

July 2019

# AZURE MIGRATION ROADMAP

Client Branch Office

# AGENDA



## Executive Overview



## Findings & Recommendations



## Cost Analysis & Outcomes



## Next Steps & Migration



# VALOREM REPLY CLOUD CAPABILITIES

## Modernization      Innovation      Operations

Application Modernization



Data Modernization



Internet of Things



Modern Application Development



Big Data + Data Warehouse



Cloud Security



Dev/Test



Business Continuity



High Performance Computing



Mixed + Immersive Reality



BI + Analytics



DevOps



Datacenter Migration



Hybrid Datacenter



AI + Machine Learning



Bots and Cognitive Services



SAP on Azure



Application Insights



# ENGAGEMENT OVERVIEW

As a part of a larger Cloud Migration Strategy, client requested Valorem Reply perform a Migration Analysis on a small branch office. This will provide needed insight into the effort required to achieve organization-wide technical service and application platform modernization. Accordingly, this document outlines the key principles and analysis outputs for the specific migration effort and should be used as a general set of recommendations. During the next phases, deeper detail and analysis will be performed to output functional and technical requirements and cloud architecture.

## 1 PREPARDNESS

The virtual machines in this environment were analyzed for cloud compatibility, application dependency and network readiness.

## 2 ESTIMATED COST

Cloud infrastructure cost analysis included comparable on-premises virtual machines, required network configurations and other necessary functional components.

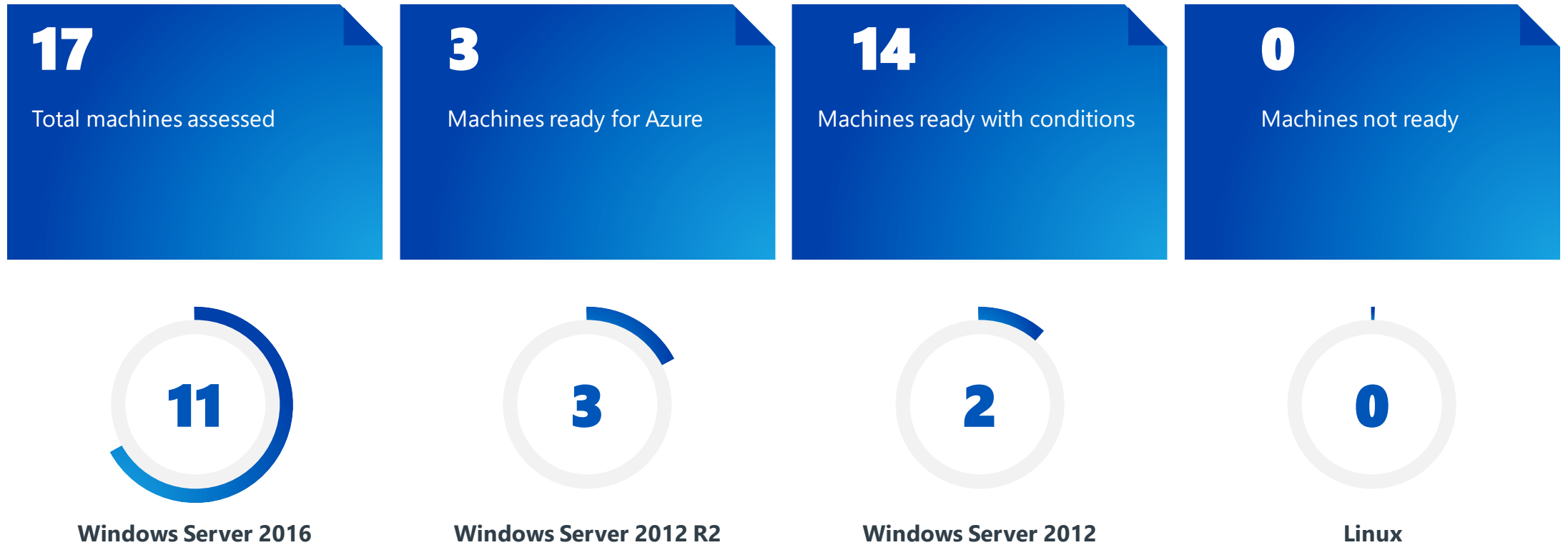
## 3 MIGRATION STRATEGY

Beyond defined milestones, an overall plan and execution strategy are key to a successful cloud migration.

