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CLOUD MIGRATION GUIDE

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Building a digital platform

Cloud technology is no longer a fringe technology for early adopters. It is now the primary way organisations buy and consume digital services. The move to the cloud has been a huge driver of change, innovation and competitiveness for many organisations. The extent to which organisations embrace full public cloud vs private cloud vs hybrid models differs per industry and organisation but each model presents a wide range of benefits.

The latest research from the Cloud Industry Forum [CIF] reveals that the overall cloud adoption rate in the UK now stands at 88%, with 67% of users expecting to increase their adoption of cloud services over the coming year. However, while organisations are clearly taking a cloud-first approach, the industry body predicts that the vast majority of companies will be maintaining hybrid IT estates for some time to come.

In this guide, we explore how to plan a cloud migration, the steps you can take to prepare for a cloud migration and the Microsoft Technology you can use to easily meet your needs in the cloud.

At Bridgeall we have been working with Microsoft Cloud technology for over 10 years. Our wide range of experience across the full Microsoft Technology Stack including .NET, Azure, Office 365 & Power Platform. This ensures we help our customers take full advantage of the solutions available and migrate to the cloud in a way that is tailored to them.

THIS GUIDE COVERS:

- Moving to the cloud
- Cloud migration triggers
- Planning your cloud migration
- Managing the cloud migration
- Migrating to the Microsoft Cloud

Moving to the cloud

As already discussed, cloud usage is extremely high and by the end of this year it is expected that 83% of enterprise workloads will be in the cloud. The most common cited reasons to move to the cloud include:

1. **Reduces risk**

2. **Improves resiliency**

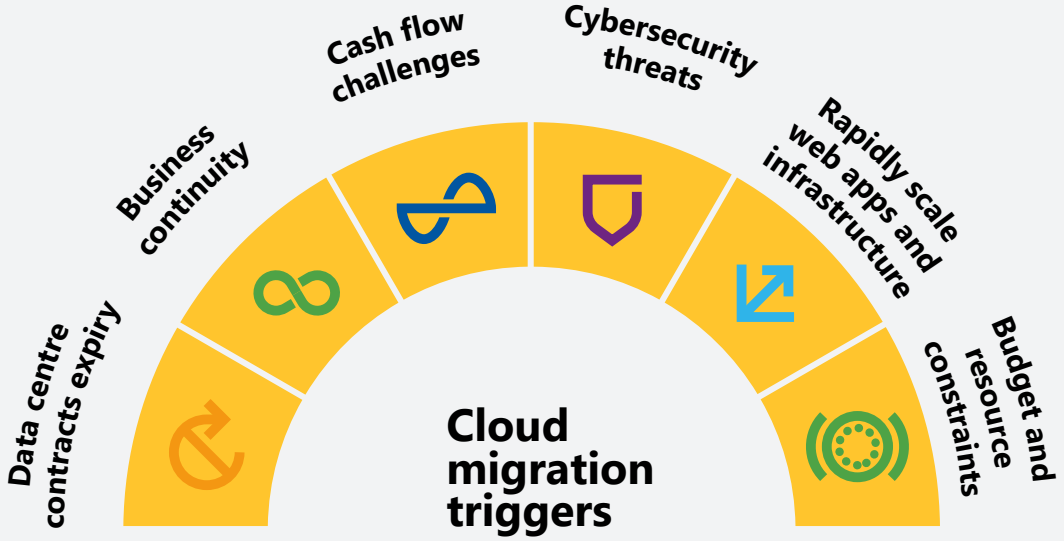
3. **Improves security**

4. **Manages and reduces total cost of ownership**

When considering moving on-premise assets to the cloud, organisations often look at the like for like features and in that regard cloud does normally come out in front. However, the real benefits of cloud is the realms of possibility. The digital platform you can create with all of your data, applications and infrastructure in one unified digital cloud platform.

The great thing about the move to the cloud is the flexibility and range of approaches. It can be done at your own pace and if you are not 100% sold on it, you can always consider a Hybrid approach to ease yourself into it. Hybrid cloud approach is very much still the dominant approach with most organisations.

The triggers that cause organisations to consider their own journey to the cloud can be a wide range of things including the following.



Managing your cloud migration

Once the decision has been made to migrate, it can be easy to rush in and start moving assets but it is important to have a strategy and a plan of attack.

Moving to the cloud is not a small undertaking and ensuring it is done correctly, with employee buy in, is a big driver of future success for your organisation.

