Scale and modernize business with Azure
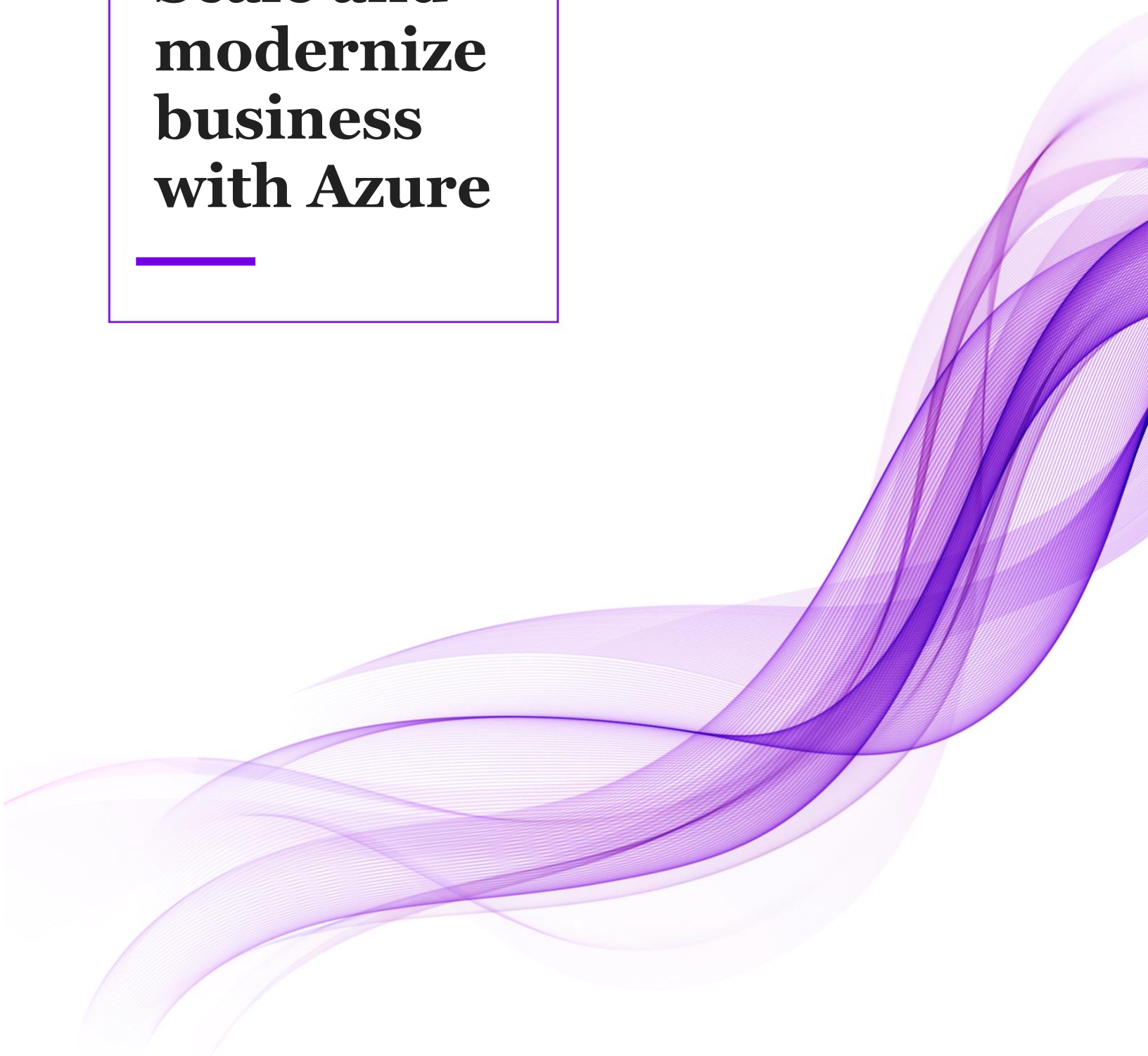
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1 Executive Summary

1.1 Introduction

Microsoft Azure provides a platform to migrate your complete on-premises infrastructure to the cloud platform in the modernization, and most straightforward way, which will provide security, accessibility, availability, and cost improvement to your environment.

This document explains the Azure domains, the strategy to migrate your infrastructure, and the approach and tool used to migrate the services on the Cloud platform.

> *Microsoft Azure is a cloud service platform that provides services in different domains, such as computing many types of storage, database, secure networking, developer tools, and other functionality which empower organizations to scale and grow their business.*

1.2 Azure Services are categorized as follows:

- Infrastructure as a service or IaaS is reliable, scalable cloud computing, which resides in Azure. Infrastructure as a service can scale up or down depending on demands while only paying for what you use.

- Platform as a Service or PaaS lets you avoid the cost and complexity of procuring and managing software licenses, the application infrastructure, and middleware. Platform as a Service is designed to support the complete application lifecycle, build, running, and management of applications.

- Software as a Service (SaaS) is cloud software that exists on the internet and that you access from your web browser.

1.2.1 Azure Benefits

The benefits of Azure go beyond budget cost management. The tasks to maintain and support certain technologies such as Server, AD, and SharePoint is greatly facilitated with the combination of Azure and Office 365. This frees up IT staff to work on strategic projects and initiatives rather than spending time on general IT maintenance.

Cost-Effectiveness and Flexible Expenditure

2 Pay-as-you-go with Azure

- Azure provides a pay-as-you-go payment plan that permits the environment to manage its IT budget better since it only pays for what we use. We don't need to have the extra cost of a physical server, maintenance cost, or license cost with Azure

- You can also choose the hybrid model and maintain their on-premises data centers while benefiting from the flexibility of DR and azure backup vault in the Azure cloud.