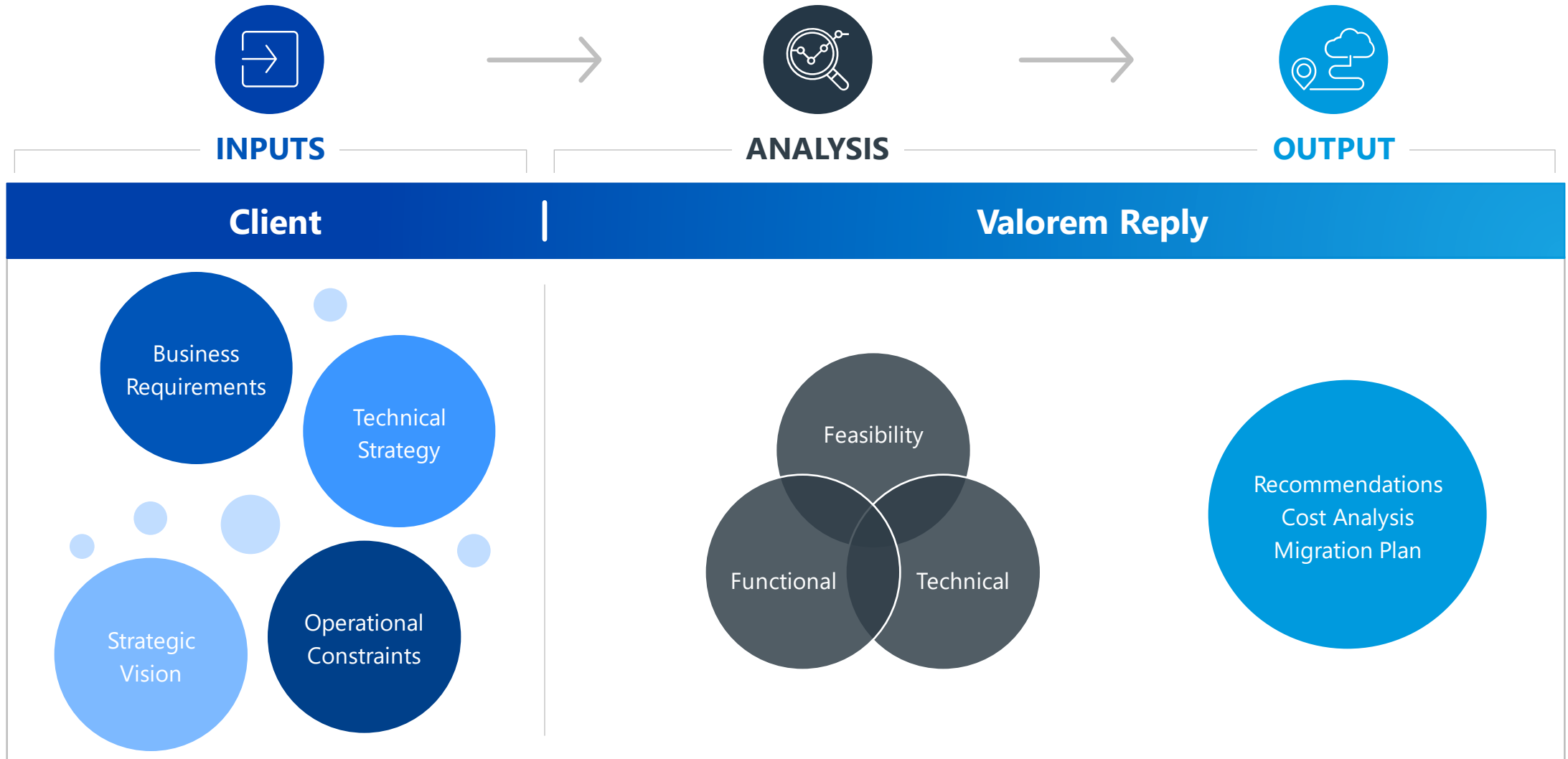


# ASSESSMENT SCOPE

This migration roadmap includes analysis and planning for a set of services that will demonstrate the feasibility, functionality and cost associated with running infrastructure in Azure. While this analysis was performed on a small branch office, critical services such as domain controllers, file servers, SQL servers and web services were assessed to provide detailed outputs and technical recommendations.



# ANALYSIS APPROACH



# OUTCOMES OVERVIEW

Based on the analysis performed during this engagement, the below summarized outcomes align with the overall business goals, technical feasibility and provide guidelines for the initial cloud migration strategy

## 1 Readiness Assessment

Based on the infrastructure analysis, this environment is mostly ready for cloud migration, with all 17 virtual machines validated as ready.

## 2 Platform Approach

Leveraging Infrastructure-as-a-Service (IaaS) will provide a quick and seamless migration process for this small branch office platform.

## 3 Migration Strategy

Using Azure Migrate will provide a low cost, compatible and straight forward migration approach with minimal additional on-premises infrastructure.

## 4 Cost Optimization

Using techniques such as right-sizing, the environment will be optimized as a part of the migration process. This will continue as the environment operationalizes.

## 5 Modernization Opportunity

While not included in the initial migration, Azure platform services provide additional opportunity to save cost and improve functionality, especially with the identified SQL servers in this environment.





## FINDINGS SUMMARY

Assessing and understanding your on-premises environment is an important part of a successful cloud migration. Accordingly, we used a set of tools that analyzed the servers, applications and performance of the branch office and provided additional insight on the viability of migrating to Azure. Below is the initial set of findings recorded during this analysis.

