



# AZURE: CLOUD COMPUTING SERVICE WHITEPAPER

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## Abstract

"Azure is a rapidly growing cloud computing platform that provides an ever-expanding suite of cloud services. This paper is guidance on Migration of legacy sql server to cloud as a service (IaaS) application on Azure. It explores what it takes to get them migrated to Azure cloud the promised new technology landscape with enormous offerings."



## Table of Contents

Abstract .....	1
Introduction .....	3
Defining the target state on Azure .....	4
Target SQL service on Azure.....	4
Defining the target state architecture.....	5
Data migration:.....	6
Post migration testing and reconciliation .....	6
References.....	7

## Introduction

The amount of data generated today can be overwhelming. In the face of mounting pressure to manage costs, optimize performance, and use data for competitive advantage, IT organizations are increasingly looking to the cloud to help relieve the pressure. Azure is a rapidly growing cloud computing platform that provides an ever-expanding suite of cloud services. These include analytics, computing, database, mobile, networking, storage, and web services. Azure integrates tools, templates, and managed services that work together to help make it easier to build and manage enterprise, mobile, web, and Internet of Things (IoT) apps faster.

## Microsoft Azure Pillars

The Azure approach to trust is based on five foundational principles: Security, Compliance, Privacy, Resilience, and Intellectual property (IP) protection. A well-designed Azure application should focus on these five pillars of software quality.

Pillars	Description
Security	To protect applications and data from threats.
Availability	The proportion of time that a system is functional and working
Resilience	A system's ability to recover from failures and continue to function
Management	Operations processes which keep a system running in production
Scalability	A system's ability to handle increased load.

## Migration of Existing SQL server estate to Azure Cloud

Migration of the SQL server estate (along with SSIS, SSAS and SSRS) to Azure cloud can be categorized into three buckets as under:

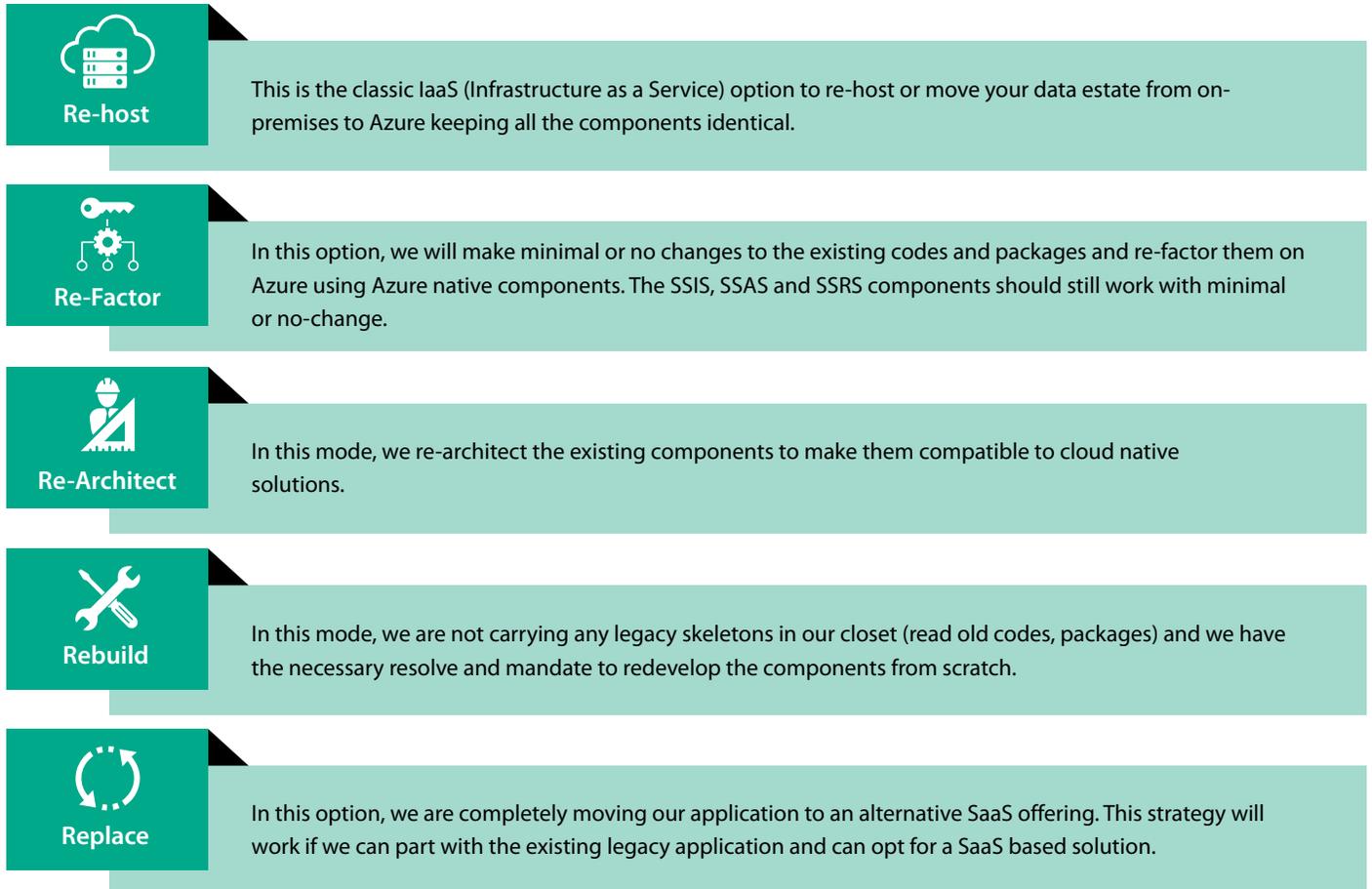
- Identifying the right service option for SQL Service on Cloud – define target state.
- Migrating the components – SSIS, SSAS and SSRS to Cloud.
- Migrating existing data in the SQL server to Cloud.