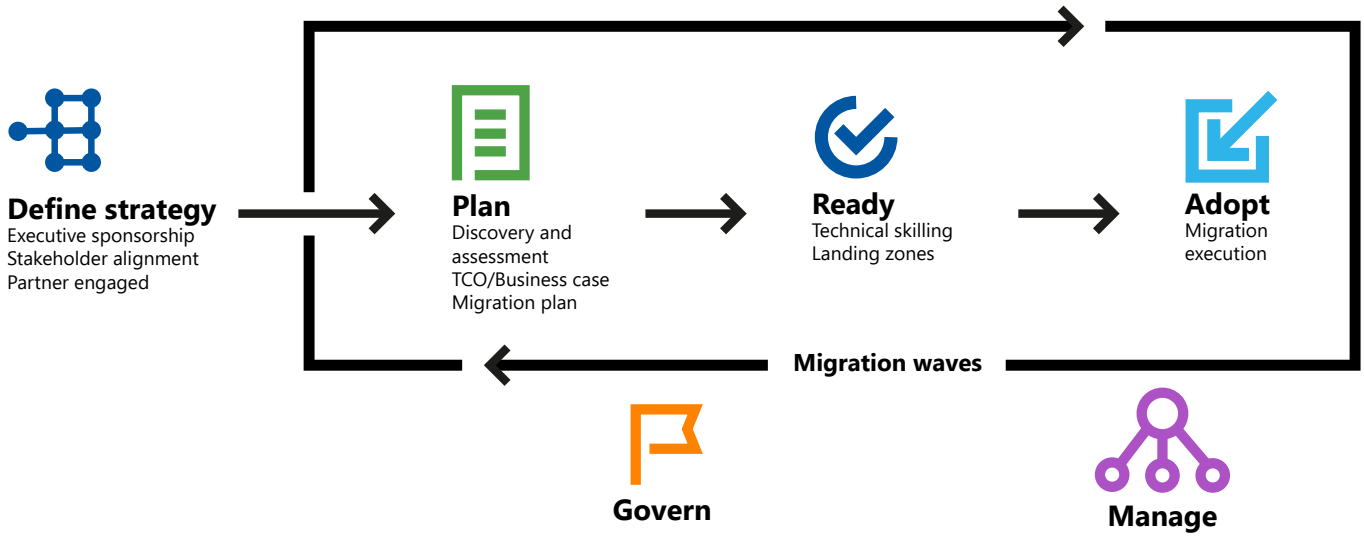
Cloud Migration Strategy

To take advantage of this potential, you need to document your strategy in a way that's both understandable to cloud technicians and palatable to your stakeholders, illustrating the reasons your organisation should migrate to the cloud.

Defining your strategy starts with initial exploration of the concept of cloud adoption and culminates in a more specific business case and commitment from leadership.

A critical aspect of any cloud migration strategy, often conducted with limited resources, is the need to prioritise, the need to do things in the right order and ensuring you have identified the best steps to start with. When looking at this, focus on quick wins or cloud solutions that unlock benefits for later stages.

Migration planning and execution



Migration waves

Once you have your cloud migration strategy defined and agreed it is important to break this down into deliverable projects. The ideal format is to have a small agile team that follows an iterative process for each project one at a time. It is critical to focus on three key steps: planning the migration, delivering the migration and ensuring full adoption of the cloud solution.

Planning the migration

At this stage you should focus on the specific requirement such as moving a SQL database or on-premise server or application. A focused analysis of the requirements and an assessment of what is needed to migrate this particular asset to the cloud is key.

Developing the business case and benefits of this particular project within your overall cloud migration should be a clear deliverable. The end result of the planning process should be:

- An identified cloud solution to migrate to
- A clear understanding of what you are migrating
- What technology/approach you are adopting for the migration
- What licenses or ongoing costs are required from the cloud solution
- How does this migration project benefit the business

Preparing for the migration

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

If your applications are composed of multiple servers or VMs, you should invest in a plan to consolidate these and shift them to the cloud.

Similarly, getting accurate cost comparisons can be challenging when you're estimating the load and Azure VM instances. Without automated analysis to map on-premise capacity to the VM instance, your estimations might fall short - causing performance issues. Alternatively your estimations could be too high, stretching your budget.

The migration

Using your application inventory, prioritise your applications into a migration plan based on business priority and complexity.

Then define the core team who will execute migration and define the right approach for your business case. An important aspect of any cloud migration plan is aligning the people who will make the plan a reality.

Having clear responsibilities and accountability in your team is key. You should have people in your cloud migration team that are responsible for cloud adoption and cloud governance and ensure that key metrics for success are defined.