- 16 instances of Windows Server. Of those, 16 are running Windows Server 2008 or newer and can technically available to be migrated to the cloud.
- 0 instances of Windows Server 2003 Enterprise and Standard and Windows 2000, should be retired and applications/workloads migrated to the cloud or moved to another on-premises server.
- 0 applications on Windows Server 2003/XP that may or may not be legacy proprietary applications that cannot run on newer versions of the applications.
- Failover servers could be moved to Azure to optimize workloads because they are only used in the event one machine fails and another machine takes over to resume service.
- Through consolidation and migration to Azure, you can significantly reduce some operational costs by a reduction in hardware maintenance, support, and operations costs.
- 4 Instances of SQL Server 2005 or older which going to lose its extended support in April 2016. That needs to be upgraded and or moved to Azure.
- The 2 instances of SQL Server licenses are good candidates to migrate to Azure due to the variable nature of use. As the number of users access these workloads, Azure can scale up or down to meet your needs.
- Any SQL workloads that are used for development purposes are also potential candidates to move to Azure. And in accordance with your cloud readiness strategy, any new SQL instances for development should be deployed in the cloud.





# AZURE SERVICE RECOMMENDATIONS

Based on the performed analysis and proposed lift-and-shift migration methodology, there are a core set of Azure services that provide key storage, compute and network functionality as well as overall virtual machine migration functionality. These platform capabilities are fundamental to any cloud environment and can quickly and easily scale beyond traditional datacenters. Key services recommended for this migration include:

