



Application Portfolio Assessment

Analysis, Recommendations and Next Steps

Date: March 19, 2019

Prepared for:

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Executive Summary

This report is management report deliverable for the Application Portfolio Assessment engagement Microsoft has funded, and UnifyCloud has completed, on your organization's behalf.

- Based on an application-level analysis of (3) .NET apps identified as a portfolio of apps commencing with app scans on 1/31/19.
- Including (1,660) databases currently running on (3) SQL VMs of SQL Server 2008 R2 hosted on Windows Server 2008 R2. All of these technologies are nearing their End of Service.
- Apps were scanned and analyzed by our CloudPilot® Azure-readiness static code analysis solution.
- Utilizing the latest Azure DevOps best practices for apps running in an efficient, secure and well-managed Azure subscription.
- Comparison of various migration strategies (e.g., refactor, rebuild) that should be considered for your apps that were scanned and analyzed.



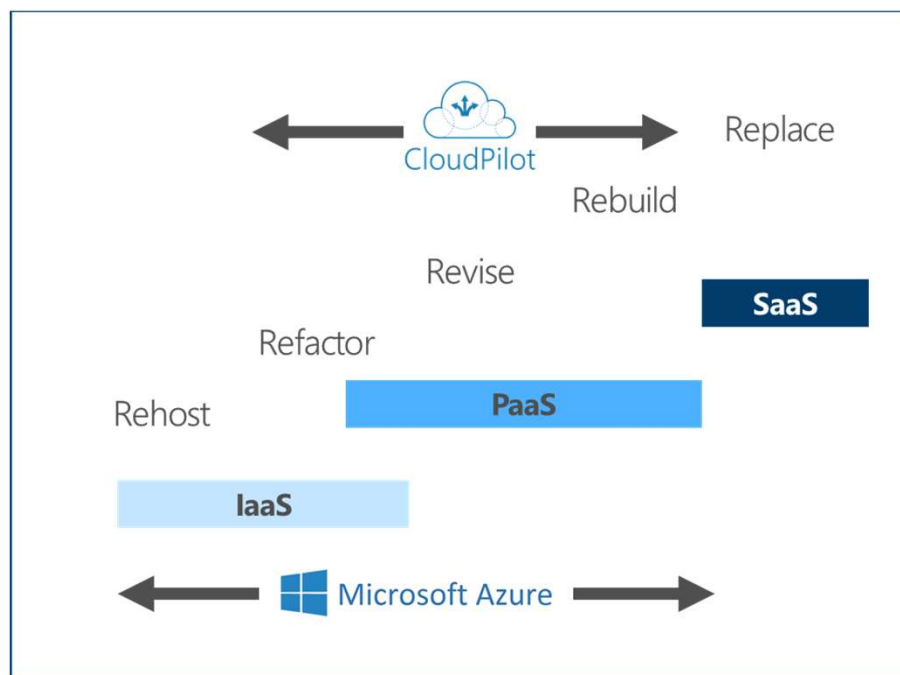
Executive Summary

Among the key findings are the following:

- The (3) applications we analyzed, listed below, all can be migrated using the same app and database strategies with the level of remediation effort (person days) as noted.
 - Civic Web (Maple)
 - Application Strategy: Azure AppService (12 days)
 - Database Strategy: Azure SQL Database Elastic Pool
 - OCR (MOCR)
 - Application Strategy: Azure AppService (3 days)
 - Database Strategy: Azure SQL Database Elastic Pool
 - Site Creation (Mpackaging)
 - Application Strategy: Azure AppService (3 days)
 - Database Strategy: Azure SQL Database Elastic Pool
- The all-up run-rate cost for these apps running in Azure PaaS in the US and Canada is \$7,594 / month as compared to IaaS VMs at \$21,268 / month.
- Details of these analyses are contained further in this report and in spreadsheets provided as additional deliverables.

Cloud migration strategies used to evaluate your applications

We have evaluated the applications you have identified for assessment for modernization beyond a straight “lift & shift” (rehost) migration to Azure. The best-fit migration options used in our analysis are listed below. We used our CloudPilot® static code analysis solution specifically designed to assess on-premises applications for Azure migration to evaluate these options.