Your migration could require you to run parallel and iterative migration processes as you progressively move your apps and workloads to the cloud. Whether your migration is simple or complex, it's helpful to think of the basic elements of the process.

Adoption

Once you have migrated to the cloud your job isn't finished. Ensuring the new solution is embedded into your organisation is critical.

Did you involve key stakeholders throughout the design process? Did you carry out robust user acceptance testing? Did you have a communication plan? Did you identify local champions? All of this will make for a more successful migration and improve adoption considerably.

How you roll out the solution, create super users and implement training will all be key to ensuring success.

Migration to Microsoft Cloud

We wanted to make cloud migration real for you by explaining our approach. The description below assumes an organisation is starting from a fully on-premise IT infrastructure and wants to move towards a hybrid or full cloud infrastructure.

We have detailed the steps required and the order we would deliver them to ensure a smooth transition towards a cloud-first business. Depending on your starting point, you may already have some of these steps in place or may not have the on-premise applications and workloads listed below.

Our proven approach below describes how we take a business from zero to full cloud in the best way possible.

Step 1 - Azure Active Directory

Azure Active Directory is always the first step of the process. It is a core requirement for any Office 365, Azure or Dynamics 365 implementation.

Azure Active Directory [Azure AD] is Microsoft's enterprise cloud-based identity and access management [IAM] solution. Azure AD is the backbone of the Office 365 system, and it can sync with on-premise Active Directory and provide authentication to other cloud-based systems via OAuth.

Azure AD incorporates comprehensive identity management capabilities which include multi-factor authentication, device registration, self-service password management, auditing, security monitoring and alerting.

Cost-effective and easy to use, Azure AD helps businesses streamline processing, and improve productivity and security, while single sign-on [SSO] gives employees and business partners access to thousands of cloud applications.

Azure Active Directory provides your organisation with an identity management solution to properly provide access and authentication to the full suite of cloud solutions.

Step 2 - Exchange online

No matter what your business does, email is a key tool and a quick win for moving to the cloud.

Exchange Online is a hosted messaging solution that delivers the capabilities of Microsoft Exchange Server as a cloud-based service. It gives users access to email, calendar, contacts, and tasks from PCs, the web, and mobile devices.

It integrates fully with Active Directory, enabling administrators to use group policies, as well as other administration tools, to manage Exchange Online features across their environment.

Migrating to exchange online provides you a number of benefits including:

- Reduced risk of data loss with improved backup and disaster recovery
- Improved control with the exchange online administration centre
- Improved levels of service and email on any device or browser

Step 3 - Cloud documents - OneDrive for Business

Following on from email, moving your employees personal documents to the cloud via OneDrive for Business has a number of benefits.

OneDrive has advanced features for version control, sharing, automatic saving and allows your employees to access and share their personal documents anywhere in the world. It provides improved security and control for your documents, replace email attachments in Outlook with OneDrive links, ensuring only permissioned people access your files.

Microsoft provide a migration tool to help move all of your files or once set up users can easily copy all files over to OneDrive for Business.

Step 4 - SharePoint and Teams - Collaboration spaces

After personal documents are migrated the next step is to move shared documents into SharePoint and Teams. Many organisations are plagued with massive shared drives of folders, no version control, no security or access management and can very easily be accidently deleted.

