



# Empowering digital transformation through AWS MAP assessment with Cognizant partnership

**Transforming enterprise IT: Cost savings and efficiency Gains through AWS Migration Acceleration Program (MAP) assessment**

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## Executive summary

In today's fast-paced digital landscape, cloud migration has become a critical strategy for enterprise organizations aiming to stay competitive and achieve their business goals. The shift to cloud computing is driven by several key factors:

- **Scalability and flexibility:** Cloud platforms offer unparalleled scalability, allowing organizations to quickly adjust their resources based on demand. This flexibility ensures that businesses can efficiently manage workloads during peak times without over-investing in on-premises infrastructure.
- **Cost efficiency:** By migrating to the cloud, enterprises can significantly reduce their capital expenditure on hardware and maintenance. The pay-as-you-go model of cloud services allows for better cost management and allocation of resources to strategic initiatives.
- **Enhanced security and compliance:** Leading cloud providers invest heavily in security measures and compliance certifications. This ensures that enterprise data is protected against cyber threats and meets regulatory requirements, providing peace of mind to organizations and their customers.
- **Innovation and agility:** Cloud migration empowers organizations to innovate rapidly by leveraging advanced technologies such as artificial intelligence, machine learning, and big data analytics. This agility enables businesses to respond quickly to market changes and customer needs, fostering a culture of continuous improvement.
- **Operational resilience:** The cloud offers robust disaster recovery and business continuity solutions, ensuring that critical applications and data remain accessible even in the face of disruptions. This resilience is crucial for maintaining uninterrupted operations and delivering consistent service to customers.
- **Collaboration and productivity:** Cloud-based tools and platforms facilitate seamless collaboration among teams, regardless of their geographical location. This enhances productivity and enables a more dynamic and connected workforce.



## Cognizant and AWS partnership:

**Implementing AWS MAP:** Cognizant and AWS have joined forces to leverage the AWS Migration Acceleration Program (MAP), a comprehensive and proven cloud migration program designed to accelerate the cloud migration and modernization journey. This partnership aims to reduce costs, improve operational resilience, increase business agility, and boost staff productivity for organizations embarking on their cloud transformation journey.

The AWS MAP program follows a structured approach that includes assessment, mobilization, and migration & modernization phases. Cognizant's expertise in cloud migration, combined with AWS's robust cloud infrastructure, ensures a seamless and efficient migration process.

In summary, cloud migration is not just a technological upgrade; it is a strategic move that enables enterprise organizations to optimize costs, enhance security, drive innovation, and achieve greater operational efficiency. By embracing the cloud, businesses can position themselves for long-term success in an increasingly digital world.

# Introduction

## Cognizant cloud steps framework and AWS MAP: A unified approach to cloud migration and modernization

Cognizant's Cloud Steps framework and the AWS Migration Acceleration Program (MAP) share a common vision and approach to cloud migration and modernization. Both frameworks are designed to facilitate a seamless transition to the cloud, leveraging a structured methodology and a wealth of experience in cloud transformation.

The Cloud Steps framework, with its five-step approach as depicted in Figure 1, breaks down the cloud migration journey into well-defined processes, from vision and strategy to ongoing optimization.

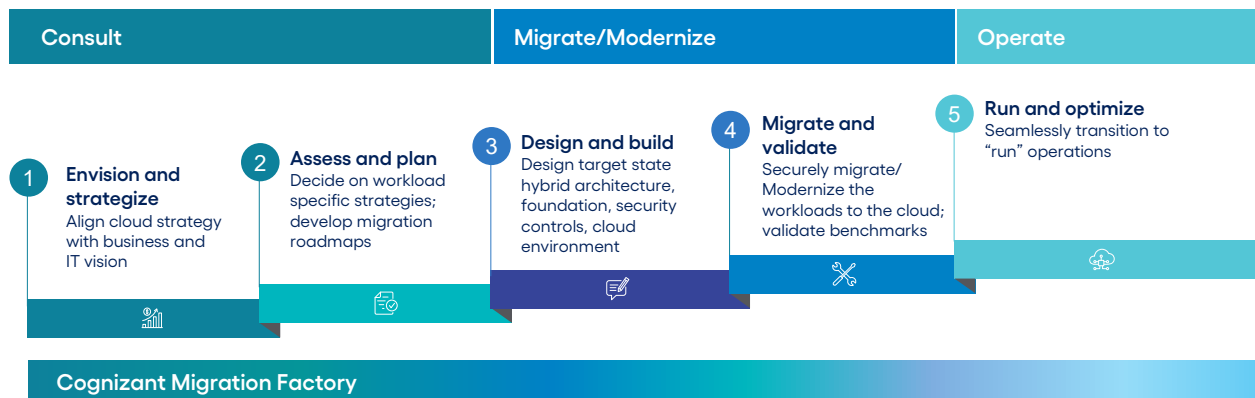


Figure 1

Similarly, AWS MAP follows a comprehensive three-phase approach as depicted in Figure 2, encompassing assessment, mobilization, and migration & modernization. Both frameworks emphasize the importance of thorough planning, secure cloud environment setup, efficient workload migration, and continuous optimization.

## AWS Migration Acceleration Program (MAP)

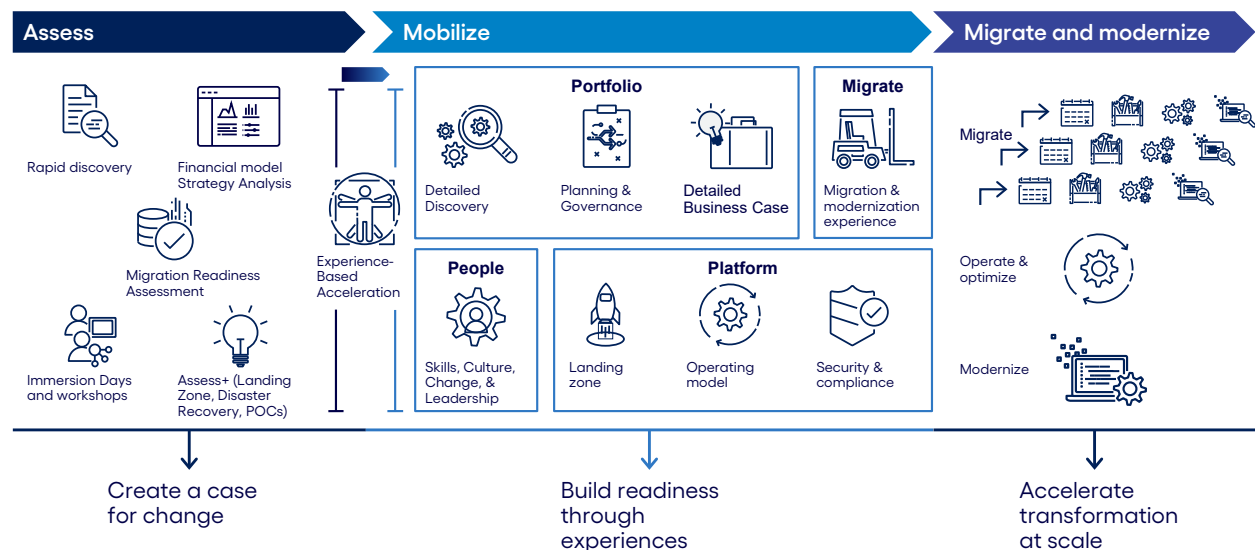


Figure 2

Cognizant's deep domain expertise and proprietary tools, combined with AWS's robust cloud infrastructure and resources, create a powerful synergy that drives successful cloud transformations.

This alignment demonstrates that both Cognizant and AWS have a similar thought process and extensive experience in cloud migration and modernization. By working together, they provide organizations with a comprehensive and effective solution to achieve their cloud transformation goals, ensuring enhanced performance, scalability, and cost-efficiency.

" The collaboration between Cognizant and AWS brings together their respective strengths, ensuring that organizations benefit from a unified and efficient migration process "

## AWS Migration Acceleration Program (MAP) overview

It's designed to help enterprises accelerate their cloud migration and modernization journey. It was launched in **2016** and is based on AWS's extensive experience migrating thousands of enterprise customers to the cloud.

The objectives of the AWS Migration Acceleration Program (MAP) are to reduce costs by moving infrastructure and applications to the cloud, allowing enterprises to decrease IT expenses and free up resources for strategic initiatives; boost productivity by enabling employees to shift from tactical to strategic work, thereby enhancing overall productivity; improve operational resilience by strengthening IT security and increasing service availability and reliability; and increase business agility by accelerating innovation and reducing deployment timelines.

The AWS Migration Acceleration Program (MAP) has included partner funding and client credits since its inception and these incentives are designed to help offset the initial costs of migration and provide financial support to both partners and customers throughout the migration process. In recent years, AWS has introduced several enhancements to the program, including streamlined funding structures and additional incentives to better support large-scale migrations.

