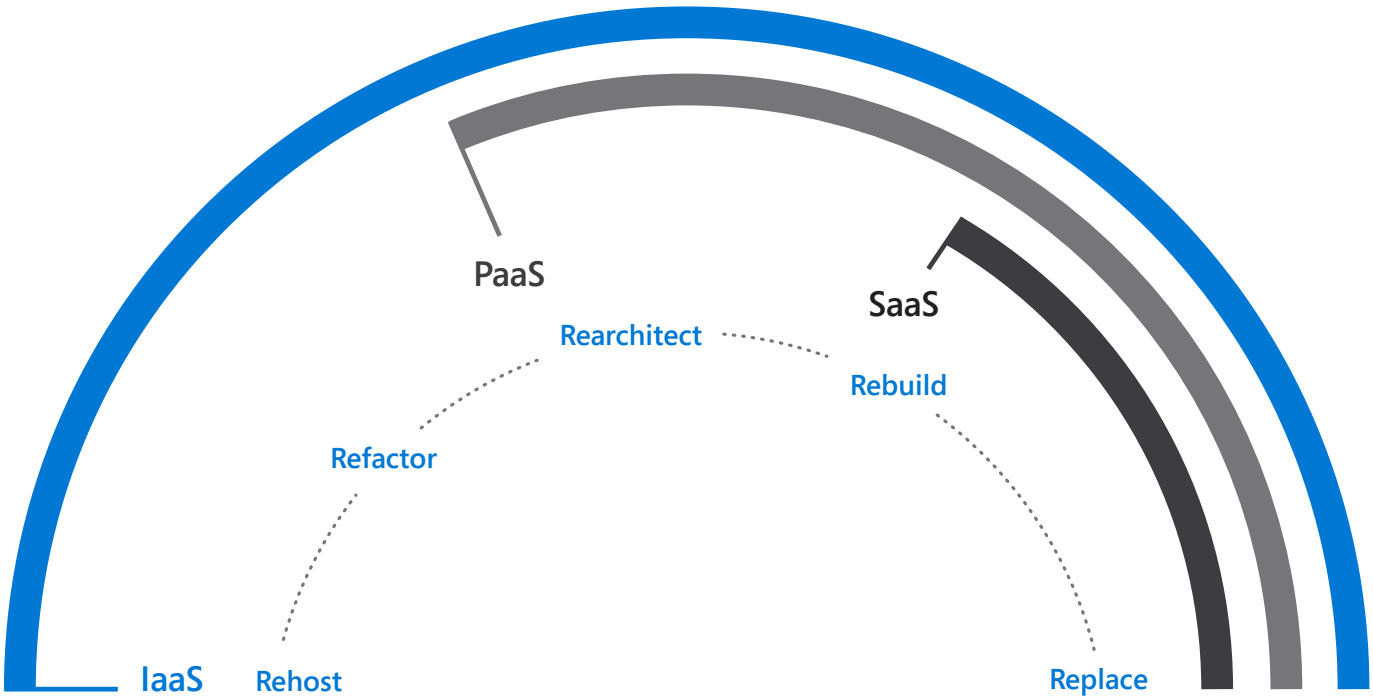


Figure 1: Rehosting is one of several cloud operating models that can be used for migration.

For further information about the following cloud operating models, check out the Azure Migration Centre

Refactor

Rebuild

Re-architect

Replace

With your migration goals in mind, Microsoft recommends a simple three-step migration process for moving to the cloud (Figure 2).

This process provides a clear picture of your entire application and workload portfolio, the best way to configure applications and workloads to achieve migration, convenient tools to ensure low-impact transfer, and ongoing performance and cost optimisation.

Before you migrate

Prior to migration, there are a few things to consider, such as building a virtual datacentre in your cloud – including connectivity, networking, storage and identity.

You'll also need to get up to speed on new skills. Azure Essentials can help with this by providing unique learning paths focused on job roles. This readiness tool offers simple online training in bite-sized pieces, practical labs and assessments to test your knowledge. It's the fastest way for your team to grow their skills, and it's free.

Beginning your migration

Consider an example where you use a migration process to move the bulk of your applications and workloads running in virtual machines to IaaS. The environment in this scenario is also set up in Azure with Azure Active Directory for identity management, with managed disks ready to receive data and virtual networks deployed.