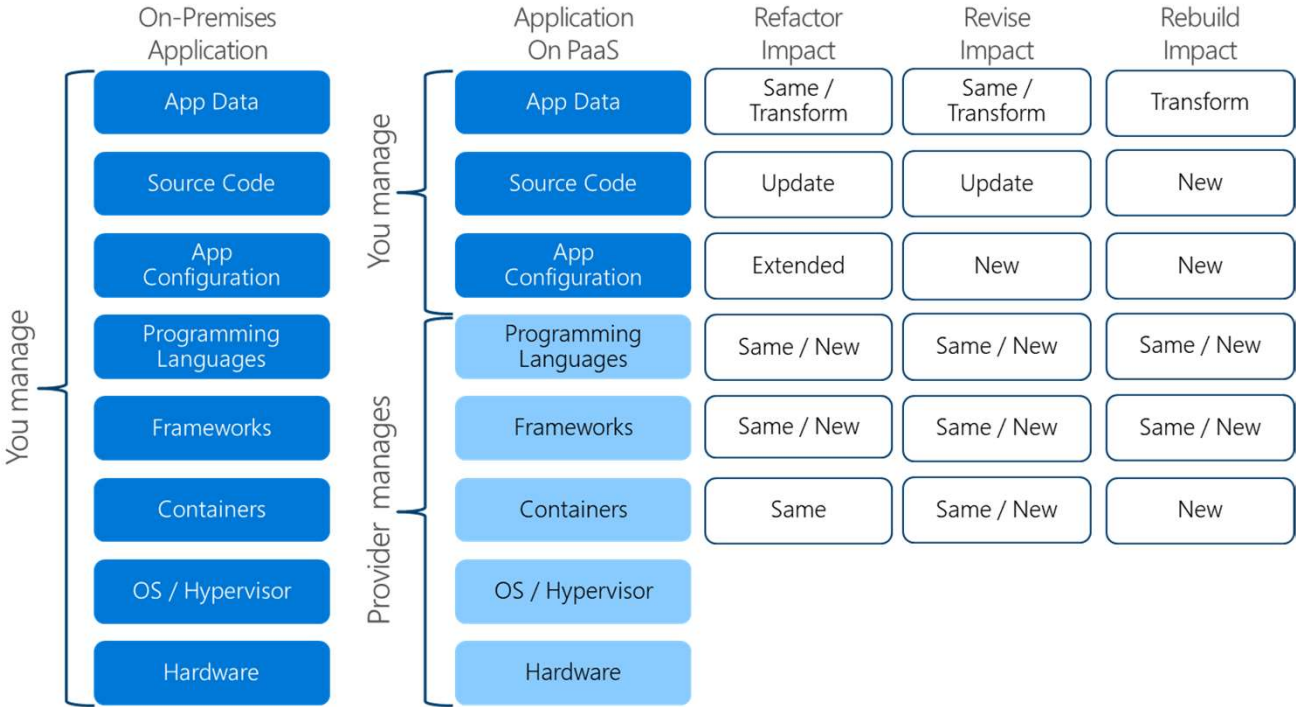


Evaluate Best-Fit Migration Strategy Options

- Application Modernization
- Minimal / Configuration Change
 - Container Services
 - Azure Container Service (Docker, Kubernetes)
 - Azure Container Instances
 - Container Running on Azure VM
 - Azure App Service
 - Azure VM (lift & shift)



Our application assessment approach prioritizes Azure PaaS



Each of these application migration options have implications based on the complexity of the strategy, the effort and costs associated with that strategy, and the level of DevOps experience your organization needs to be successful using that strategy.

The analytic approach used by CloudPilot® used these technology enhancements and applied them to the application migration strategies.

Source: Five Options for Migrating Applications to the Cloud: Rehost, Refactor, Revise, Rebuild or Replace; Gartner October 2011



Your Azure application migration opportunities

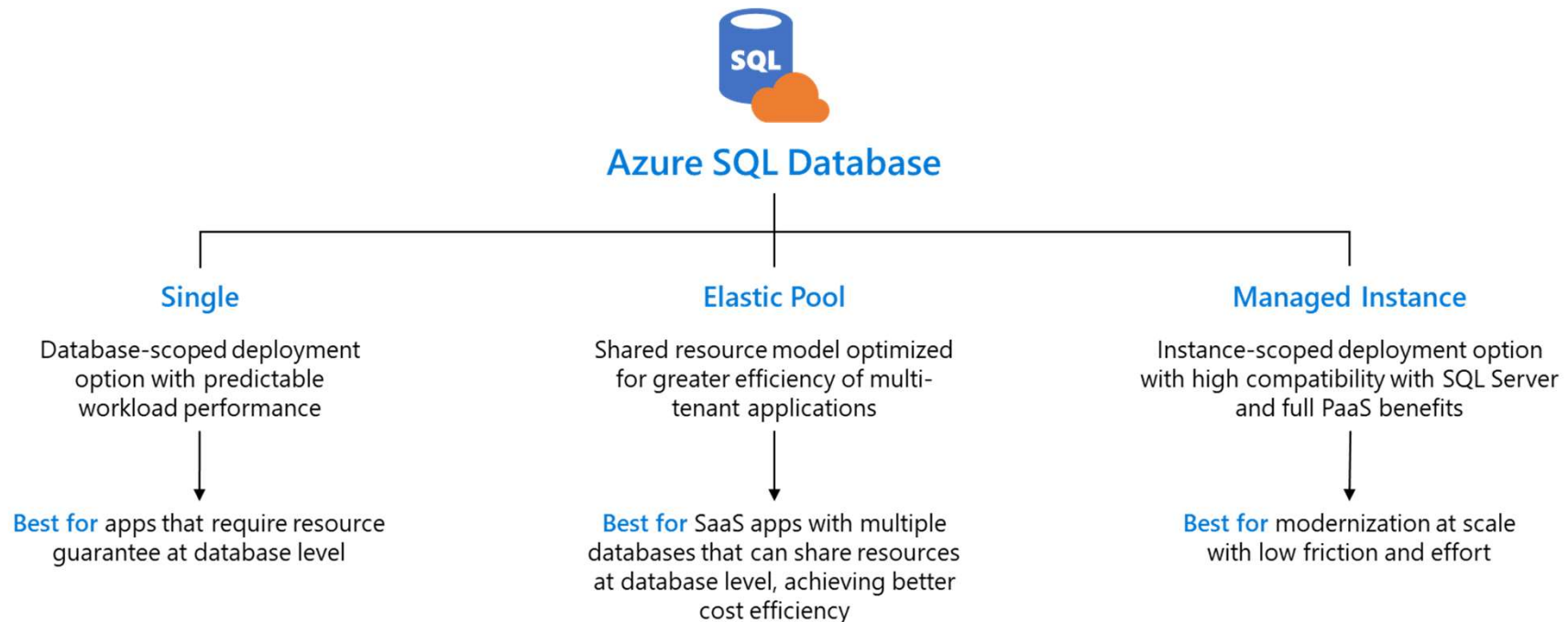
The evaluation of the (3) applications that you have identified for our assessment are summarized below. The detailed analyses for this portfolio is provided in the appendix. Where possible we look to PaaS alternatives first (AppService, Containers) followed by a VM-based rehosting approach (i.e., “lift and shift”). We also look for a single migration strategy when alternatives are similar. Our analyses and recommendations are summarized in the table below.