**MAP 1.0 (2016) – Introduction:** Launched to help enterprises accelerate their cloud migration journey.  
**Key Features:** Initial framework with a three-phased approach: Assess, Mobilize, and Migrate & Modernize

**MAP 2.0 (2019) – Enhancements:** Introduced MAP tagging setup, additional incentives, and a more structured approach to support cloud migrations.

**Key Changes:** Emphasis on tagging migrated workloads for better cost management and resource tracking

**MAP 2022 – Updates:** Continued to build on the MAP 2.0 framework, incorporating customer feedback and adding more resources to support migrations on the scale.

**Key Changes:** Enhanced support for specialized workloads such as mainframe, Windows, SAP, and VMware

**MAP 2023 – Improvements:** Further refinements to the program, including streamlined funding structures and additional incentives.

**Key Changes:** Simplified the funding approval process and introduced new Strategic Partner Incentives (SPIs)

**MAP 2024 – Latest Updates:** Introduced in July 2024, focusing on enhancing partner and customer support.

**Key Changes:** New incentives for strategic partners and further simplification of the funding process



In this paper, we'll deep-dive AWS MAP – ASSESSMENT Phase, where the assessment phase of the AWS Migration Acceleration Program (MAP) helps clients make informed decisions about cloud migration by:

- **Evaluating readiness:** Conducting a thorough assessment of the current IT environment to determine cloud readiness.
- **Building a business case:** Performing cost-benefit analysis to highlight potential savings and ROI.
- **Aligning stakeholders:** Ensuring leadership and key stakeholders are on board with the migration goals.
- **Mitigating risks:** Identifying gaps and risks and developing plans to address them.
- **Strategic planning:** Creating a detailed migration roadmap and allocating necessary resources.

This phase empowers organizations to confidently proceed with their cloud migration and transformation journey.

# Methodology

## Six steps assessment activities

The MAP Assessment activities encompass a comprehensive six-step process designed to facilitate a seamless cloud migration journey as depicted.

### Migration readiness assessment (MRA)

Define current state of readiness for migration via the AWS-approved MRA approach

Leverage AWS's MRA tool to discuss 80+ questions, relate to the 6 AWS Cloud Adoption Framework (AWS CAF)

- Business perspectives: Business | People | Governance
- Technical Perspectives: Platform | Security | Operations

### Right-sizing and right pricing model

Provides

- Recommendations of AWS services (e.g., EC2, EKS etc.) and size per each on-prem VMs in scope for migration
- Recommendations on right pricing models based on best price performance model

### Assess analysis report

(Directional business case):

Provides a summary, executive-level report of all deliverables.

- Multi-year cost projection
- Right sizing and right pricing recommendations
- Migration and modernization opportunities

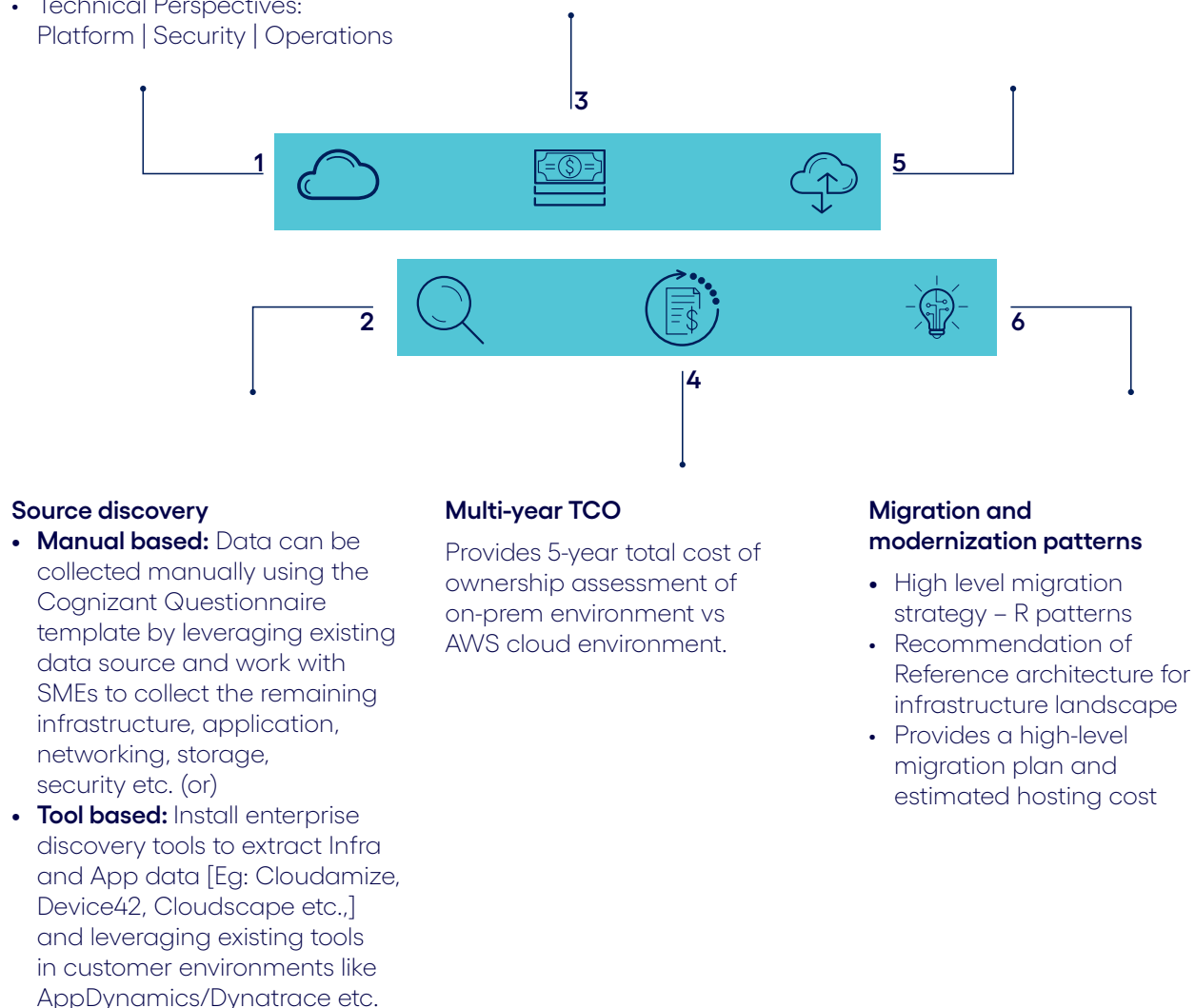


Figure 3



The process begins with a **Migration Readiness Assessment (MRA)** as depicted in Figure 4, which evaluates the current IT environment's readiness for migration. This involves discussing and scoring over 80 questions to establish a baseline for understanding the current state, making recommendations for next steps, and defining the future scope.

The AWS MRA tool is utilized to address these 80+ questions, which are categorized under the six AWS Cloud Adoption Framework (AWS CAF) perspectives:

- Business Perspectives:
  1. Business
  2. People
  3. Governance
- Technical Perspectives:
  1. Platform
  2. Security
  3. Operations

## Migration Readiness Assessment (MRA)

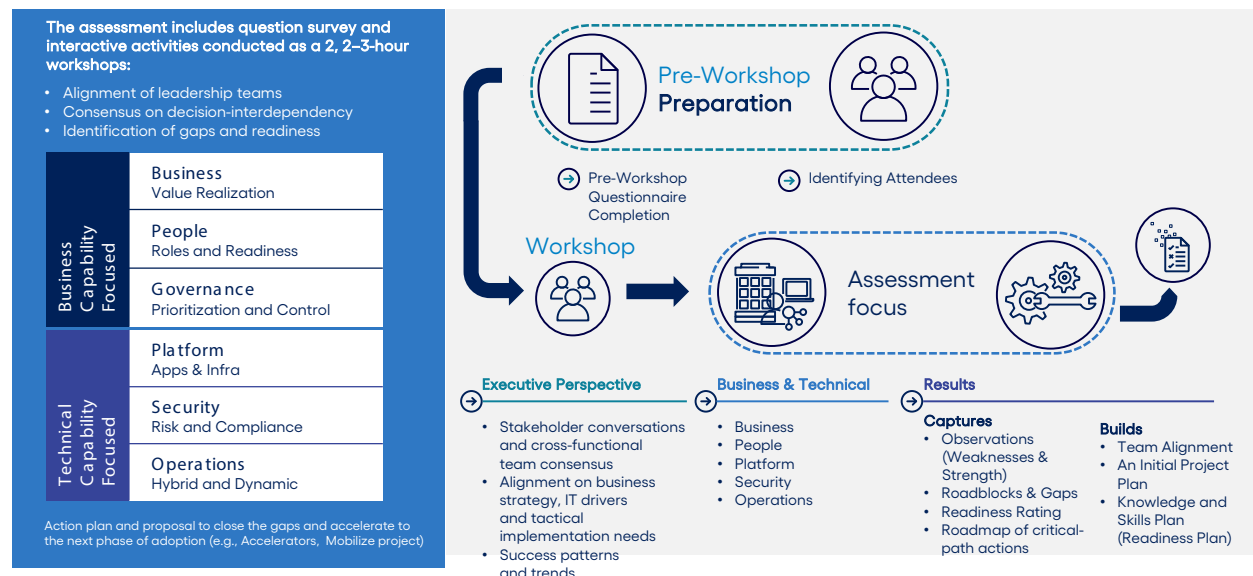


Figure 4

A detailed readiness report is then provided as illustrated in Figure 5, including a heat map and scoring chart, to help identify and plan opportunities for initiating recommended organizational adjustments for cloud adoption.

