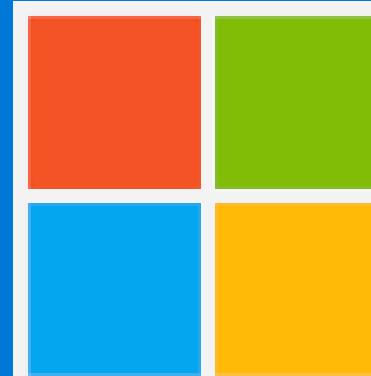


Sitecore on Azure Web Apps, *and complementary Azure PaaS services,* where to start?

Mathieu Benoit

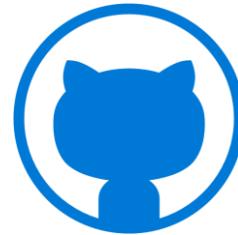
SUGM – 4/12/2017



Speaker as Code

```
{
```

```
  "firstName": "Mathieu",
  "lastName": "Benoit",
  "city": "Quebec",
  "country": "Canada",
  "company": "Microsoft",
  "role": "Cloud Solution Architect",
  "gitHub": "mathieu-benoit",
  "blog": "aka.ms/mabenoit",
  "misc": [
    "software development",
    "cloud + web + mobile",
    "agile & devops enthusiast",
    "continuous learning",
    "Certification: Website .NET Developer for Sitecore XP 8.0"
]
```



[GitHub account](#)



[Personal blog](#)

```
}
```

Agenda

Sitecore + Azure

Microsoft Azure

Azure PaaS

App Service

ARM Templates

Other services, let's be creative! ;)

Conclusion, next steps and references

Azure Web App

Azure SQL Database

Azure Search

Azure Application Insights

Azure Redis Cache

Sitecore + Microsoft Azure

Sitecore and Microsoft confirmed their partnership – July 2016

«Microsoft is a long-term strategic collaborator with Sitecore as we jointly serve several hundred customers worldwide. This expanded partnership will help us speed the delivery of our cloud computing services to market, building on our leadership in web content management and the Sitecore® Experience Platform. »

- Michael Seifert, CEO, Sitecore.

« Microsoft is proud to expand our alliance with Sitecore in an effort to bring more compelling digital experiences to our joint customers. By combining the power, scale, and rich platform service offerings of Azure with Sitecore's customers, together we will drive digital transformation for our customers and help them achieve more. »

- Scott Guthrie, EVP, Cloud and Enterprise Group, Microsoft.

Sitecore Azure Resources – Core – Dec 2016



Azure Web Apps

Sitecore uses separate Web Apps to host the Content Management, Content Delivery, Reporting, and Processing web site roles. Each Web App is placed in its own App Service Plan to enable it to scale separately.



Azure Application Insights

Sitecore uses Application Insights for all of its Health Monitoring needs. Application Insights can be used to search for all Sitecore logs, performance counters, custom telemetry, and dependant requests.



Azure Search

Sitecore uses Azure Search as its default search engine. Azure Search is a fully managed search-as-a-service that offers scalable full-text search.



Azure SQL Database

Sitecore uses Azure SQL to store all of its content and analytics databases. Databases can be split across management and delivery database servers.



Azure Redis Cache

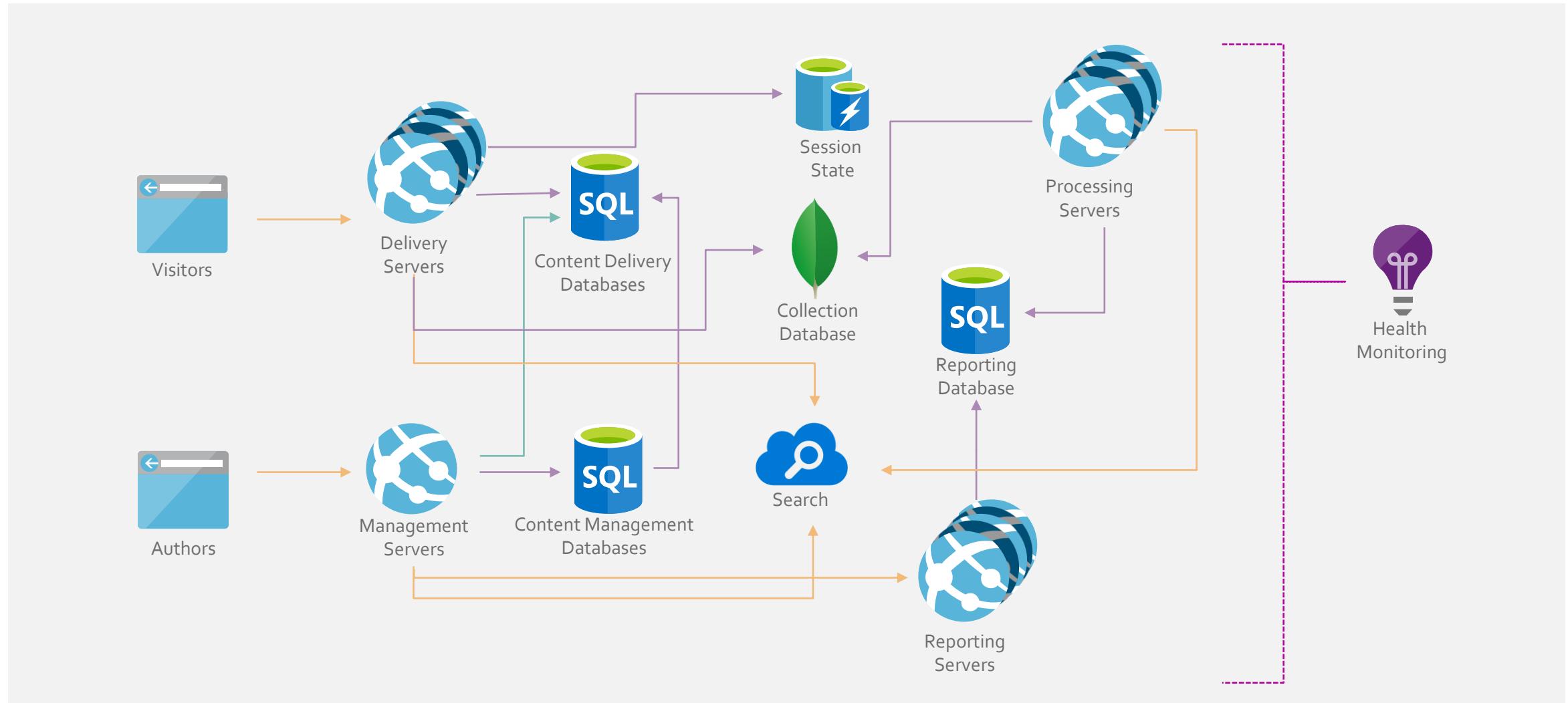
Sitecore uses Azure Redis Cache as its default session state backend. The session state component stores information from active visitors to be used by the content delivery and personalization process.