Application Name	AppService Readiness / Estimate (Person-Days)	Container Readiness / Estimate (Person-Days)	VM Rehost Readiness / Estimate (Person-Days)	Migration Strategy Recommendation
Civic Web (Maple)	72% / (12)	74% / (12)	75% / (4)	Refactor - AppService
OCR (MOCR)	86% / (3)	86% / (6)	89% / (2)	Refactor - AppService
Site Creation (Mpackaging)	88% / (3)	88% / (6)	91% / (2)	Refactor - AppService



We have looked at your data estate migration opportunities as well

In addition to the application migration strategies, we have looked at the databases associated with these apps to recommend the best approach. Where possible we look to Azure PaaS data estate alternatives (Azure SQL Database (DTU, vCore), Azure SQL Database Elastic Pool, Azure SQL Database Managed Instance) and if necessary SQL running on a VM in Azure (IaaS).



Your Azure database migration opportunities - US

As part of our database cost analysis for the US outlined further in this report, we have determined a SQL Azure Database Elastic Pool strategy is the recommended strategy for all the apps analyzed as compared to other Azure SQL Database alternatives or the often least cost approach of SQL running on Azure VMs.

SQL Azure DB Elastic Pool			SQL VM in Azure				
	South Central US	Total Price	ComputerName	Country	RegionWise	AzureVmSize	Payasyougo
50 eDTUs	10 (958 Databases)	\$ 1,102.60	server3773	United States	US South Central	E8-2s v3	\$ 986.96
100 eDTUs	1 (7 Databases)	\$ 220.52	Total				\$ 986.96
200 eDTUs	1 (5 Databases)	\$ 441.04					
Total		\$ 1,764.16					
Type: Elastic Pool , Backup Tier : RA-GRS, Service Tier : Standard							

Elastic Pools is a collection of elastic database throughput units (eDTUs) and storage shared between multiple databases. If the sum of DTUs for single databases > 1.5x eDTUs needed for pool, pool is more cost effective and is recommended.

Basic	Standard	Premium
200 Max Databases Per Pool	200 Max Databases Per Pool	50 Max Databases Per Pool
1200 Max eDTUs Per Pool	1200 Max eDTUs Per Pool	1500 Max eDTUs Per Pool
100MB Storage Per DTU	1GB Storage Per DTU	0.5GB Storage Per DTU
~117GB Storage Max	~1TB Storage Max	750 GB Storage Max

Your Azure database migration opportunities - Canada

Additionally, our database cost analysis for Canada outlined further in this report, we have determined a SQL Azure Database Elastic Pool strategy is the recommended strategy for all the apps analyzed as compared to other Azure SQL Database alternatives or the often least cost approach of SQL running on Azure VMs.

SQL Azure DB (Elastic Pool)			SQL VM				
	Canada Central	Total Price	ComputerName	Country	RegionWise	AzureVmSize	Payasyougo
50 eDTUs	6 (598 Databases)	\$ 793.88	Server9563	Canada	Canada Central	E16-4s v3	\$ 1,681.92
100 eDTUs	1 (69 Databases)	\$ 264.63	Server9564	Canada	Canada Central	E16-4s v3	\$ 1,681.92
200 eDTUs	1 (23 Databases)	\$ 529.25	Total				\$ 3,363.84
Total		\$ 1,587.76					
Type: Elastic Pool , Backup Tier : RA-GRS, Service Tier : Standard							



The US cost analysis for the recommendations is compelling

Diligent Cost Summary								
PaaS			Monthly Cost	IaaS			Monthly Cost	
Compute	App Services			Windows VM				
	Service Name	Azure App Service		ComputerName	Country	Region	AzureVmSize	Payasyougo
	Maple	S3 (4 Cores, 7 GB RAM, 50GB Storage)		vserver16676	United States	US South Central	D2S V3	\$ 154.03
	Total		\$	292.80	vserver16677	United States	US South Central	D2S V3
				Total		\$	308.06	
Storage	Storage associated with App Services		\$	10000 GB SAN Storage		\$	482.04	
SQL	SQL Azure DB Elastic Pool			SQL VM in Azure				
		South Central US	Total Price	ComputerName	Country	RegionWise	AzureVmSize	Payasyougo
	50 eDTUs	10 (958 Databases)	\$ 1,102.60	server3773	United States	US South Central	E8-2s v3	\$ 986.96
	100 eDTUs	1 (7 Databases)	\$ 220.52	Total		\$	986.96	
200 eDTUs	1 (5 Databases)	\$ 441.04						
Total		\$	1,764.16					
Type: Elastic Pool , Backup Tier : RA-GRS, Service Tier : Standard								
Networking	Service	Quantity	Price	Service	Quantity	Price		
	Azure Active Directory	N/A	\$ -	Security Center	3 Nodes	\$ 43.80		
	Key Vault	1 HSM Key	\$ 1.03	Azure Active Directory	N/A	\$ -		
	Application Gateway	1 Instance	\$ 110.38	Key Vault	1 HSM Key	\$ 1.03		
	Bandwidth	1 TB	\$ 88.65	Application Gateway	1 Instance	\$ 110.38		
	Traffic Manager	2 Endpoints	\$ 1.62	Bandwidth	1 TB	\$ -		
	Network Watcher	1 Instance	\$ 33.80	Traffic Manager	2 Endpoints	\$ 1.62		
	Load Balancer	-	\$ -	Network Watcher	1 Instance	\$ 33.80		
	Express Route	1 Instance	\$ 110.00	Load Balancer	-	\$ -		
	Virtual Network	1 TB	\$ 20.48	Express Route	1 Instance	\$ 110.00		
	IP Addresses	1 IP Address	\$ 2.92	Virtual Network	1 TB	\$ 0.10		
	Azure Advisor	N/A	\$ -	IP Addresses	1 IP Address	\$ 2.92		
	App Service Backup Cost	10 GB	\$ 10.00	Azure Advisor	N/A	\$ -		
	Total		\$	378.88	Backup	3 Instance	\$ 4,316.55	
					Total		\$	4,620.20
	Total	\$3,435.84			\$6,397.26			

Our analysis for apps, data, and the Azure services for a secure and well-managed Azure environment indicates that a PaaS approach utilizing the following provides a best approach compare to IaaS.