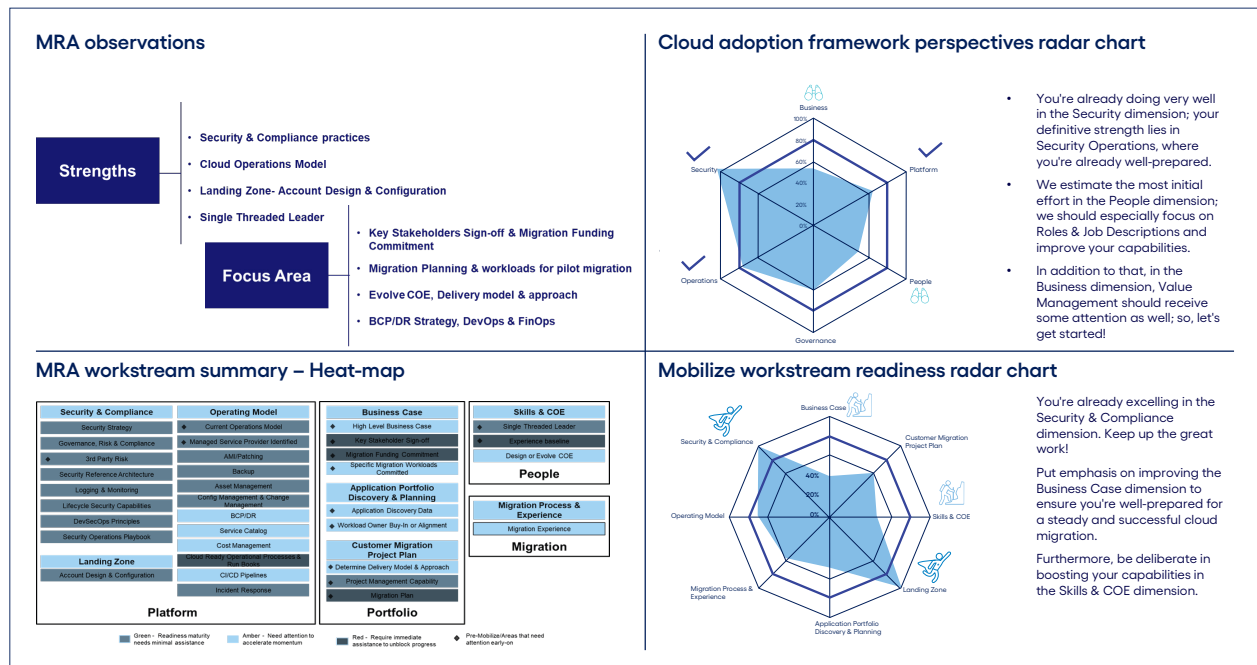


Figure 5

This is followed by **Source Discovery**, where existing workloads and applications are identified and cataloged. The comprehensive process of data collection, analysis, and recommendations adheres to a well-defined approach, as depicted in Figure 6.

## Data collection and analysis approach

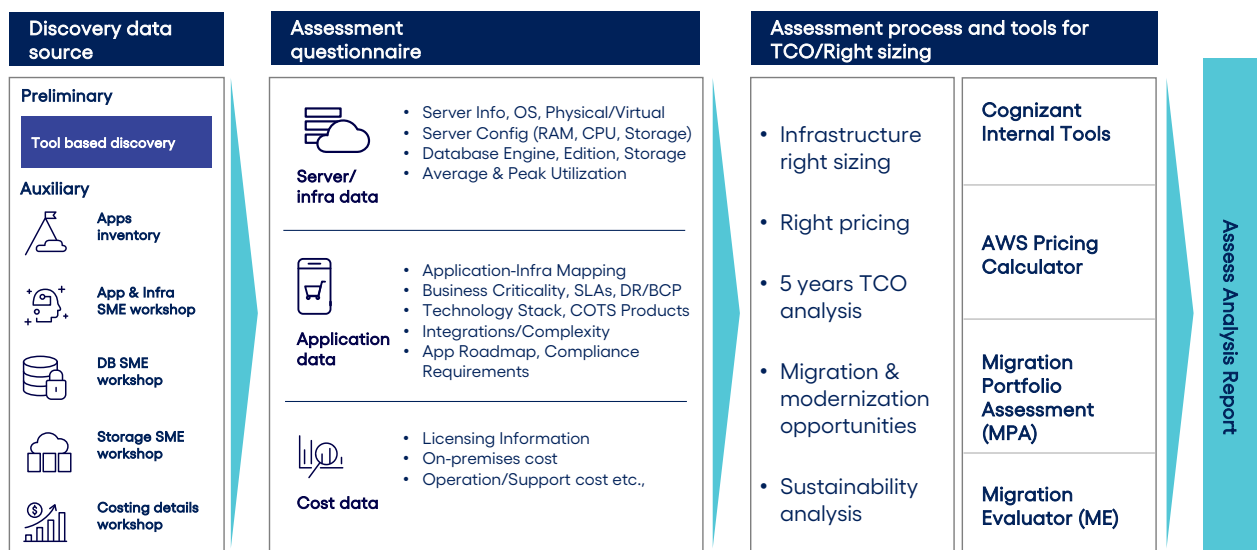


Figure 6



Cognizant will conduct a data collection of IT infrastructure discovery data using either a tool-based or manual approach. This includes validating physical and virtual servers in the customer's environment and their specifications, such as CPU, memory, peak and average CPU and memory utilization, used storage, server integrations, data flow, server uptime, environment mapping, application parameters, and more, as depicted.

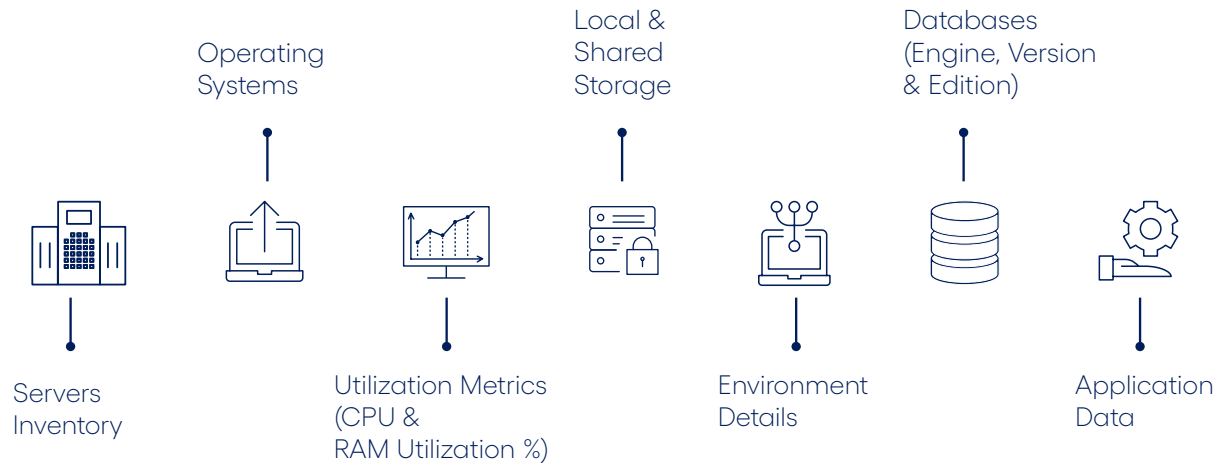


Figure 7

## Cognizant discovery method:

**Tool-based discovery:** The tool will gather comprehensive information about the customer's IT environment, covering everything from business services and networks to application dependency mapping. Cognizant will utilize tools to discover infrastructure to applications, their key application dependencies, infrastructure capacity and utilization, application integrations, data flows (ingress and egress), and overall infrastructure discovery.

**Manual discovery:** Cognizant will conduct discovery workshops with customer SMEs using a data collection questionnaire. This manual discovery process encompasses the entire infrastructure and application landscape, capturing details such as server capacity, utilization, storage, network parameters, business direction, application roadmap, technology stack, database configuration, architecture dependency, application security, business criticality, regulatory compliance, and licensing details.