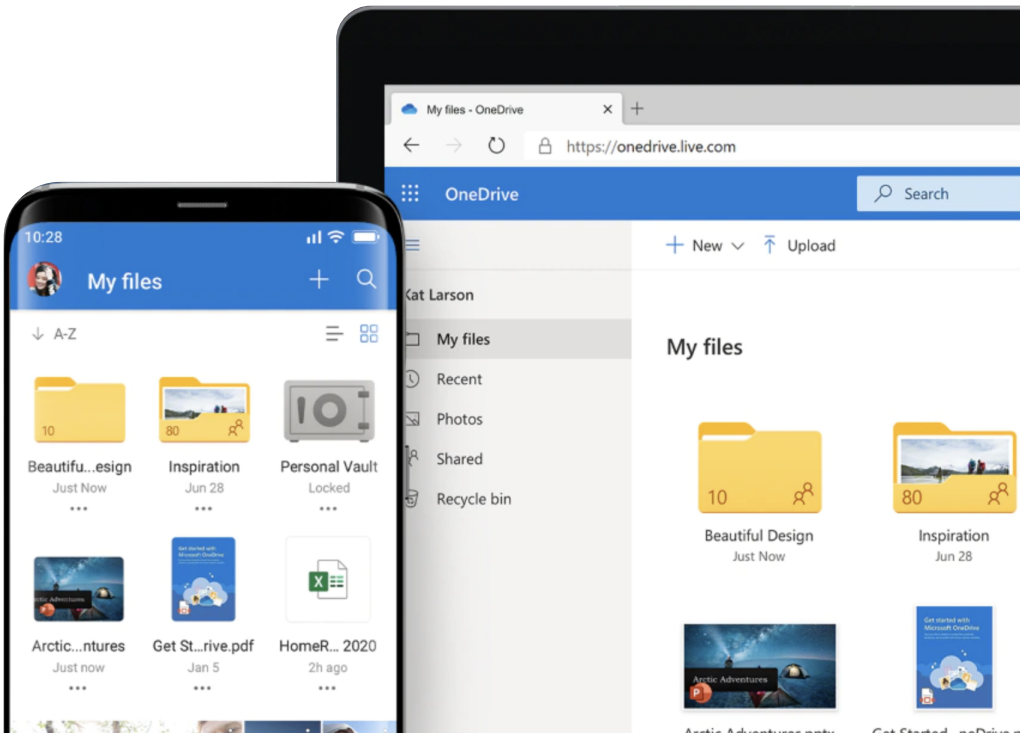
By moving to share spaces for collaboration it becomes simple and easy to manage shared documents, folders and communication by creating team and project spaces for collaboration and document storage. Each of these spaces can be access controlled via Azure AD to ensure only the right people within your organisation have access to the information.

The key here is to set up a clear structure and governance model to decide how to set up your SharePoint and Teams environment. What sites do you set up and who do you allow to create new ones?

Step 5 - Cloud Voice telephony and Teams communication

The last step in the Microsoft 365 stage of your cloud migration is to move away from on-premise desk phones and move to a cloud-based telephony service via Microsoft Teams.

This allows your users to have phone access via a work number on any device anywhere. It allows Teams to become the home of communication within your organisation for both internal and external communication.



Step 6 - Upgrading your business applications

Most businesses use standard COTS business applications to support key processes and departments. From finance systems, CRM systems, call centre applications, operations and supply chain ERP systems, HR systems and everything in between. Ensuring that these applications are up to date, secure, accessible and productive is one of the biggest areas of potential ROI for any organisation.

It is often the case that such business applications are out of support, with a limited and shrinking knowledge base from within your organisation. If your business applications haven't changed in 10 years while your business looks very different, then it is crucial that these get upgraded.

When moving your business application to the cloud there are a number of different routes that can be taken.

1. Lift and Shift - Infrastructure-as-a-Service [IaaS]: Move the existing on-premise application and host it in a Virtual Machine in Azure. This is the easiest option that provides the least range of cloud benefits but it will still improve the resilience and accessibility of the application.
2. Hybrid: When looking to update or add functionality to your existing legacy applications you can use the Power Platform. The Power Platform comes with an on-premise gateway connector that can be used to access your existing application.

   If the application only requires simple data entry, report running or processes, these inputs and outputs could be recreated as Power Apps, Power Automate workflows and Power BI Dashboards.

   This provides much of the benefits of a cloud system while still maintaining the on-premise solution. This could also be combined with an Azure Virtual Machine solution for an almost full cloud solution.
3. Upgrade to the vendor's Software-as-a-Service [SaaS] version. By upgrading your existing business applications to the vendor's SaaS version you ensure you are always on the most recent version and benefit from a much improved range of functionality, automation, reporting and user interface. The move to SaaS also allows you to move to a cost per user model rather than a big upfront capital expenditure approach.

Step 7 - Upgrading your custom applications

We have split out COTS business applications from custom applications, as they require a different approach.

With an existing legacy application that was custom made specifically for your organisation, the approach to cloud migration is a bit different. The approach will be determined by your objectives and business need for the application.

One solution that can provide many of the benefits of a cloud migration while maintaining the existing on-premise application is Windows Virtual Desktop [WVD]. WVD is a desktop virtualisation solution from Microsoft Azure. In essence it provides access to on-premise desktops and applications via the internet. The application will still be hosted on-premise but your employees can access it via Windows Virtual Desktop. This is not really a cloud migration step but provides many of the benefits via a cloud solution and is a low cost way of getting access to applications via the cloud, without migrating them.

For custom applications moving to the cloud there are three main routes.

1. Lift and Shift - IaaS - Moving the database and server to the cloud but keeping the application the same. Also referred to as lift and shift, this strategy entails migrating your physical servers and VMs to the cloud just as they are, without any changes to the code.