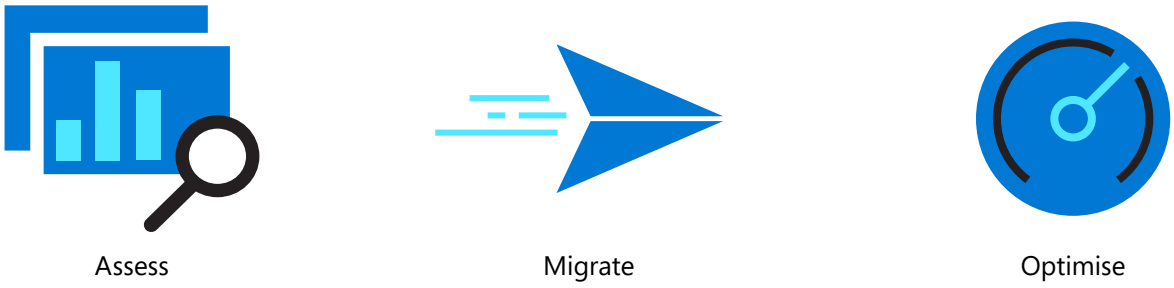


Figure 2: Three-step cloud migration process.

We don't want to be in the datacentre business; we're in the thread business. We plan to move 90% of our global datacentre infrastructure into Azure, and we're at about 75% now. The only things we'll leave on-site are a few domain controllers and file/print servers.

Richard Cammish

Chief Information Officer

Dillon Gage [2]

[2] https://customers.microsoft.com/story/coats

03
Assess

Many workloads can run immediately on Azure without modification, while other workloads that have operational and application dependencies in an on-premises environment require further analysis and planning.

Assess in four steps
Technical and business planning for migration encompasses four straightforward steps (Figure 3).

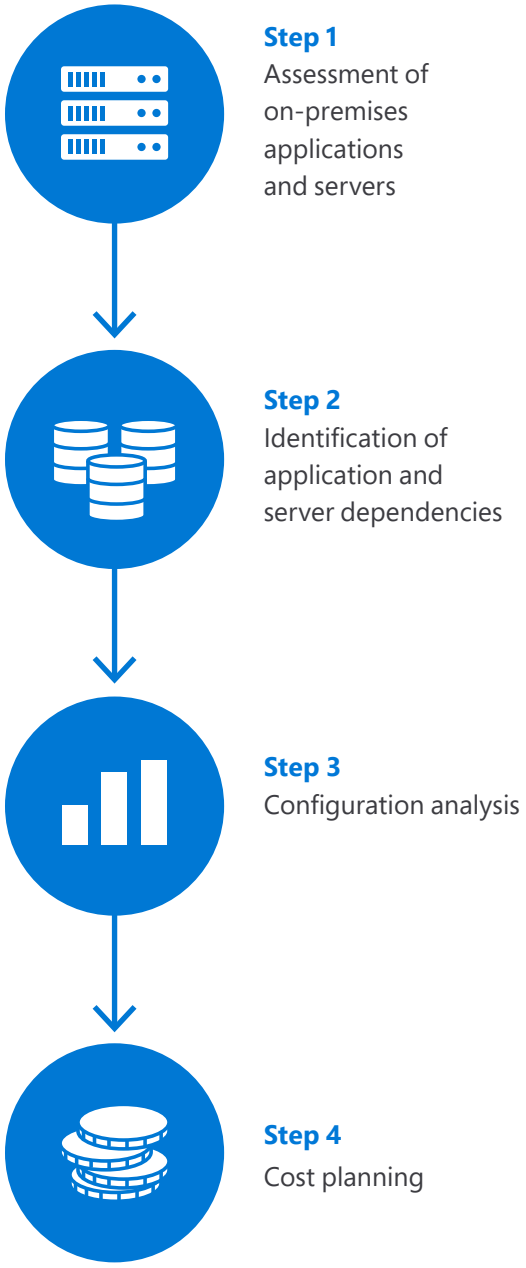


Figure 3: Four steps for technical and business planning for migration

Tools for assessment

Microsoft offers Azure Migrate to provide automation for assessment. Using this and other tools can help you maximise the benefits of moving to Azure, and identify where programmes like Azure Hybrid Benefit best fit into your migration to save further budget. With Azure Hybrid Benefit, you can use your on-premises Windows Server licences with Software Assurance when migrating and save up to 40% in Azure VM runtime costs.[3]