> Azure provides hundreds of certifications from PCI to ISO27001 and has a global dedicated Cyber Security Operations Centre (CSOC). Azure provides numerous security options, including encryption of links and encrypted data at rest.

2.1 Ultimate Data Security

- Microsoft introduces great technologies every year into security, including the security of the Azure platform to protect your organization's data and business assets. Azure provides hundreds of certifications from PCI to ISO27001 and has a global dedicated Cyber Security Operations Centre (CSOC).

- Azure provides numerous security options, including encryption of links and encrypted data at rest. Also, security gets a whole lot easier for everyone in threat detection, DDoS detection and protection, and integration with existing Active Directory sign-on.

2.2 Disaster Recovery

- Cyber security and risk management are critical to IT and business, and DR is the main feature of cloud services. MS Azure provides built-in DR options, hot and cold.

- Modules, rolling reboot capabilities, and backups are prepared easily with real-time 24*7 monitoring.

- This type of DR is challenging to achieve with on-premises environments but comes as standard with Azure cloud.

2.3   Availability and Scalability

The azure cloud offers HA and redundancy because of Microsoft's global presence. With data centers located in, Azure provides an SLA of 99.95% uptime, which equals less than a few hours of downtime every year. Like other cloud services, Azure cloud can quickly scale up or down resources within a minimum time.

2.4   Compliance

The data center in Azure complies with every country's regulation and privacy needs, such as GDPR and HIPPA. Azure cloud has been designed with security and data privacy in mind to resolve risk analysis and costly mistakes.

3   The execution plan for Azure Migration

Migrating your on-premises data center to an IaaS platform like Azure is a process and, even though there are many benefits to migrating to the cloud, such as enhanced productivity, greater agility, and fewer costs.

Taking a step-by-step approach will help you succeed in your cloud journey, minimize the risks, and control costs.

Before beginning your cloud journey, you should first understand why you want to migrate to the cloud. Ask yourself how you want to use the cloud and its role in your IT strategy. Even though cutting costs is essential for any IT leader, it should not be your primary motivation, but flexibility, scalability, and agility are.

Below are three steps that will help you prepare for your Azure migration.

Step 1: Assess Your Environment and Cloud Readiness

Start by discussing the migration project with the relevant stakeholders, calculating your current infrastructure's Total Cost of Ownership (TCO), and identifying the loads and applications that might benefit from the Azure cloud.

MS will help you improve productivity and better manage your cost, but only some workloads and applications in your current infrastructure are good sources for the cloud. Some legacy applications might not be able to run on Azure as an infra model, and you may need to factor, architect, or rebuild applications from the root using cloud technologies. This can lead to development costs that need to be taken into allow.

Forming a solid inventory by analyzing all your existing workloads and applications, classifying them, and checking the costs related to the migration and operation of Azure is critical to the success of a cloud migration strategy.

3.1   Virtual Networks

Create a Virtual Network to keep the same performance, security, and stability you had with your on-premises data center. Review the subnets you will need to configure and how you will manage your DNS – via AD or the Azure DNS service

3.2   Storage

Verify storage services and choose the solution depending on the allowed number of operations per second and the nature of your data – standard & premium and hot & cold.

3.3   Scalability

Auto scale that you can use to scale applications to meet evolving performance needs dynamically. This is where you can adjust your costs.

Step 2: Define a Migration Strategy

The "Lift and Shift" is the most common approach when migrating to the cloud. It involves replicating on-premises environments as closely as possible in the cloud. Physical and VM can be migrated to Azure in real-time using Azure Site recovery. This same technology can be used for disaster recovery purposes.

Discover and Evaluate

1. Start with a comprehensive assessment of your current environment.
2. Verify which servers, networks, applications, and services to migrate.
3. Engage the IT and development teams that use these services. By taking these teams into the process, we can ensure they can provide migration guidance, feedback, and support.
4. Prepare a complete inventory and dependency matrix of the servers and services that want to migrate to Azure. It will help you check how services communicate with each other. Businesses may have many applications deployed, and thorough research of each application before migration is necessary.

There are primary migration options for every application. Each application must be analyzed to determine the best option for each case.

- **Rehost**—re-create your current infrastructure in Azure cloud. This process involves minimal work due to minor changes and takes migrating a VM or virtual machine from a data center to a VM in Azure. Otherwise known as the lift and shift approach.

- **Refactor**—migrate servers and services running on VMs to a Platform-as-a-Service environment. This process can reduce operational stress, improve release agility, and save costs. Implementation of small changes to ensure everything works more efficiently in the Azure cloud can significantly improve performance.

- **Re-architect**—few systems need to be re-architected for migration. That is typically done to have an application cloud-supportive, or when taking new software approaches like vaults and microservices.

- **Rebuild**—the total cost of re-architecting your software is higher than starting from the beginning, you might want to rebuild your application.

- **Replace**—You might pay off to change existing custom-built applications with 3rd solutions. Before doing- refactoring, architecting, or rebuilding your application, need to evaluate available software as a service that can offer alternative solutions.

Step 3: Cost Management

Reviewing current ongoing cost analysis and review can check you achieve a balance between workload demands and costs. MS Azure offers numerous tools to manage costs:

- **Cost analysis**—lets you track the usage of Azure resources and the management of costs across Azure and other clouds.
- **Cost alerts**—lets you set up alerts and notifications when Azure resources exceed a predetermined budget.
- **Budgets**—lets you set policies to improve accountability and manage costs across various departments using the Azure cloud.
- **Azure Advisor**—identifies and tracks idle or underutilized resources, and offers recommendations for optimizing costs, reducing waste, and improving efficiency.

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