Cognizant will facilitate these workshops with customer infrastructure SMEs as needed to address any gaps in the collected data:

- **Infrastructure SMEs:** To validate data collected by the discovery tool.
- **Business SMEs:** To understand business requirements, directions, and other key strategic inputs for the future roadmap.
- **Application SMEs:** To understand the business and technology value of applications, compliance and regulatory requirements, and other functional and non-functional requirements, and to validate data collected by the discovery tool.

The **Right sizing and right pricing model** step ensures optimal resource allocation and cost-effectiveness. In alignment with the strategy, it is recommended to consider the following target AWS instance capacities as illustrated in Figure 8.

- Identifies the right sizing for server instances based on CPU and memory utilization metrics.
- Determines the appropriate pricing model (On-Demand, 1-year or 3-year Reserved Instance Model, Spot Instances) for servers based on the environment and server uptime.
- Identifies the most suitable storage tiers.

## Right-sizing and right-pricing model

Considered right CPU/RAM combination for target EC2 instances as per best practices – Target EC2 Instance Types (Right Sized | BYOL)

BA (Business Apps)										
Instance Type	vCPU (#)	RAM (GB)							Total	
		4	8	16	32	64	96	128		256
m7i-flex.large	2		34						34	
m7i-flex.xlarge	4		20						20	
c7i-flex.xlarge	4	17							17	
r6i.large	2		15						15	
r6i.xlarge	4		12						12	
c7i-flex.large	2	11							11	
m7i-flex.2xlarge	8			8					8	
c7i-flex.4xlarge	16			4					4	
c7i-flex.2xlarge	8		3						3	
r5.2xlarge	8				2				2	
r6i.2xlarge	8				2				2	
r6i.8xlarge	32							2	2	
z1d.3xlarge	12					2			2	
r6i.4xlarge	16						1		1	
Total		11	51	38	24	4	2	1	2	133

D&A (Data and Analytics)										
Instance Type	vCPU (#)	RAM (GB)							Total	
		4	8	16	32	64	96	128		256
r6i.2xlarge	8				36				36	
m7i-flex.xlarge	4		8						8	
r6i.xlarge	4			7					7	
r6i.large	2		5						5	
c7i-flex.2xlarge	8		3						3	
m7i-flex.large	2	2							2	
x2iezn.2xlarge	8							2	2	
c7i-flex.large	2	1							1	
m7i-flex.2xlarge	8			1					1	
m7i-flex.4xlarge	16				1				1	
x2iedn.xlarge	4					1			1	
z1d.3xlarge	12					1			1	
Total		1	2	16	8	37	1	1	2	68

R&M (Research and Modeling)									
Instance Type	vCPU (#)	RAM (GB)							Total
		16	32	64	96	128	192	256	
r6i.2xlarge	8			76					76
r6i.xlarge	4		19						19
r6i.4xlarge	16				16				16
m7i-flex.2xlarge	8	2							2
c6i.2xlarge	8	1							1
m7i-flex.4xlarge	16		1						1
r6i.8xlarge	32						1		1
x2iedn.2xlarge	8						1		1
z1d.3xlarge	12			1					1
z1d.6xlarge	24					1			1
Total		1	21	77	1	16	1	2	119





Figure 8

A **Multi-Year total cost of ownership (TCO)** analysis is then performed to project long-term financial implications as illustrated in Figure 9 & 10. This involves:

- Gathering current costs for servers, storage, networking, and IT labor. If the customer cannot provide these costs, Cognizant will use industry benchmarks for estimation.
- Estimating AWS hosting costs for servers, storage, and networking.
- Comparing the Total Cost of Ownership for the 'Do Nothing' scenario versus the 'Migrate to AWS' scenario (current state versus target state).
- Providing a 5-year cash flow model.

## AWS hosting – Annual cost

Components	All EC2 – License Included		All EC2 – BYOL		EC2 + EKS – License Included		EC2 + EKS – BYOL	
	Right Sized	Matching On-prem Capacity	Right Sized	Matching On-prem Capacity	Right Sized	Matching On-prem Capacity	Right Sized	Matching On-prem Capacity
Compute	\$547,211	\$818,546	\$179,291	\$292,196	\$566,171	\$907,922	\$198,251	\$381,572
Database <sup>^</sup>	-	-	-	-	-	-	-	-
Storage	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081
Networking <sup>*</sup>	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974
AWS Services <sup>*</sup>	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191
IT Labor <sup>†</sup>	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210
AWS Support <sup>**</sup>	\$55,432	\$73,390	\$29,678	\$37,581	\$56,608	\$77,750	\$30,854	\$43,686
<b>Annual Cost</b>	<b>\$836,099</b>	<b>\$1,125,391</b>	<b>\$442,424</b>	<b>\$563,233</b>	<b>\$856,235</b>	<b>\$1,219,128</b>	<b>\$462,560</b>	<b>\$658,714</b>

-  Primary Region – US East -1 (North Virginia)
-  Server Uptime: 100% for Prod, Non-Prod & Database servers
-  Pricing Model – 3 Year No Upfront ISP for EC2 & On Demand for EKS
-  Block Storage – EBS General Purpose SSD (GP3)  
Shared Storage – FSx for Windows File Server





-  <sup>^</sup> Database server cost is included in compute cost; DB licenses will be migrated to AWS through BYOL.
-  <sup>\*</sup> Networking cost includes Transit Gateway, Load balancers & AWS Services Cost includes Certificate Manager, KMS etc.
-  <sup>†</sup> IT Labor costs include Server support costs only; doesn't include Application Support costs
-  <sup>\*\*</sup> AWS Support – Business Level Plan

Figure 9

## 5 Year TCO – All EC2: License included

Servers 117	\$4.18 Million dollars						\$5.63 Million dollars					
	Right sized (RZ)						Matching with on-prem capacity					
Components	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Compute	\$547,211	\$547,211	\$547,211	\$547,211	\$547,211	\$2,736,055	\$818,546	\$818,546	\$818,546	\$818,546	\$818,546	\$4,092,730
Database	-	-	-	-	-	-	-	-	-	-	-	-
Storage	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081	\$830,405	\$166,081	\$166,081	\$166,081	\$166,081	\$166,081	\$830,405
Network	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974	\$94,870	\$18,974	\$18,974	\$18,974	\$18,974	\$18,974	\$94,870
AWS Services	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191	\$40,955	\$8,191	\$8,191	\$8,191	\$8,191	\$8,191	\$40,955
IT Labor	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210	\$201,049	\$40,210	\$40,210	\$40,210	\$40,210	\$40,210	\$201,049
AWS Support	\$55,432	\$55,432	\$55,432	\$55,432	\$55,432	\$277,160	\$73,390	\$73,390	\$73,390	\$73,390	\$73,390	\$366,948
<b>Total costs*</b>	<b>\$836,099</b>	<b>\$836,099</b>	<b>\$836,099</b>	<b>\$836,099</b>	<b>\$836,099</b>	<b>\$4,180,494</b>	<b>\$1,125,391</b>	<b>\$1,125,391</b>	<b>\$1,125,391</b>	<b>\$1,125,391</b>	<b>\$1,125,391</b>	<b>\$5,626,957</b>

Figure 10



**Migration and Modernization Patterns** are established to guide the transition and modernization of workloads.:

- Recommend a migration and modernization strategy as illustrated in Figure 11 & 12.