For further information on these tools, explore the following resources:

Azure Migrate

Azure Hybrid Benefit

Azure migration partners

Azure for Windows Server apps

[3] Azure Hybrid Benefit. Retrieved from https://azure.microsoft.com/pricing/hybrid-benefit/

04
Migrate

This is where, after you've decided on your migration goals and gathered all requirements and constraints, you can choose the method of migration that works for you.

It's through the migration effort that you'll determine the approach that meets your requirements. This is best addressed on a per-application basis. Essentially, you're physically moving your workloads and applications (including their data) to the cloud and planning to retire the on-premises versions. Every organisation will have a different approach and mixture of rehosting, refactoring, re-architecting and rebuilding for their applications. The lift-and-shift method most often employed for server or VM migration is real-time replication, due to its flexibility and capability in staged migration.

Real-time replication

Real-time replication involves setting up a copy of the workload in the cloud and allowing asynchronous replication to keep the copy and the original in sync (Figure 4). This means that while you're building and executing your migration plans, any data or server updates are synced between the copies.

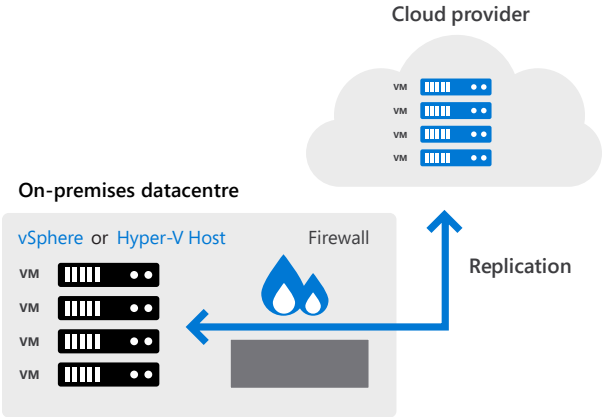


Figure 4: Using real-time replication to keep workloads in sync

Many tools also support application-aware replication automatically. Microsoft applications (like SharePoint, Dynamics and Active Directory) and apps from other companies (including Oracle, SAP, IBM and Red Hat) can be migrated with application-aware replication. ExpressRoute and Databox can assist with this. As you plan your migration timeline, also remember that migration tools can perform the final launch in your cloud and turn off the on-premises application.

To expand globally, we can simply clone the infrastructure that we have running in our US Microsoft Azure datacentre to Azure datacentres in Asia and elsewhere.

Tom Grounds

Chief Information Officer

Dillon Gage [4]

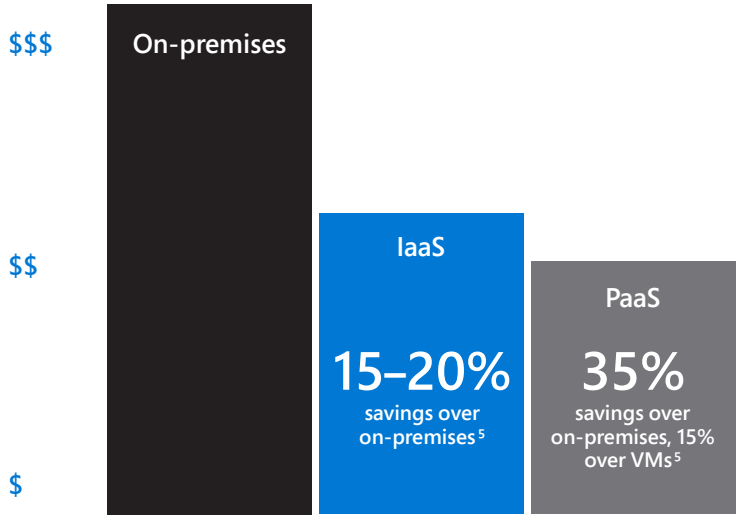
[4] https://customers.microsoft.com/story/precious-metals-dealer-ups-it-reliability-trims-costs

Driving application innovation

As you migrate your existing VMs to Azure, it's also the perfect time to continue on the path to application modernisation.