- Azure Virtual Machines - Azure Virtual Machines (VM) is one of several types of on-demand, scalable computing resources that Azure offers. Typically, you choose a VM when you need more control over the computing environment than the other choices offer. This article gives you information about what you should consider before you create a VM, how you create it, and how you manage it.
- Azure Storage - Azure Storage is a Microsoft-managed service providing cloud storage that is highly available, secure, durable, scalable, and redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables.
- Azure Virtual Network - An Azure Virtual Network (VNet) is a representation of your own network in the cloud. It is a logical isolation of the Azure network fabric dedicated to your subscription. You can fully control the IP address blocks, DNS settings, security policies, and route tables within this network.
- Azure Active Directory - Azure Active Directory (Azure AD) is Microsoft's cloud-based identity and access management service, which helps your employee's sign in and access resources in external resources, such as Microsoft Office 365, the Azure portal, and thousands of other SaaS applications and internal resources, such as apps on your corporate network and intranet, along with any cloud apps developed by your own organization.
- Azure Migrate - Azure Migrate helps you to migrate to Azure. Azure Migrate provides a centralized hub to track discovery, assessment, and migration of on-premises infrastructure, applications, and data to Azure. The hub provides Azure tools for assessment and migration, as well as third-party independent software vendor (ISV) offerings.



# COST ANALYSIS OVERVIEW

Assessing and analyzing cloud costs is an important part of a strategic migration and should be performed alongside the architecture and design process. The outcomes included in this roadmap is a purely infrastructure-as-a-service focused and does not include the potential cost benefits and savings of various platform-as-a-service capabilities on Azure. Accordingly, that is another important consideration for a long-term cloud migration roadmap as modernization can provide significant benefits beyond traditional lift and shift.

The cost analysis below is based on similar virtual machine sizing as on-premises and may not be a perfectly accurate estimate of the final Azure consumption. Additionally, as noted below there are opportunities to utilize reserve instances to reduce cost. Further recommendations around these topics is on the next slide.

**Based on our analysis, we recommend migrating 10 virtual machines to Azure as a part of this branch office migration process.**

Virtual machine Count				Azure Services Costing (Monthly) (Pay as you go)		Azure Services Costing (Monthly) (1 year reserved)		Azure Services Costing (Monthly) (3 year reserved)	
Machine Type	Physical	Virtual	Total	Azure Service	Cost	Azure Service	Cost	Azure Service	Cost
Windows Server	0	8	8	Total Compute	\$2,781.30	Total Compute	\$2,419.69	Total Compute	\$2,267.50
Biztalk Server	0	0	0	Total Storage	\$763.98	Total Storage	\$763.98	Total Storage	\$763.98
SQL Server	0	2	2	Network/Other	\$577.32	Network/Other	\$577.32	Network/Other	\$577.32
Linux Server	0	0	0	Backup Cost	\$523.09	Backup Cost	\$523.09	Backup Cost	\$523.09
<b>Total Machines</b>	0	10	10	DR Cost	\$513.95	DR Cost	\$513.95	DR Cost	\$513.95
				<b>Total Cost</b>	<b>\$5,159.64</b>	<b>Total Cost</b>	<b>\$4,798.03</b>	<b>Total Cost</b>	<b>\$4,645.84</b>





# AZURE COST RECOMMENDATIONS

While a lift and shift approach may not immediately optimize Azure costs, there are several key activities that will be performed as a part of the migration process to ensure efficient use of cloud dollars as well as understand, analyze and manage your Azure consumption. In addition to migrate the infrastructure services, these will be a core part of the platform deployment and configuration.