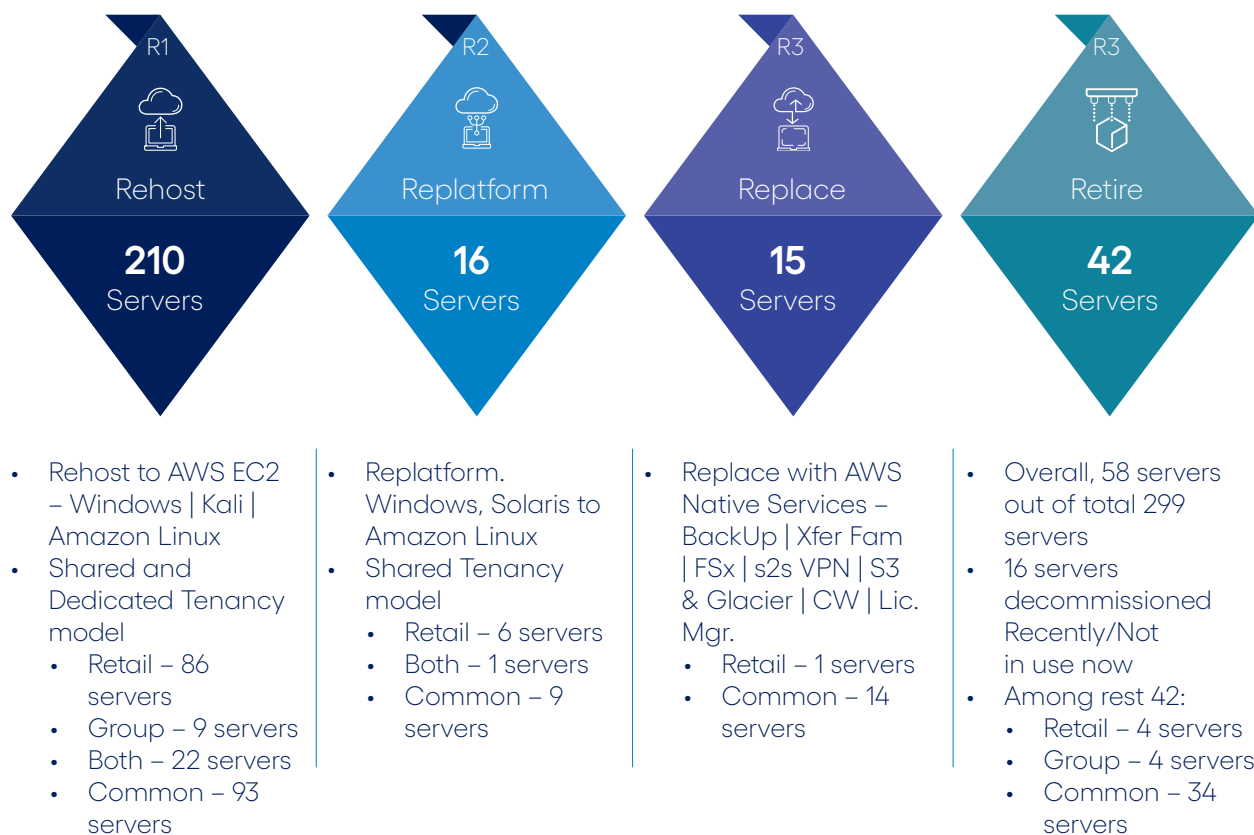
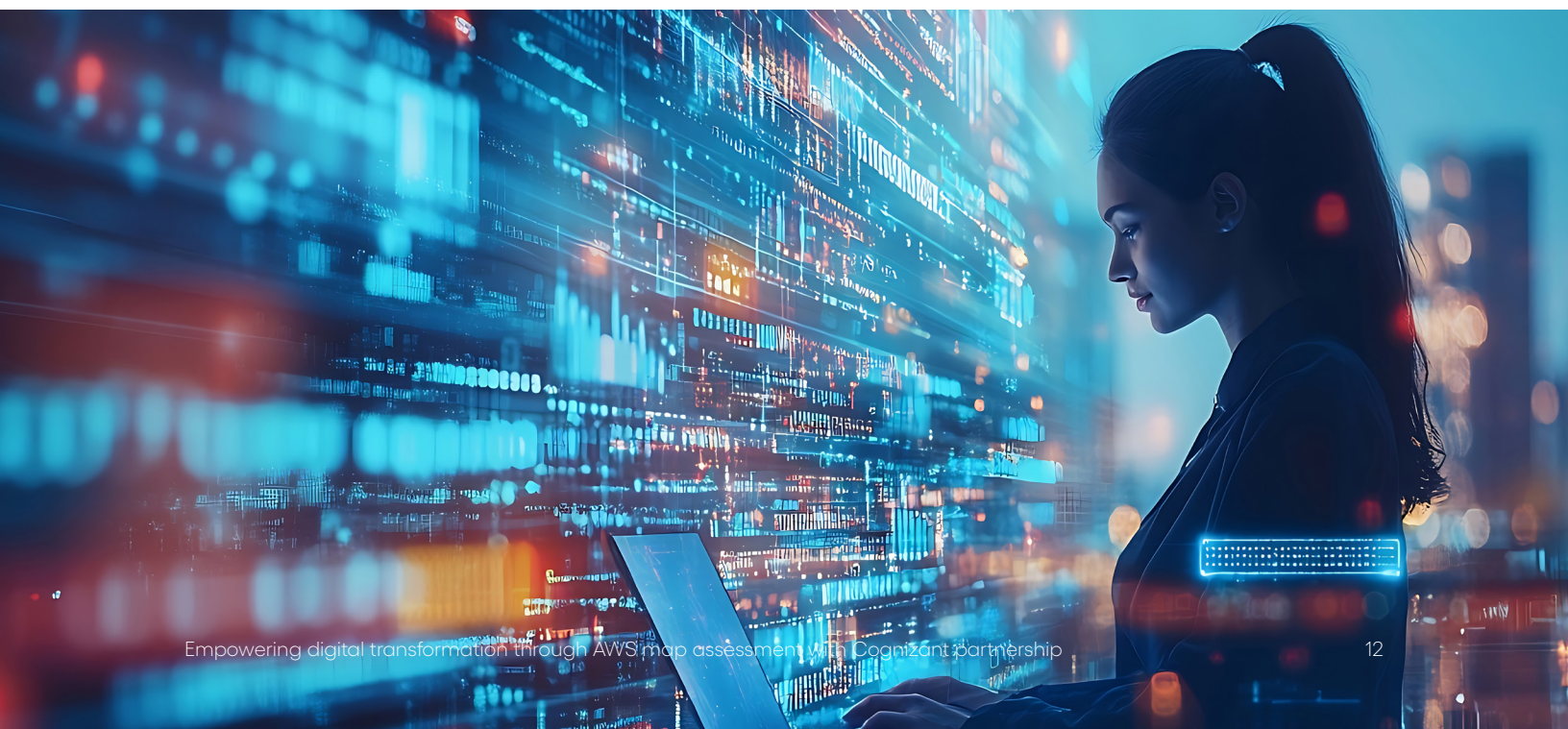


Figure 11





## Recommended migration and modernization strategy

Application	Migration considerations	Migration strategy	Post migration recommendations	Complexity
Crystal App	<ul style="list-style-type: none"> <li>• License reactivation on AWS if required</li> </ul>	<ul style="list-style-type: none"> <li>• Lift and Shift (Rehost) using MGN</li> </ul>	<ul style="list-style-type: none"> <li>• Add High Availability (HA) to avoid the single point of failures.</li> <li>• Consider adding Disaster Recovery (DR) based on an understanding of Business Impact Analysis (BIA), RPO and RTO requirements. Consider possible tools such as AWS Elastic DR service.</li> </ul>	<b>Simple</b>
SSO Interface	<ul style="list-style-type: none"> <li>• App Servers us-bv-ap and us-bv- shared by 2 Apps (SSO Interface and Int. raining Portal)</li> <li>• US-BV-DBC3-P cluster</li> <li>• US-BV-DBC3-P (Node 1) – Active</li> <li>• US-BV-DBC2-P (Node 2) – Inactive</li> <li>• Cluster Configuration to be done on AWS Servers once they are migrated using MGN</li> <li>• Multiple IPs on the cluster nodes, need to migrate as is.</li> <li>• These 2 App Servers are shared with Int. Training Portal, so the Migration should be planned together.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-platform (OS/DB version upgrade)</li> <li>• Deploy SQL Server Cluster nodes in Multi AZ and configure the cluster.</li> <li>• Co-ordinate with down stream and upstream app owners on the migration and unavailability of the system during the cutover.</li> </ul>	<ul style="list-style-type: none"> <li>• Upgrade Microsoft Windows Server 2012 R2 Standard to Microsoft Windows Server 2019 Standard or later based on the application software compatibility</li> <li>• Migrate SQL cluster on EC2 to RDS for SQL Server with multi-AZ deployment.</li> <li>• Add High Availability (HA) to avoid the single point of failures.</li> <li>• Consider adding Disaster Recovery (DR) based on an understanding of Business Impact Analysis (BIA), RPO and RTO requirements. Consider possible tools such as AWS Elastic DR service.</li> </ul>	<b>Medium</b>
Int. Training Portal	<ul style="list-style-type: none"> <li>• App Servers us-bv-ap7-p and us-bv-web-d shared by 2 Apps (SSO Interface and Int. Training Portal)</li> <li>• These 2 App Servers are shared with Int. Training Portal, so the Migration should be planned together.</li> </ul>	<ul style="list-style-type: none"> <li>• Re-platform (OS/DB version upgrade)</li> <li>• Co-ordinate with down stream and upstream app owners on the migration and unavailability of the system during the cutover.</li> </ul>	<ul style="list-style-type: none"> <li>• Migrate to RDS for SQL Server</li> <li>• Upgrade Microsoft Windows Server 2012 R2 Standard to Microsoft Windows Server 2019 Standard or later based on the application software compatibility</li> <li>• Add High Availability (HA) to avoid the single point of failures.</li> <li>• Consider adding Disaster Recovery (DR) based on an understanding of Business Impact Analysis (BIA), RPO and RTO requirements. Consider possible tools such as AWS Elastic DR service.</li> </ul>	<b>Medium</b>

Figure 12

- Develop a high-level migration plan and estimate the associated costs as illustrated in Figure 13 & 14.