- Compute: AppService
- Data: Azure SQL Elastic Pool



The Canada cost analysis for the recommendations is compelling

Diligent Cost Summary								
PaaS			Monthly Cost	IaaS			Monthly Cost	
Compute	App Services			Windows VM				
	Service Name	Azure App Service		ComputerName	Country	Region	AzureVmSize	Payasyougo
	MOCR	S2 (2 Cores, 3.5 GB RAM, 50GB Storage)		vserver15899	Canada	Canada Central	D2S V3	\$ 148.19
	Mpackaging	S3 (4 Cores, 7 GB RAM, 50GB Storage)		vserver15900	Canada	Canada Central	D2S V3	\$ 148.19
	Maple	S3 (4 Cores, 7 GB RAM, 50GB Storage)		vserver15901	Canada	Canada Central	D2S V3	\$ 148.19
	Total	\$ 732.00		vserver16211	Canada	Canada Central	DS1 V2	\$ 102.20
				Total			\$ 546.77	
Storage	Storage associated with App Services		\$ 1,200.00	10000 GB SAN Storage			\$ 526.45	
SQL	SQL Azure DB (Elastic Pool)			SQL VM				
		Canada Central	Total Price	ComputerName	Country	RegionWise	AzureVmSize	Payasyougo
	50 eDTUs	6 (598 Databases)	\$ 793.88	Server9563	Canada	Canada Central	E16-4s v3	\$ 1,681.92
	100 eDTUs	1 (69 Databases)	\$ 264.63	Server9564	Canada	Canada Central	E16-4s v3	\$ 1,681.92
	200 eDTUs	1 (23 Databases)	\$ 529.25	Total				\$ 3,363.84
	Total	\$ 1,587.76						
Type: Elastic Pool, Backup Tier : RA-GRS, Service Tier : Standard								
Networking	Service	Quantity	Price	Service	Quantity	Price		
	Azure Active Directory	N/A	\$ -	Security Center	6 Nodes	\$ 87.60		
	Key Vault	3 HSM Key	\$ 3.03	Azure Active Directory	N/A	\$ -		
	Application Gateway	3 Instance	\$ 331.13	Key Vault	1 HSM Key	\$ 1.03		
	Bandwidth	1 TB	\$ 88.65	Application Gateway	1 Instance	\$ 110.38		
	Traffic Manager	6 Endpoints	\$ 3.78	Bandwidth	1 TB	\$ -		
	Network Watcher	1 Instance	\$ 42.80	Traffic Manager	2 Endpoints	\$ 1.62		
	Load Balancer	-	\$ -	Network Watcher	1 Instance	\$ 42.80		
	Express Route	1 Instance	\$ 110.00	Load Balancer	-	\$ -		
	Virtual Network	1 TB	\$ 20.48	Express Route	1 Instance	\$ 110.00		
	IP Addresses	3 IP Address	\$ 8.76	Virtual Network	1 TB	\$ 0.10		
	Log Analytics	6 VMs monitored	\$ 19.32	IP Addresses	1 IP Address	\$ 2.92		
	Azure Advisor	N/A	\$ -	Log Analytics	6 VMs monitored	\$ 19.32		
	App Service Backup Cost	10 GB + 10 GB + 10 GB	\$ 10.00	Azure Advisor	N/A	\$ -		
	Total		\$ 637.95	Backup	6 Instance	\$ 10,057.69		
			Total		\$ 10,433.46			
Total	\$4,157.71		\$14,870.52					

Our analysis for apps, data, and the Azure services for a secure and well-managed Azure environment indicates that a PaaS approach utilizing the following provides a best approach compare to IaaS.

- Compute: AppService
- Data: Azure SQL Elastic Pool



Recommended next steps align with the Azure Migrate framework

As a Microsoft Azure Migrate partner we have developed a detailed approach for successful migration to a production-ready, enterprise grade Azure environment using the four stages below.



Assess

Identify and inventory on-premise resources to plan where cloud migration should start.



Migrate

Migrate quickly and efficiently with flexible, powerful tools. Ensure minimal business impact.



Optimize

Streamline resources to improve performance, maximize ROI, and maintain compliance.



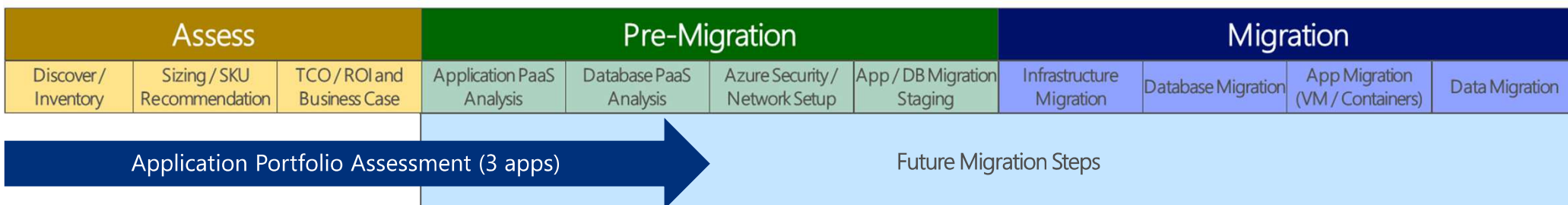
Secure/Manage

Fine tune resources to strengthen security and gain oversight of analytics and Azure usage.