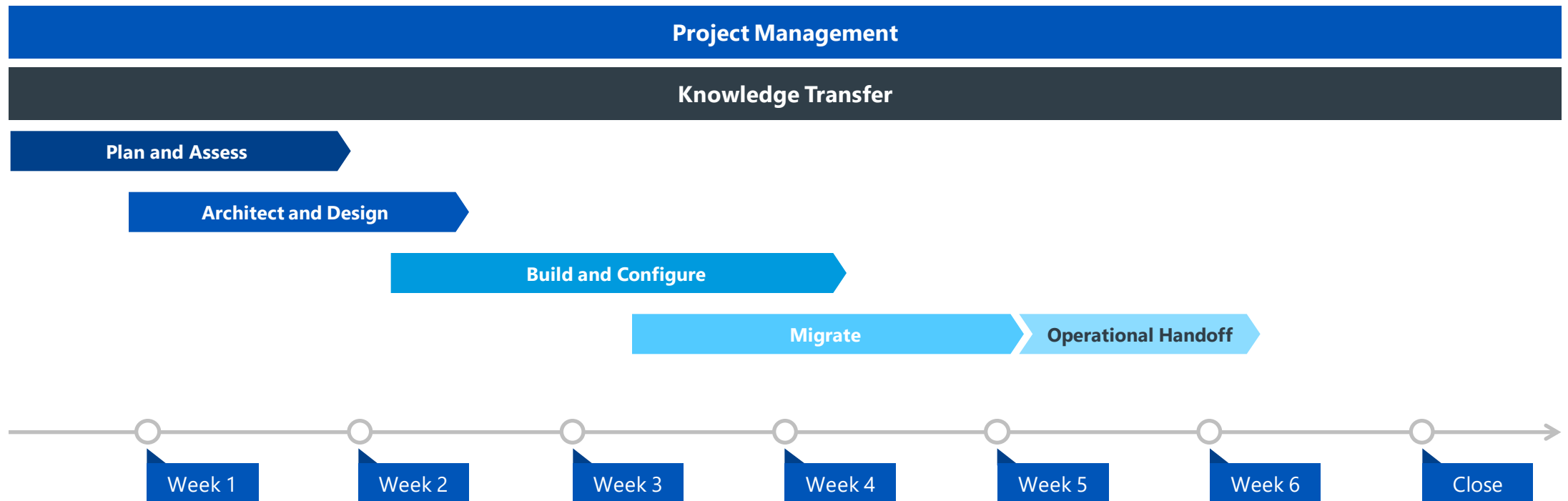
- Environment right-sizing – Based on the utilization and consumption of each virtual machine, Azure spend can be significantly optimized by right-sizing the service once migrated to Azure. Accordingly, this will be a key recommendation post-migration.
- Azure Hybrid Use – Since these virtual machines are already licensed for both Windows Server and SQL (where applicable), enabling the Azure Hybrid Use benefit will save up to 40% of the consumption cost.
- Azure Cost Management – Azure has comprehensive cost analysis and management tools built right into the platform and can be used at no additional cost. Configuring policies and reports will be a core component of the Azure migration engagement.
- Resource Management and Tagging – Understanding and analyzing the spend of each resource is an important component of overall cloud cost management. Valorem Reply will build out a foundation of resource management and tagging governance to support client business objectives.
- Azure Policies – Alongside tagging and cost management, Azure policies can enforce organization requirements and procedures to ensure alignment with business objectives. Valorem Reply will implement a set of deployment policies to ensure administrators don't perform specific deployments that are unapproved by IT leadership.