## Migration wave 1 – move groups

Move Group	Workload	LOB Mapping	Workload type	Disposition	Servers#
Move Group 1	App	Common	Security	Rehost	5
	App	Common	Security	Rehost	3
	App	Common	Security	Rehost	1
	App1	Common	Security	Rehost	1
	App1	Common	Security	Rehost	3
	App1	Common	Security	Rehost	1
	App1	Common	Security	Rehost	6
	App1	Common	Security	Rehost	2
	App1	Common	Security	Replat	1
	App1	Common	Security	Rehost	2
	App1	Common	Security	Rehost	2
	App1	Common	Security	Rehost	1
Move Group	Workload	LOB Mapping	Workload type	Disposition	Servers#
Move Group 2	App	Common	Development	Rehost	2
	App	Common	Management	Rehost	1
	App	Common	Management	Rehost	2
	App	Common	Management	Rehost	1
	App	Common	Management	Rehost	3
	App	Common	Management	Replat	1
	App	Common	Management	Rehost	2
	App	Common	Infra	Rehost	4
	App	Common	Infra	Rehost	2
	App	Common	Infra	Rehost	7
	App	Common	Infra	Rehost	3
Move Group	Workload	LOB Mapping	Workload type	Disposition	Servers#
Move Group 3	App	Common	Business	Rehost	3
	App	Common	Business	Rehost	3
	App	Common	Business	Rehost	1
	App	Common	Business	Rehost	3
	App	Common	Business	Rehost	2
	App	Common	Business	Rehost	4
	App	Common	Business	Rehost	1
	App	Common	Business	Rehost	1
	App	Common	Business	Rehost	14
	App	Common	Business	Rehost	6
	App	Common	Business	Rehost	2
Move Group	Workload	LOB Mapping	Workload type	Disposition	Servers#
Move Group 4	App	Common	Business	Replat	1
	App	Common	Business	Replat	1
	App	Common	Infra	Replat	1
	App	Common	Business	Replat	4
Move Group	Workload	LOB Mapping	Workload type	Disposition	Servers#
Move Group 5	App	Common	Management	Replace	1
	App	Common	Backup	Replace	2
	App	Common	Management	Replace	3
	App	Common	Management	Replace	1
	App	Common	Management	Replace	1
	App	Common	Infra	Replace	3
	App	Common	Infra	Replace	3
	App	Common	Infra	Replace	3

Figure 13

## High level migration plan

Migration workstreams	Activities	M1	M2	M3	M4	M5	M6	M7
Design and setup landing zone	Design Landing Zone							
	Implement Network, Security Controls, Guardrails							
	Account Provisioning Automation							
	Set Up Centralized Logging, Monitoring, IAM, Backup							
	Enable Cost Management & Ongoing Maintenance							
Expand AWS Setup	Setup IaC, AMIs							
	MGN and DMS configuration and setup							
Migration WAVE 1	Wave 1 - Pilot Move Group 1							
	Wave 1 - Move Group 2							
	Wave 1 - Move Group 3							
	Wave 1 - Move Group 4							
	Wave 1 - Move Group 5							
Migration WAVE 2	Wave 2 - Move Group 6							
Migration WAVE 3	Wave 3 - Move Group 7							
	Wave 3 - Move Group 8							
Hypercare and handover	Hypercare support, Runbook preparation							

Figure 14

- Recommendation of Reference architecture for infrastructure landscape as depicted in Figure 15, 16 & 17.