   By simply shifting your current server environment straight to IaaS, you reap the benefits of cost savings, security and increased reliability. The advantages of this strategy include: moving quickly with no code changes, the ability to have a cloud provider manage hardware and operating systems and realising lower TCO quickly.

2. Repackage - Also known as refactoring involves using additional cloud provider services to optimise the cost, reliability and performance by refactoring your applications.

   Your application can take advantage of IaaS and Platform-as-a-Service - PaaS - products such as Azure App Service, Azure SQL Database Managed Instance and containers. The advantages of employing modernised services in this scenario include: lower cost and management, using your current application as-is or with some minor code or configuration changes and connecting to new infrastructure services.

3. Rebuild - The rebuild strategy revises the existing application by aggressively adopting PaaS or even SaaS architecture. The advantages of this strategy include: building new applications using cloud-native technologies, faster development/deployment process, innovation opportunities that take advantage of advancements in technology like AI, blockchain and IoT.

Step 8 - Migrate existing infrastructure

Once the above steps have been carried out an analysis of the remaining on-premise infrastructure and servers needs to be conducted to identify the best way of upgrading them. Looking to move them to Virtual Machines in Azure could be an easy solution to start with.

Windows Server 2008 & 2008 R2

One area to consider is to migrate existing Windows Server 2008 and 2008 R2 workloads as-is to Azure Virtual Machines [VMs].

This migration to Azure automatically provides an additional three years of extended security updates [ESU]. There's no additional charge for extended security updates on top of Azure VM's cost, and there's no additional configuration required.

Purchase an extended security update subscription for your servers and remain protected until you're ready to upgrade to a newer Windows Server version.

These updates are provided for up to three years after the end of support lifecycle date.

Step 9 - Device Management - Microsoft Endpoint management

Microsoft Endpoint Manager helps deliver the modern workplace and modern management to keep your data secure, in the cloud and on-premise. Endpoint Manager includes the services and tools you use to manage and monitor mobile devices, desktop computers, virtual machines, embedded devices and servers.

Move user device management to Microsoft Endpoint Manager to simplify automated provisioning, configuration management, and software updates for all your endpoints, moving into a new world of remote working. Implementation of Cloud Operations with Azure Server Management Services.

Endpoint Manager combines services you may know and already be using, including Microsoft Intune, Configuration Manager, Desktop Analytics, co-management, and Windows Autopilot. These services are part of the Microsoft 365 stack to help secure access, protect data, and respond plus manage risk.

Step 10 - Leveraging Cloud data

At this stage of the migration all of your applications, infrastructure and servers are all in Azure or available as SaaS services. This opens up a new opportunity and one of the key areas of benefit from cloud is data. Now your data is easily accessible in the cloud you unlock three main areas:

1. Business Intelligence - Power BI is the Microsoft Business Intelligence platform. It does have the ability to connect to on-premise data but once you are in the cloud it is very easy to connect to your services. This allows you to create easy, real-time reports and dashboards to better understand your business and make decisions.
2. A unified data platform - This next step is a key enabler for any cloud-first business where you have all of your IT and data available in the cloud, unifying and tidying it up into one solution to enable easy reporting and analysis. Azure Data Warehouse [now known as Azure Synapse Analytics] is a solution for storing all of your organisations structured data. Azure Synapse is a limitless analytics service that brings together enterprise data warehousing and Big Data analytics. It gives you the freedom to query data on your terms, using either serverless or provisioned resources - at scale. Azure Synapse brings these two worlds together with a unified experience to ingest, prepare, manage and serve data for immediate BI and machine learning needs.
3. Artificial Intelligence and Machine Learning - With all of your operational data now accessible a next-level step for many organisations is to envision how AI can become more and more a part of your daily operation and the benefits this brings. The good news is that Microsoft Azure, along with the raw processing power required, has a number of services including ML Studio and Auto ML solutions for easy ready-made AI powered analytics to help your business make better decisions.

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Since 2003 Bridgeall has delivered advisory, development, implementation and support services to our clients on 100's of successful projects. We're a multiple Microsoft Accredited Gold Partner and ISO9001, IS027001 and Cyber Essentials accredited.

WE'LL HELP YOU BUILD YOUR MODERN INTELLIGENT WORKPLACE SECURELY AND QUICKLY.

Cloud Migration Briefing

Discover the full range of options and benefits of migrating to the cloud. Our cloud migration briefing is a free 2 hour briefing with one of our Microsoft certified Azure cloud consultants.

FIND OUT MORE >

Cloud Migration Assessment

Bridgeall provides a 2 day Azure Migration assessment to assess your current infrastructure, requirements and cloud readiness and provide a plan for migrating to Azure.

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