Recommended next steps align with the Azure Migrate framework

With the delivery of this Application Portfolio Assessment report, you have completed the first two Pre-migration steps for (3) apps and their associated databases. There are two migration paths to consider:

- Option 1: Complete the remaining six migration steps for these apps as a pilot engagement.
- Option 2: Complete the PaaS analysis on remaining LOB apps and then complete the remaining six migration steps using a multi-phased migration strategy.



Appendix - Application Level Analysis

CloudPilot Saved Joint Team 6+ Developer-Months of Work



662,837 lines of code assessed by CloudPilot:

 **13 Minutes** 

662,837 lines of code assessed manually*:

      **198 Dev-Days**



* Microsoft IT estimates it takes three days to manually scan ~10,000 lines of code to assess for migration to Azure

Application Name : MOCR

Region : East US

Scan Result

Project Name	Application Type	No. of Database	Application Components	Code Lines	Application Platform	Scanned Date
mapletoappservices	Web Application	Not Scanned	2	238547	.Net	01-29-2019

2 Lines of code scanned

1 Development effort for migration options: PaaS, Containers and VMs

3 Count of code changes required for each migration option

App Service enables you to build and host web applications in the cloud. It offers auto-scaling and high availability, and provides automated deployments from GitHub, Visual Studio Team Services, or Azure DevOps. You can also move to Azure app services, as it has no blockers & has additional features.

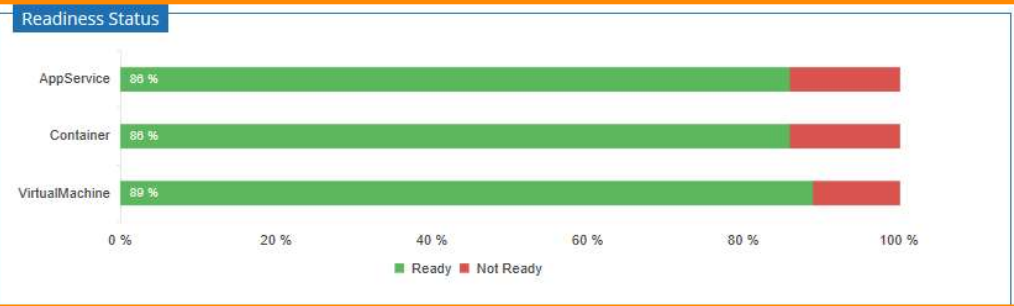
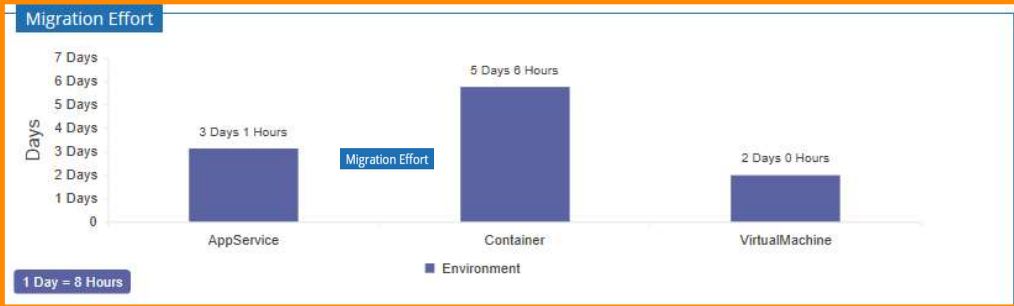
Virtual Machine.

Recommendations Result

App Service	8
Virtual Machine	6
Containers	8

Azure Infrastructure

Azure App Service	8	
Virtual Machine	6	DS2 v2 (US\$ 183.96)
Azure Container	8	DS2 v2 (US\$ 213.16)



Application Name : Maple

Scan Result

Project Name	Application Type	No. of Database	Application Components	Code Lines	Application Platform	Scanned Date
mapletoappservices	Web Application	Not Scanned	5	200962	.Net	01-29-2019

APPLICATION

Recommendations

Recommended Application Platform : Azure App Service enables you to build and host web applications in the programming language of your choice without managing infrastructure. It offers auto-scaling and high availability, supports both Windows and Linux, and enables automated deployments from GitHub, Visual Studio Team Services, or any Git repo. [More Info...](#)

Why : This application is a good choice to move to Azure app services, as it has no blockers & has additional features without any cost.

Other Option : Azure Container Service and Virtual Machine.

Recommendations Result

App Service	16
Virtual Machine	14
Containers	15

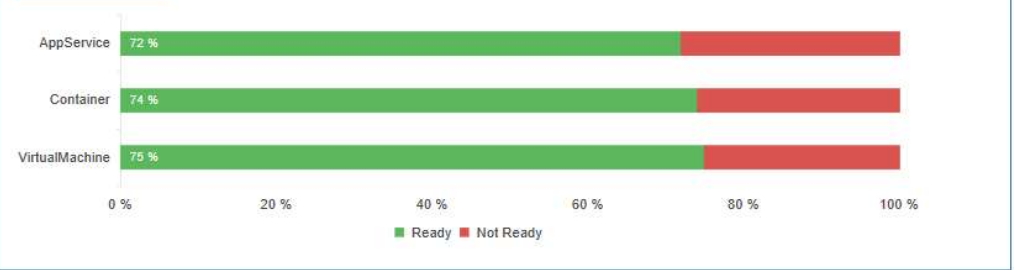
Azure Infrastructure Cost

Azure App Service	S2 (US\$ 146.00)
Virtual Machine	DS2 v2 (US\$ 183.96)
Azure Container	DS2 v2 (US\$ 213.16)

Migration Effort



Readiness Status



Application Name : MOCR

Scan Result

Project Name mapletoappservices	Application Type Web Application	No. of Database Not Scanned	Application Components 2	Code Lines 238547	Application Platform .Net	Scanned Date 01-29-2019
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APPLICATION

Recommendations

Recommended Application Platform : Azure App Service enables you to build and host web applications in the programming language of your choice without managing infrastructure. It offers auto-scaling and high availability, supports both Windows and Linux, and enables automated deployments from GitHub, Visual Studio Team Services, or any Git repo. [More Info...](#)

Why : This application is a good choice to move to Azure app services, as it has no blockers & has additional features without any cost.