## Landing zone – control tower based multi-account structure

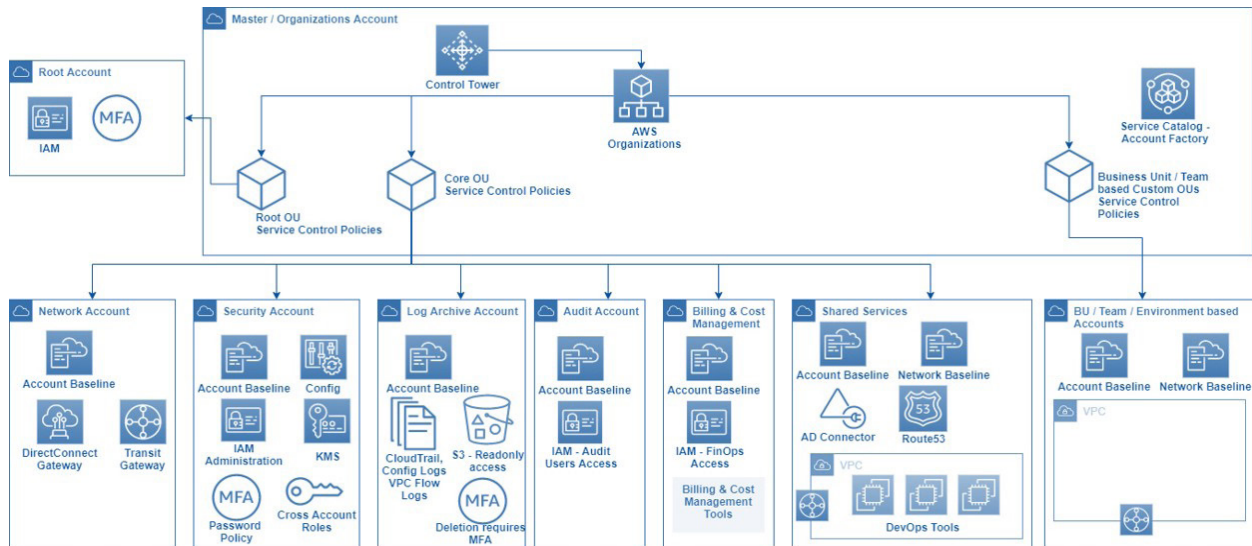


Figure 15

## Reference architecture with high availability

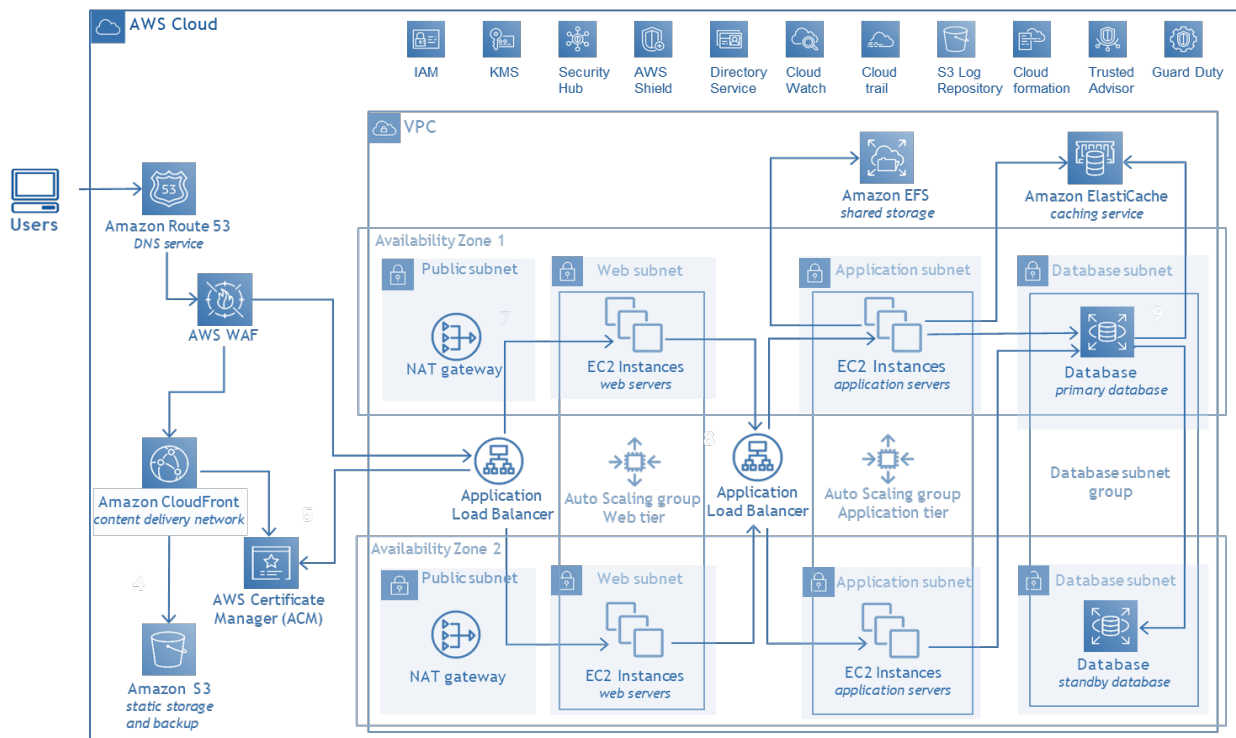


Figure 16

## Reference architecture with on-prem connectivity

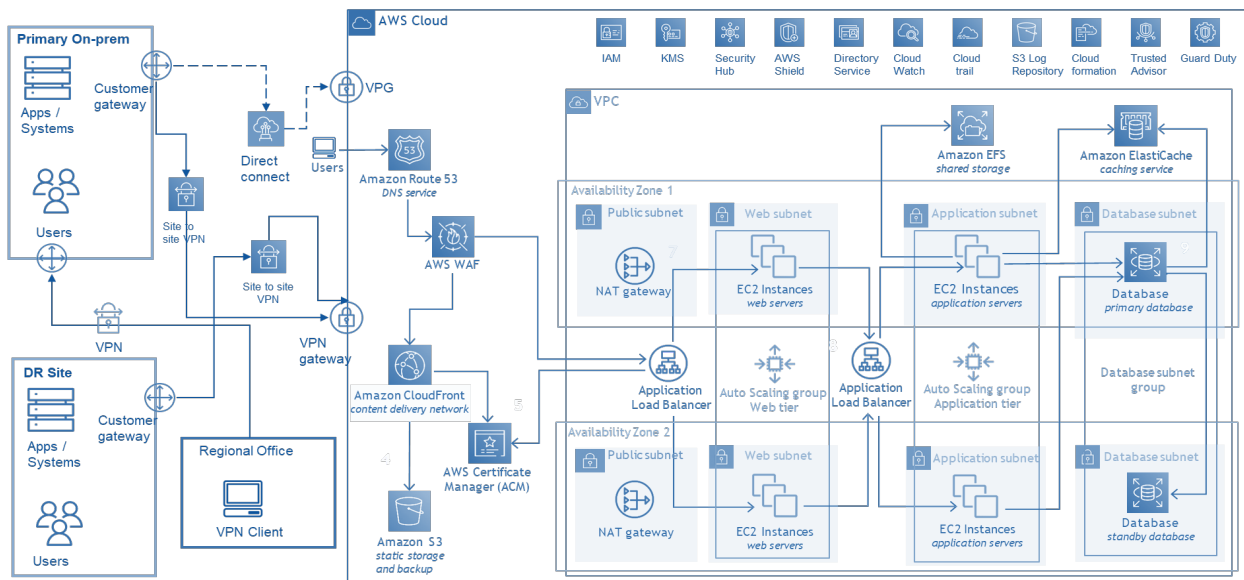


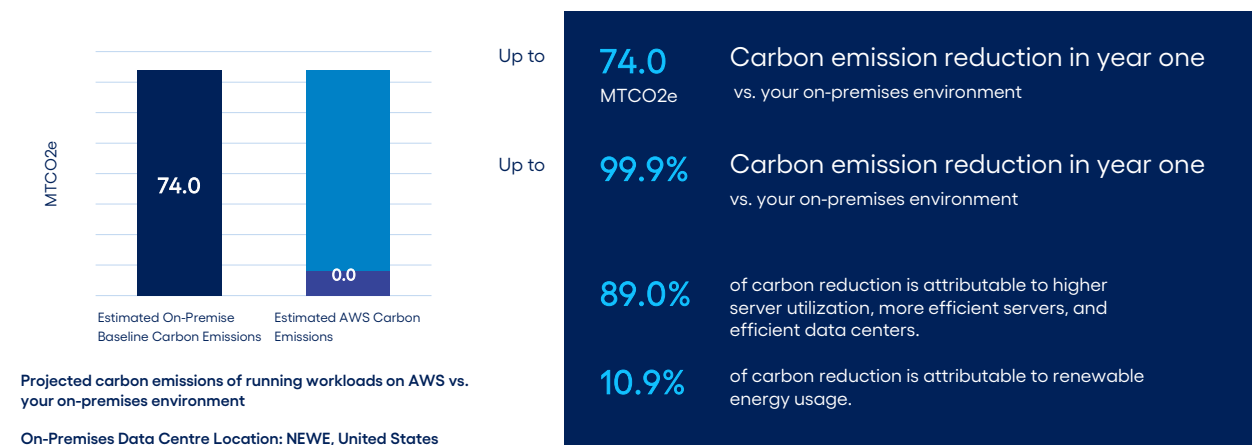
Figure 17

### Sustainability Analysis (Optional in Assessment phase)

- Estimate the current carbon footprint for the workloads in scope for migration.
- Estimate the future carbon footprint of the workloads once migrated to AWS.
- Estimate the carbon footprint reduction benefits of migrating to AWS as illustrated in Figure 18.

### Sustainability: Directional carbon footprint

AWS can help lower the carbon footprint of your average on-premises data center workload



The unit of measurement for carbon emissions is metric tons of carbon dioxide-equivalent (MT CO<sub>2</sub>e), an industry-standard measure. This report covers AWS Scope 1 & Scope 2 emissions. A comparable AWS region may supplement data in these calculations due to limited carbon emission information being available for new or GovCloud regions.

Figure 18



Finally, an overall **Assessment Analysis Report** is generated as illustrated in Figure 19, providing a detailed evaluation and actionable insights to support informed decision-making throughout the migration process.

Example – directional business case summary:

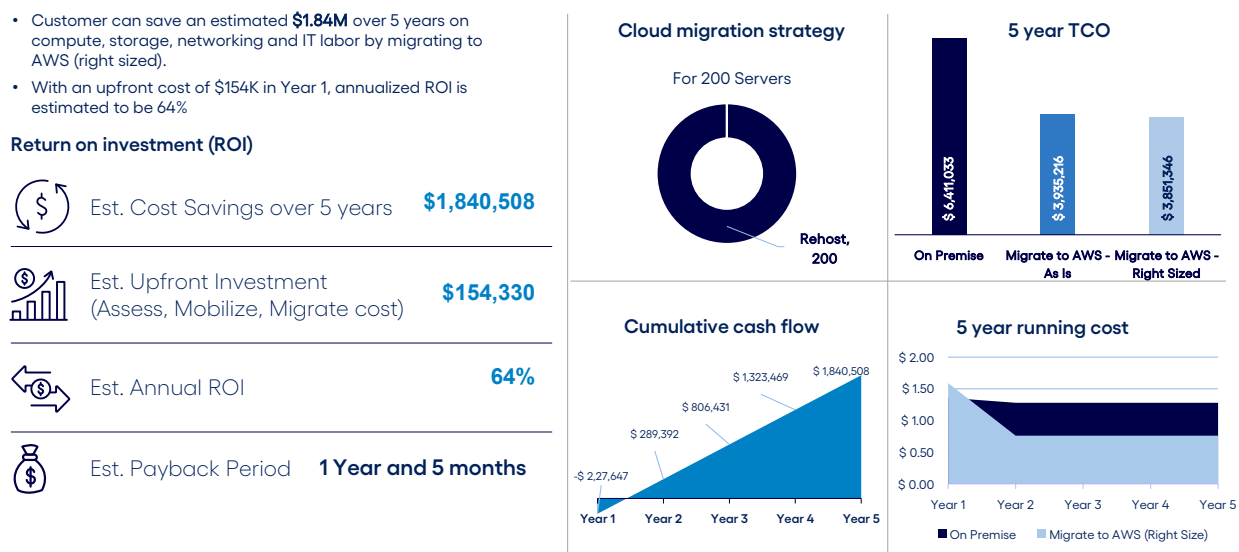


Figure 19

## Benefits

### Benefits to Cognizant:

- Enhanced service offerings with AWS's advanced cloud technologies.
- Strengthened market position as a leading cloud migration partner.
- Access to AWS's extensive resources and support for delivering high-performance solutions.

### Benefits to AWS:

- Expanded reach through Cognizant's global delivery network.
- Increased adoption of AWS services through successful migration projects.
- Collaboration with a trusted partner to drive innovation and customer satisfaction.

This partnership creates a win-win ecosystem where both organizations can leverage their strengths to deliver exceptional value to their clients, driving digital transformation and achieving business goals.

# Assessment case studies

## 1. For a North American frozen food delivery company to migrate workloads from on-prem data center to AWS cloud

### Business requirements:

- Perform migration assessment of workloads from Data Center (MN) and Migrate Servers, VDI, Databases and legacy workloads to AWS.
- Baseline of current TCO/ROI of moving to AWS
- Migration cost and Modernization recommendations for applications to AWS
- Time criticality driven by upcoming data center contract expirations

### Tech stack:

- AWS Application Infrastructure Services: EC2, Lambda, ECS, EKS
- AWS Data & Storage Services: RDS, Aurora, EBS, FSx, EFS,
- Other AWS Services: AWS Workspaces, AppStream, AWS Config, SSM, AWS Batch

### On-Premises inventory:

- 475 Virtual and Physical Servers on Windows and Linux
- 204 VDIs
- 10% of Database Server are SQL Enterprise and 7% SQL Standard

### Solution:

- Discovery tool – Cloudamize is used for Infra and application discovery.
- Validated the infra and application details through workshops and with the aid of App support team.