## Defining the target state on Azure:

Defining the new target state architecture is dependent upon several factors which includes a target state assessment framework which will consider all these factors and upon much deliberation and due diligence, based on a scientific evaluation and scoring model, we should arrive at the target state selection.

Cloud workload migration strategy usually includes these “5R(s)” in some or other variations:

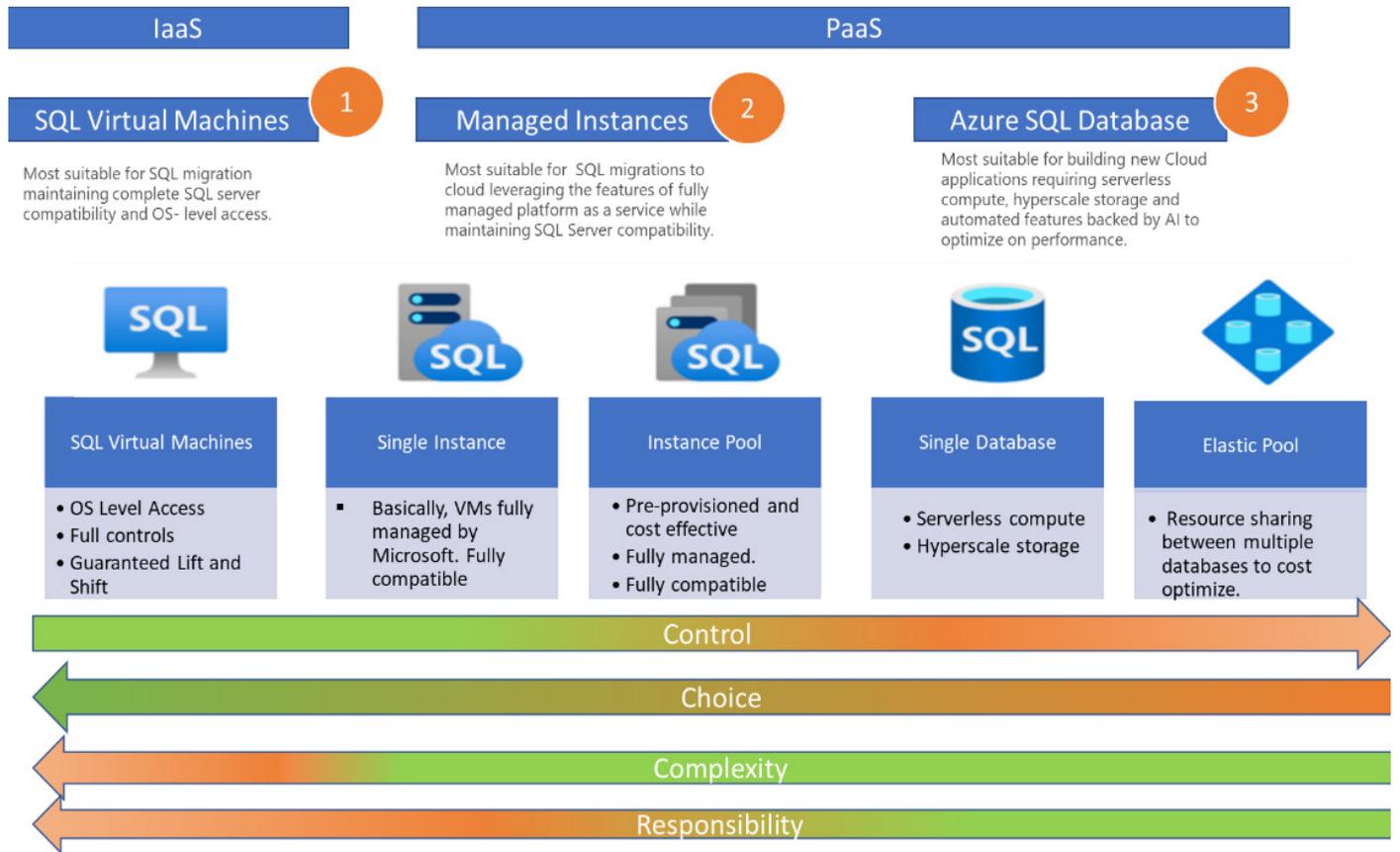


## Target sql service on Azure:

We have following options available to choose target SQL service on Azure:

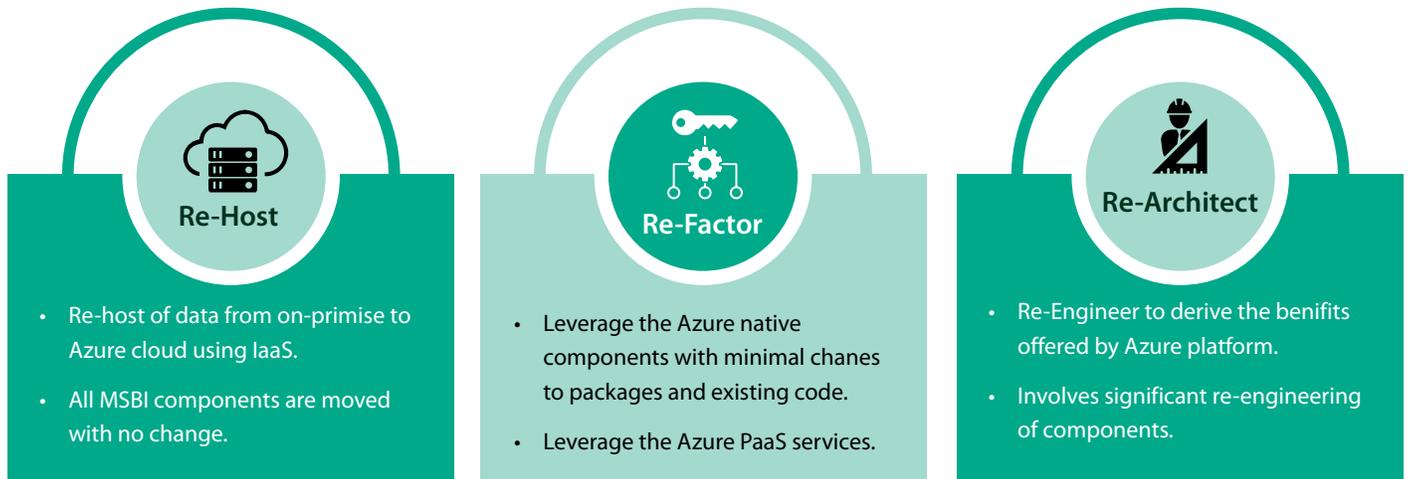


## Deciding target SQL service on Azure:



## Defining the target state architecture:

The target state architecture will be based on the platform migration strategy that we choose in the above step. These includes:



## Data migration

Microsoft Azure provides several ways of moving the data to Azure SQL databases. Which one to use depends on certain criteria which includes:

- Target SQL platform on Azure – which migration service to use based on what SQL service you have availed on cloud- as depicted in illustration below.
- Size of the source databases – BACPAC for smaller and DMS for bigger Databases
- Connectivity to Azure – Vnet or Express route.
- Allowable downtime – Zero downtime, Transaction replication, Relatively Large window – BACPAC
- Data Sync – whether you need to sync your data after initial data load.

## Post migration testing and reconciliation:

We must build tests to verify the migrations and generate reconciliation reports. This is a very important aspect in any migration and necessary due diligence needs to be provided in creating the migration test cases. The test results and the reconciliation reports can provide the necessary confidence amongst the stakeholders post the migration.

It is also prudent to constantly monitor the new platform for any discrepancies in the data, if the migration involves version upgrades or mismatches



## Conclusion

Microsoft Azure is well poised with a plethora of tools, accelerators, platform choices and service options to facilitate organizations to make the transition from on-premises to cloud. For the SQL server migration from on-premises to Azure cloud, we just discussed the various SQL Server options, the migration assessment tool (DMA) and the various migration tool kit it provides including Data Migration service (DMS) for a seamless migration to Azure.

Thanks to Azure, MSBI technologies are now getting a new lease of life and are rekindled to become a technology of choice for many new greenfield implementations, not only the migration use cases.



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