Other Option : Azure Container Service and Virtual Machine.

Recommendations Result

App Service	8
Virtual Machine	6
Containers	8

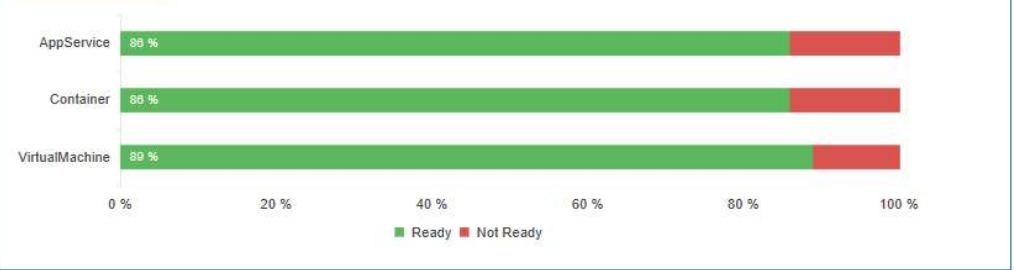
Azure Infrastructure Cost

Azure App Service	DS2 (US\$ 146.00)
Virtual Machine	DS2 v2 (US\$ 183.96)
Azure Container	DS2 v2 (US\$ 213.16)

Migration Effort



Readiness Status



CLOUDPILOT PROVIDED LINE-OF-CODE RECOMMENDATION DETAILS

1 Recommended code changes and sample replacement code

2 Estimated remediation effort

3 Exact code block, line of code and file path of code that need to be changed

Data Point

Encryption

Category

Security

Reason for Change

Encryption Algorithm

Recommendation

Use Azure blob storage to keep application data secure and encrypted. Azure blob storage data is already encrypted using Microsoft managed keys. If application uses encryption keys to encrypt data, use Azure Key Vault to protect the keys. Azure Key Vault helps safeguard cryptographic keys and secrets used by cloud applications and services. By using Azure Key Vault, users can encrypt keys and secrets by using keys that are protected by hardware security modules. Your application is using Encryption Algorithms so use Silver Spring SDK for this. Here are the steps to configure Silver Spring SDK:

- Configure silver spring with storage account.
- Deployment of silver spring SDK.
- Configure visual studio 2013 with Nuget.

Encrypt for Azure WebApps

This all information post is a quick walk-through and will show how to use lets encrypt certificates with Azure WebApps. As prerequisites I assume that the following things are done:

- App Service and WebApp is already up and running.
- App Service is at least B1 (pricing tier Basic 1).
- A custom domain is already configured.

Sample Code

```
public static string EncryptData(string Message)
{
    byte[] Results;
    System.Text.UTF8Encoding UTF8 = new System.Text.UTF8Encoding();
    MD5CryptoServiceProvider HashProvider = new MD5CryptoServiceProvider();
```