- Conducted Migration Readiness Assessment
- Estimated AWS hosting costs for Servers, VDI, storage and networking etc.
- EC2 instance family selection, Right sizing and right hosting model
- Compare Total Cost of Ownership for “Do Nothing” v/s “4 Migrate to AWS” scenarios
- Provided 5-year cash flow model
- Target state architecture
- On-prem servers are targeted to migrate to EC2 instances on AWS, 100+ legacy dot net applications are recommended to move to EKS/ECS/Lambda
- Local (DAS) Storage is targeted to migrate to EBS volumes, Shared storage (NAS) to EFS
- 20+ SQL Databases are recommended to be migrated to RDS instances

### Business outcome:

Expected benefits – Post migration:

- A business case for migration with migration costs to AWS
- Approx. ~1.9 million savings over 5 years
- Reduced infra costs with right sizing
- 99.9% Of Carbon reduction in year one
- Suggestions for Re-platforming directly to containers
- Refactoring applications from .NET Framework to .NET Core using Porting Assistant
- Re-architecting serverless architecture
- Roadmap for Application Modernization Strategy

## 2. For an American health care/ insurance company to Migrate workloads from on-prem data center to AWS cloud

### Business requirements:

Perform assessment of TriZetto (Facets) applications by collecting infra & applications data & analyze its surrounds from infra perspective to arrive with the

- Business case & 5 year estimated costs to run applications on AWS cloud
- High level migration costs estimation
- Reduce unplanned downtime due to overload/ capacity issues

### Tech stack:

- Customer Landscape: Windows & Linux servers, Oracle database
- AWS Services: AWS EC2, EBS, NLB, ALB, S3 & S3 Glacier, Transit Gateway, VPC, NAT Gateway, AWS Shield, AWS IAM, AWS Config, ACM, Secrets Manager, KMS, CloudWatch, CloudTrail

### On-premises inventory:

- Application Servers – 96 (Windows – 88, Linux Servers – 8)
- Database Servers – 8

### Solution:

- Conducted source discovery sessions to collect infra and application details
- Performed MAP assessment with infra and application-level data and created business case with

- Right sizing, right hosting model & instance family recommendations
- Total Cost of Ownership comparison for On-premises v/s “Migrate to AWS” scenarios (current state v/s target state)
- 5-year TCO & ROI analysis
- Estimated AWS hosting costs for servers, storage and networking etc.
- High level target architecture & migration plan
- On-prem virtual servers are targeted to migrate to EC2 instances on AWS
- SAN storage is targeted to migrate to EBS volumes
- Databases are going to be installed & run on EC2 instances. Also, migrating to AWS RDS option is provided as alternative
- Also, analysed EC2 instances which are already migrated to AWS cloud and proposed the option to upgrade previous generation instances
- Proposed update options for windows servers which are end of life servers

### Business outcome:

Expected benefits – Post migration:

- Reduced infra costs by 39% with right sizing
- Reduced infra costs by 21% with matching on-prem capacity
- Significant RAM/CPU ratio improvement while migrating to AWS cloud
- Improved operational efficiency through advanced monitoring, centralized logging

### 3. For an American industrial technology conglomerate company to Migrate workloads from on-prem data center to AWS cloud

#### Business requirements:

As part of the data center footprint consolidation, migrating workloads from their existing data center to AWS cloud to

- Improve resiliency and reliability after migration
- Reduce data center operating costs
- Drive competitive efficiencies through modernization efforts
- Time criticality driven by upcoming data center contract expirations
- Reduce unplanned downtime due to overload/capacity issues

#### Tech stack:

- Customer Landscape: Windows & Linux servers, Java, .NET based apps SQL server, MySQL & Maria DB
- Assessment Tools: Device42, AWS MRA, MPA, Pricing calculator, Cognizant Migration Planner
- AWS Services: AWS EC2, EBS, NLB, ALB, S3 & S3 Glacier, Transit Gateway, VPC, NAT Gateway, AWS Shield, AWS IAM, AWS Config, ACM, Secrets Manager, KMS, CloudWatch, CloudTrail

#### On-premises inventory:

- Windows Servers – 188
- Linux Servers – 12
- Database Servers – 44

#### Solution:

- Deployed Device42 in data centre for application and infra discovery
- Validated infra details and gathered application-level details through SME interview sessions

- Performed rapid assessment with infra and application-level data and created business case with
  - Estimated AWS hosting costs for servers, storage and networking etc.
  - Right sizing, right hosting model & instance family recommendations
  - Compare Total Cost of Ownership for “Do Nothing” v/s “Migrate to AWS” scenarios (current state v/s target state)
  - Provide 5-year cash flow model
    - Migration plan & wave group planning
    - Landing zone validation, Target state architecture
    - Developed DC exit strategy
    - Completed pilot migration of 5 applications
- On-prem virtual servers are targeted to migrate to EC2 instances on AWS
- SAN storage is targeted to migrate to EBS volumes, Shared storage to EFS and Object data to S3 buckets
- Databases are going to be installed & run on EC2 instances

#### Business outcome:

Expected benefits – Post migration:

- Reduced infra costs by 41% with right sizing
- Estimated Annual ROI will be 64% through the cloud migration
- Reduced operational costs through decommission of 11 applications
- Estimated MAP migrate benefit is \$181K through AWS credit
- Reduced assessment timelines through rapid discovery with Device42
- Improved operational efficiency through advanced monitoring, centralized logging



## Future work – 2025 and beyond...

### a. Integrating GenAI through Cognizant proprietary platform

Identified several use cases for AWS MAP engagements, ensuring comprehensive end-to-end implementation across all phases. Below are some key use cases for the MAP Assessment phase – These use cases will be implemented through our GenAI platform for the identified engagement projects, with plans to extend its application to other projects across the organization.

- **Workload Analysis:** Providing prescriptive guidance for workload analysis, wave planning for migration batches, and predictive risk management.
- **Data Preparation & Validation:** Automating data cleansing, validation, and dependency visualization.
- **Effort Estimation & Cost Prediction**
- **Metadata Management:** Intelligent tagging and enrichment.
- **SLO/SLI Management:** Analysis and prioritization.
- **Migration Recommendations:** Engine for migration patterns.
- **Post-Migration Resource Optimization**

### b. AWS ACDC Program

The ACDC (Accelerate to the Cloud from your Data Center) program is part of AWS's Strategic Customer Engagements (SCE) initiative by AWS aimed at helping customers accelerate their migration from on-premises data centers to the AWS cloud.

This program involves AWS working closely with customers to develop a comprehensive project strategy, including implementation, modernization, and building a compelling business case for cloud adoption.

The program is designed to handle strategic, large, complex, or highly competitive deals, and it involves collaboration with AWS field sales executives, AWS Partners, and other internal stakeholders to drive results.

It offers several key benefits make the AWS ADCD program a valuable initiative for organizations aiming to accelerate their cloud migration journey:

- **Comprehensive Project Strategy:** The program helps develop a detailed project strategy, including implementation, modernization, and building a compelling business case for cloud adoption.
- **Collaboration with AWS Experts:** It involves close collaboration with AWS field sales executives, AWS Partners, and other internal stakeholders to drive results.
- **Handling Complex Deals:** The program is designed to manage strategic, large, complex, or highly competitive deals.
- **Workload Analysis and Migration Planning:** It provides prescriptive guidance for workload analysis, wave planning for migration batches, and predictive risk management.
- **Automated Data Preparation and Validation:** The program automates data cleansing, validation, and dependency visualization.
- **Effort Estimation and Cost Prediction:** It offers tools for effort estimation and cost prediction, helping organizations plan their migration budgets effectively.
- **Post-Migration Resource Optimization:** The program includes recommendations for post-migration resource optimization to ensure efficient use of cloud resources.



## Conclusion

In conclusion, the AWS Migration Acceleration Program (MAP) Assessment phase plays a crucial role in evaluating an organization's readiness for cloud migration. By conducting a thorough assessment of the existing IT landscape, identifying potential challenges, and providing tailored recommendations, the MAP Assessment phase ensures a smooth and efficient transition to AWS. The primary objective of this phase is to develop a directional business case that helps customers proceed with cloud migration by comparing the operational expenditures (OpEx) in the current environment with the benefits of cloud capabilities against on-premises solutions. This phase not only helps in minimizing risks but also in optimizing costs and enhancing overall operational efficiency, thereby setting a strong foundation for a successful cloud migration journey.

## References

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