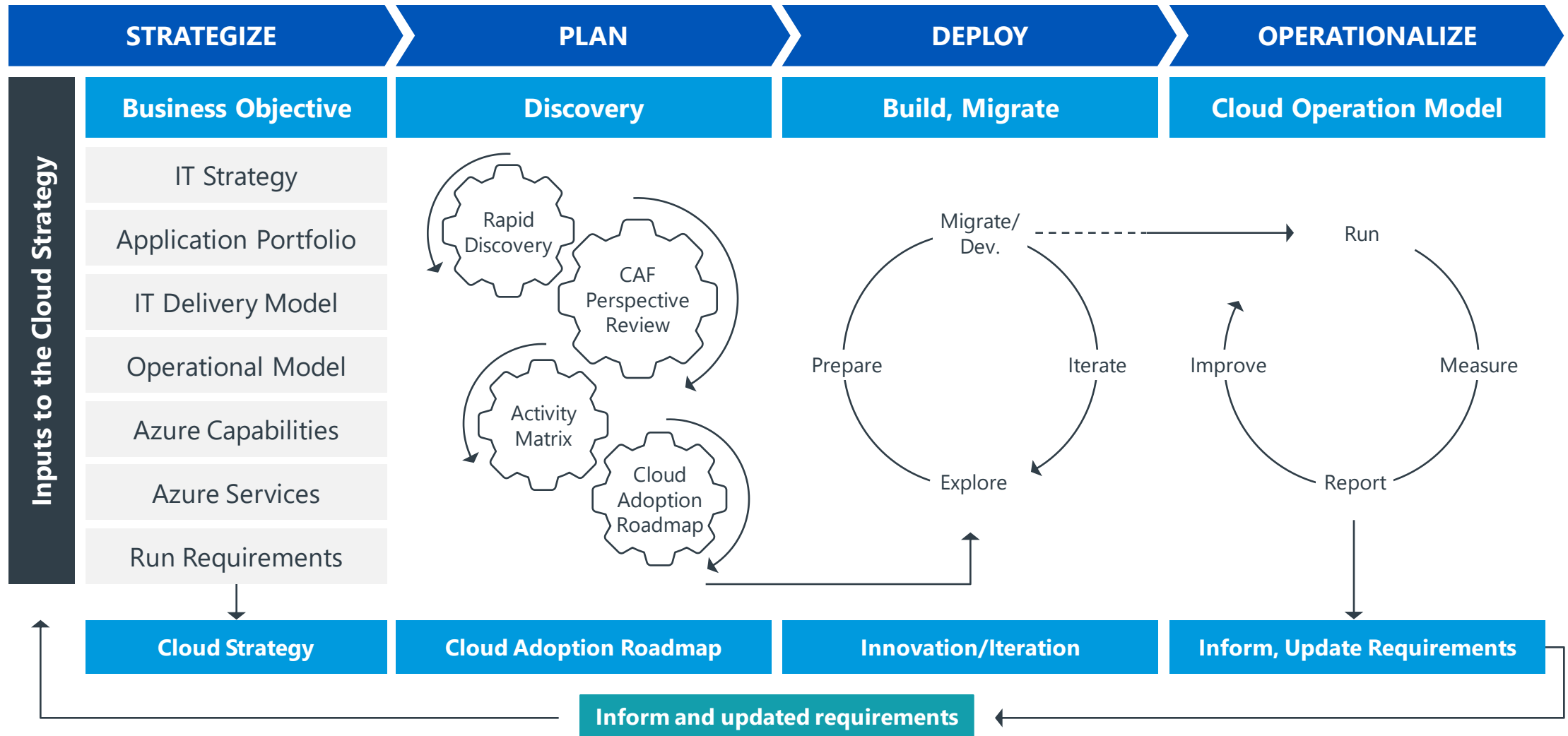
# NEXT STEPS OVERVIEW

Now that the on-premises environment analysis has been performed, we can look to engage further on the Azure platform build and service migration. Below is the high-level migration plan with milestones, timelines and expected outcomes. Additionally, the next few slides in this document describe the approach and client responsibilities based on our extensive platform deployment and migration expertise.

*Estimated duration 4-6 calendar weeks*



# MIGRATION APPROACH





# RESPONSIBILITIES MATRIX

Establish a Cloud CoE



Define Roles & Responsibilities

Identify Skills & Competencies

	CIO Office	PM Office	Architecture Team	Finance Team	Security Team	Compliance Team	Migration Team	Business Team	Application Teams	Operations Team
Application Portfolio Discovery	I	A	I		I	C	R	I	C	C
Application Analysis		A	C		C		C	I	R	
Storage and Database Analysis		A	C		C		C		R	C
Migration Design	I	A	C		C		R			C
Migration Factory	I	A	C	I		C	R			
Operations and Optimization			C	I		I		I	R	A

**R: Responsible**

**A: Accountable**

**C: Consulted**

**I: Informed**