Estimated Efforts

4 Hours Size : Small

Impact

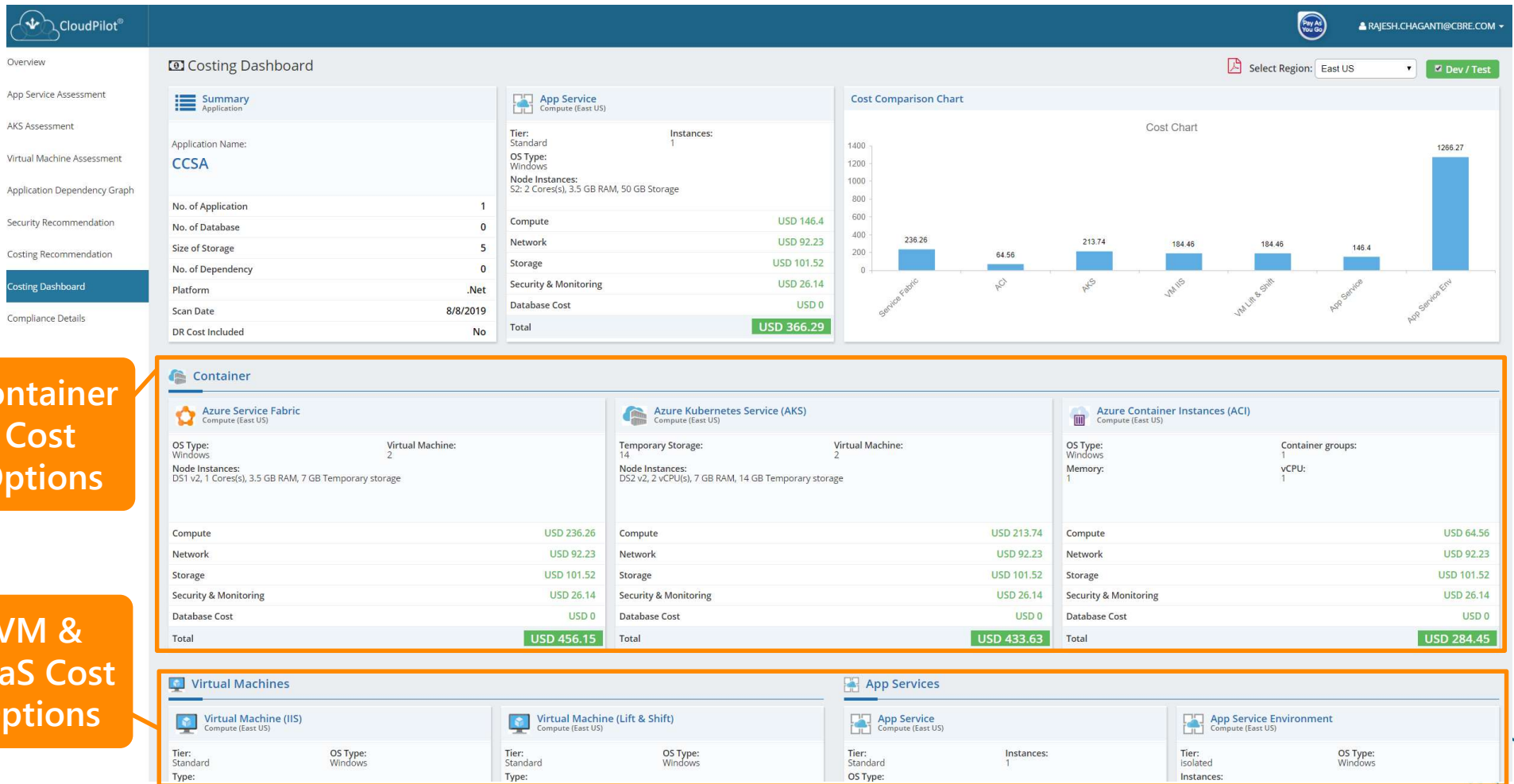
Optional

Help URL N/A

Impacted Areas

Code block	Line no.	File path
public static string ToMD5Hash(string filepath)	32	C:\TowerApp\India Residential\ResiPortal_IN\Web-root\ResiPortal_IN_BAL\Utilities\Utilities.cs
using (System.Security.Cryptography.MD5CryptoServiceProvider md5 = new System.Security.Cryptography.MD5CryptoServiceProvider())	38	C:\TowerApp\India Residential\ResiPortal_IN\Web-root\ResiPortal_IN_BAL\Utilities\Utilities.cs
using (Aes encryptor = Aes.Create())	174	C:\TowerApp\India Residential\ResiPortal_IN\Web-root\ResiPortal_IN_BAL\Utilities\Utilities.cs

Detailed Cost Dashboard: App Modernization



1
Container Cost Options

2
VM & PaaS Cost Options

Database Assessment Overview

Database Migration Recommendation

Database Migration

SQL Database is a general-purpose relational database service that supports structures such as relational data, options such as columnstore indexes for extreme analytic analysis and reporting, and in-memory OLTP for extreme base seamlessly and abstracts away all management of the underlying infrastructure.

Why : - Highly Scalable without downtime. Enable Failover clustering in minutes. Supports in built auditing , logs

Other Option : SQL Service running on IaaS Virtual Machine.

3
Drill Down to detailed Migration Reports for each database

Azure Infrastructure Cost : Database

Azure SQL DB	Standard S3 (US\$ 147.18)
SQL Service running on IaaS	Standard DS2 v2 (US\$ 1,278.96)
Managed SQL Instance	Gen4 8 vCore (US\$ 1,472.75)

Database Assessment

Database Name	Scan Date	Azure SQL	SQL On VM	SQL Managed Instance
CivicWeb 12	02-07-2019	View	View	View

Migration Recommendation



1
Count of changes for different migration options: SQL Azure, SQL MI, & SQL VM

Migration Efforts



2
Migration effort required for different migration scenarios

Database Assessment Overview

Database Migration Recommendation

Database Migration

SQL Database is a general-purpose relational database service that supports structures such as relational data, JSON, spatial, and XML. It delivers dynamically scalable performance and provides options such as columnstore indexes for extreme analytic analysis and reporting, and in-memory OLTP for extreme transactional processing. Microsoft handles all patching and updating of the SQL code base seamlessly and abstracts away all management of the underlying infrastructure.

Why : - Highly Scalable without downtime. Enable Failover clustering in minutes. Supports in built auditing , logging , query performance optimization and elastic query in a single connection.

Other Option : SQL Service running on IaaS Virtual Machine.

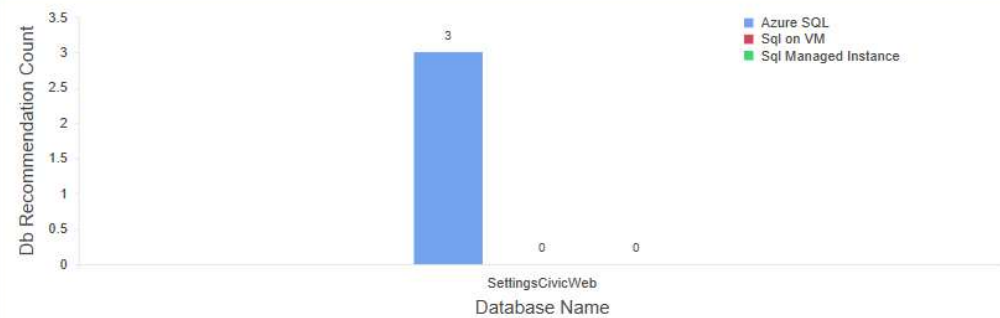
Azure Infrastructure Cost : Database

Azure SQL DB	Standard S3 (US\$ 147.18)
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Managed SQL Instance	Gen4 8 vCore (US\$ 1,472.75)

Database Assessment

Database Name	Scan Date	Azure SQL	SQL On VM	SQL Managed Instance
SettingsCivicWeb	02-07-2019	View	View	View

Migration Recommendation



Migration Efforts



CLOUDPILOT PROVIDES DETAILED RECOMMENDATIONS FOR DATABASE MIGRATION

CloudPilot® Play As You Go Region : East US RAJESH.CHAGANTI@CBRE.COM

Overview

Azure SQL Assessment

SQL Virtual Machine Assessment

SQL Managed Instance Assessment

CCSA_AU_Transfer Database

Total Recommendations: **8**

Impacted Objects: **69**

Recommendation by Category

- BehaviorChange: 1
- FeatureParity: 2
- MigrationBlocker: 5

Recommendation by Size Estimate

Category	Estimated Efforts
Small	2 Days 2 Hours
Medium	8 Days 4 Hours
Large	0

MigrationBlocker

Database users mapped with Windows authentication (integrated security) not supported in Azure SQL Database

Cross database queries using three- or four-part names not supported in Azure SQL Database

Unresolved references found

Objects found containing references to unresolved objects, which are not supported in Azure SQL Database

References found to system stored procedures that are not available in Azure SQL Database.