Why look at cloud optimisation so soon after migrating? To get more cost benefits through reduced management and operating expenses. By moving to platform as a service (PaaS), you can save an additional 15–20% or more by migrating workloads and applications – over and above the savings you're making today with IaaS (Figure 5).[5]

The PaaS services of immediate interest are containers, app services and database services.



Based on assumptions made in the Azure TCO Calculator

Figure 5: Cost savings of cloud optimisation

Tools for migration

The migration of servers and virtual machines is different for everyone, but multiple tools are available to support your needs. These tools include the Microsoft-provided Azure Site Recovery and third-party tools.

Learn more at the Azure Migration Centre.

[5] Based on assumptions made in the Azure TCO Calculator. Retrieved from: https://www.tco.microsoft.com/

05
Optimise

Once you've implemented your cloud migration strategy, you'll want to ensure that you're successfully taking advantage of the cloud's performance, scalability and cost-saving benefits. This will enable you to only pay for the services and resources you use, achieve a greater ROI and receive additional savings by taking advantage of the latest cloud capabilities. This is also the best time to start looking at new services for modernising your application – migrating to PaaS and even SaaS (software as a service) – where applicable.

Secure cloud resources
Ensuring strong security for your cloud-based resources is a shared responsibility between you and your cloud provider. Azure Security Centre provides unified security management and advanced threat protection across hybrid cloud workloads.

The Security Center enables you to take advantage of several capabilities, including:

Centralised policy management

Continuous security assessment

Actionable recommendations

Advanced cloud defences

Prioritised alerts and incidents

Integrated security solutions

Protecting data
Azure ensures workloads and data are fully backed up and protected from disasters, in addition to providing encryption of stored data for internal and customer security.

Check out these resources to learn more:

Virtual machine disk encryption

Virtual machine backup

Azure Site Recovery

Monitoring cloud health

Azure provides many monitoring services targeted at applications, workloads and core service health to ensure that you have full visibility of your system status for proactive and reactive analysis. In Azure, you can use either basic or premium monitoring services.

Basic monitoring services:

Azure Monitor

Service Health

Azure Advisor

Premium monitoring services also include:

Application Insights

Service Map

Network Watcher

Continual cost efficiency and optimisation

With a quick glance, you can determine the number of virtual machines that are consistently underutilised (that is, running below 90%). Then, with Azure cost optimisation sizing, you can find recommendations for which VMs require action, as well as the suggested instance change (including potential annual savings). As you continue to use your new IaaS environment, targeting maximum cost savings through Azure Reserved VM Instances (RI) becomes attractive. Reporting available in Azure Cost Management can recommend the workloads that would benefit from RIs, maximising your TCO.

Tools for optimisation

For further information about optimisation tools, explore these resources:

Security with Azure Security Centre

Azure Cost Management

Azure Log Analytics

Monitoring in Azure

Azure migration partners

06
Getting started

Use Azure to manage the Windows Server 2008 end-of-support transition. Azure now includes three more years of security updates for Windows Server 2008 and 2008 R2 at no additional charge. This means you can migrate your Windows Server workloads to Azure and get more time to upgrade – as well as add powerful Azure security options for additional protection.

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

Sign up for an Azure free trial – $260 credit for 30 days and 12 months of free services.

To learn more about options that meet your unique migration needs, visit the Azure Migration Centre.

Additional resources:
Azure Migration Guide for Windows Server

Remember that breaking your migration down into elemental steps can contribute to a more successful migration. You can start this process with a few applications and then expand to other applications in your environment.

The benefits of migration will be immediately apparent in your time and budget savings. The cloud will enable you to be more agile and, in many cases, respond to business needs faster. The cloud may even lower your TCO by as much as 84%,[6] freeing you to take that saving and invest it back into your business to drive modernisation faster. Plus, you can explore PaaS and SaaS options, decreasing your TCO even more while expanding your IT capabilities.

[6] Migrating VMware to Microsoft Azure: Total cost of ownership guidance. Microsoft, November 2017. Retrieved from: https://azure.microsoft.com/mediahandler/files/resourcefiles/vmware-to-azure-migration-tco-guidance/VMware_to_Azure_migration_TCO_guidance.pdf