FeatureParity

Cross-database references not supported in Azure SQL Database

MigrationBlocker - Database users mapped with Windows authentication (integrated security) not supported in Azure SQL Database

Issue details

Impact
Azure SQL Database supports two types of authentication: SQL Authentication, which uses a username and password. Azure Active Directory Authentication, which uses identities managed by Azure Active Directory and is supported for managed and integrated domains.

Recommendation
Windows authentication (integrated security) is not supported in Azure SQL Database. Database users mapped to Windows logins not supported. Remove the reported unsupported users before migration and start using either SQL Authentication or Azure Active Directory Authentication after migrating to Azure SQL Database. Logins mapped to either certificate or asymmetric key are also not supported.

[Securing your SQL Database \(https://go.microsoft.com/fwlink/?linkid=838293\)](https://go.microsoft.com/fwlink/?linkid=838293)

Action
Mandatory

Impacted Objects (5)

Impacted Objects	Impacted Type	Estimated Efforts	Estimated Size
API\CBRE.CCSA.DEV.Admin_AU	Login	1 Hour	Small
API\CBRE.CCSA.DEV.ReadOnly	Login	1 Hour	Small
API\CBRE.CCSA.DEV.System	Login	1 Hour	Small
AU\SoftwareDev	Login	1 Hour	Small

Object Details

Name : API\CBRE.CCSA.DEV.Admin_AU
Type : Login
Impact Details : The element Login: [API\CBRE.CCSA.DEV.Admin_AU] has property IsMappedToWindowsLogin set to a value that is not supported in Microsoft Azure SQL Database v12.

Name : API\CBRE.CCSA.DEV.ReadOnly
Type : Login
Impact Details : The element Login: [API\CBRE.CCSA.DEV.ReadOnly] has property IsMappedToWindowsLogin

1 Required changes

2 Detailed Recommendations

3 Objects to be changed

Database Detailed Cost Comparison

- Overview
- Azure SQL
- SQL Running on VM
- SQL Managed Instance
- Security Recommendation
- Costing Dashboard**

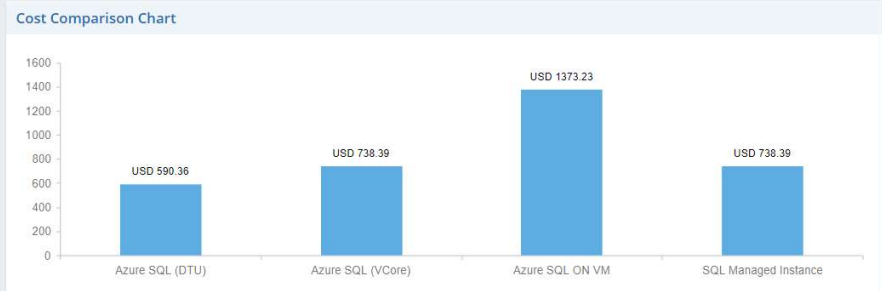
Costing Dashboard

Select Region: East US Dev / Test

Database Summary

Database Name:	RECDAU
Project Name	APAC_REC'D_DB
No. of Database	1
Database Type	MSSQL
Assessment Date	08/02/2019
Assessment Status	Completed
Migration Status	Pending
Source Platform	On-Premise

Database Comparison Cost



1 Database Cost Options

MS SQL Database

Azure SQL (DTU) Compute (East US)		Azure SQL (VCore) Compute (East US)		Azure SQL On VM Compute (East US)		SQL Managed Instance Compute (East US)	
Tier: Standard		Tier: General Purpose		Tier: Standard		Tier: General Purpose	
Performance Level: S6: 400 DTUs- 250 GB included storage per DB- \$0.8065/hour		Generation: Gen 4		Node Instances: D4 v3: 4 vCPU(s) 16 GB RAM 100 GB Temporary storage \$1.876/hour		Generation: Gen 5	
Purchase Model: DTU		Instance: 4 vCore		OS Type: Windows	No. of Database: 1	Instance: 4 vCore	
Type: Single Database	No. of Database: 1	Type: Single Database	No. of Database: 1	Type: SQL Server	License: SQL Enterprise	No. of Database: 1	
Compute	USD 590.36	Compute	USD 738.39	Compute	USD 1373.23	Compute	USD 738.39
Network	USD 0	Network	USD 0	Network	USD 203.38	Network	USD 0
Storage	USD 0	Storage	USD 3.68	Storage	USD 0	Storage	USD 0
Security & Monitoring	USD 26.14	Security & Monitoring	USD 26.14	Security & Monitoring	USD 26.14	Security & Monitoring	USD 26.14
Total	USD 616.5	Total	USD 768.21	Total	USD 1602.75	Total	USD 764.53

Summary

- 3 Apps, 1,600+ DBs and 662,837 Lines of code – would have taken 198 developer days to identify all the code changes to modernize to PaaS
- CloudPilot automated the App & DB analysis
- Contoso ISV is currently migrating and modernizing their APAC business app & DB portfolio to Azure PaaS using CloudPilot assessment as guide