MongoDB

The collection database (MongoDB) is the primary storage for all analytics information and the registry of contacts and engagement automation states. In Azure it is recommended to use a Virtual Machine to host MongoDB or use a service such as mLab.

Sitecore PaaS Topology Example



Single Web App
Development Purposes



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



1 Plan
1 Web App



(Optional)
1 Plan
1 Web App



Content Delivery

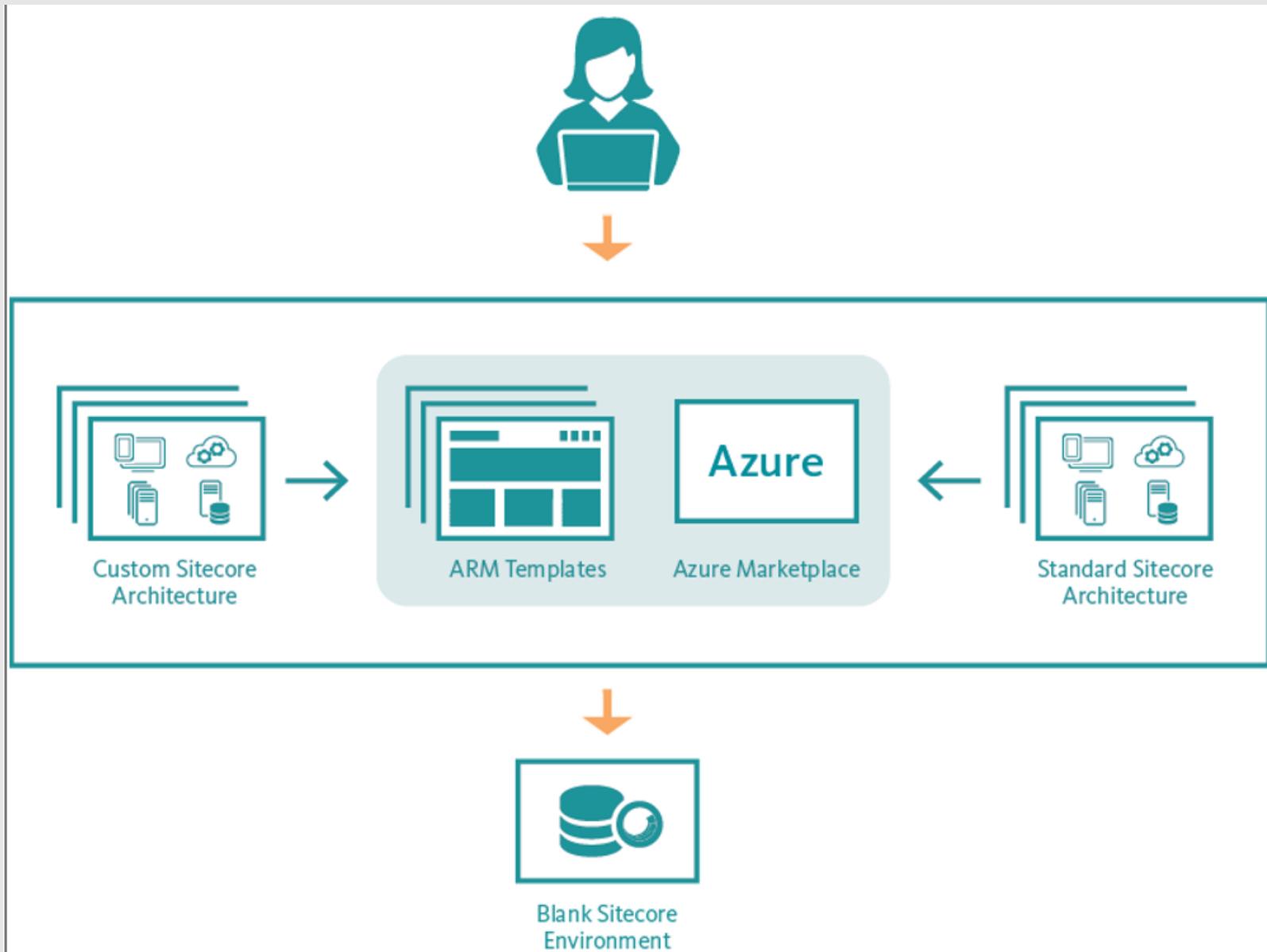
Content Management

Processing

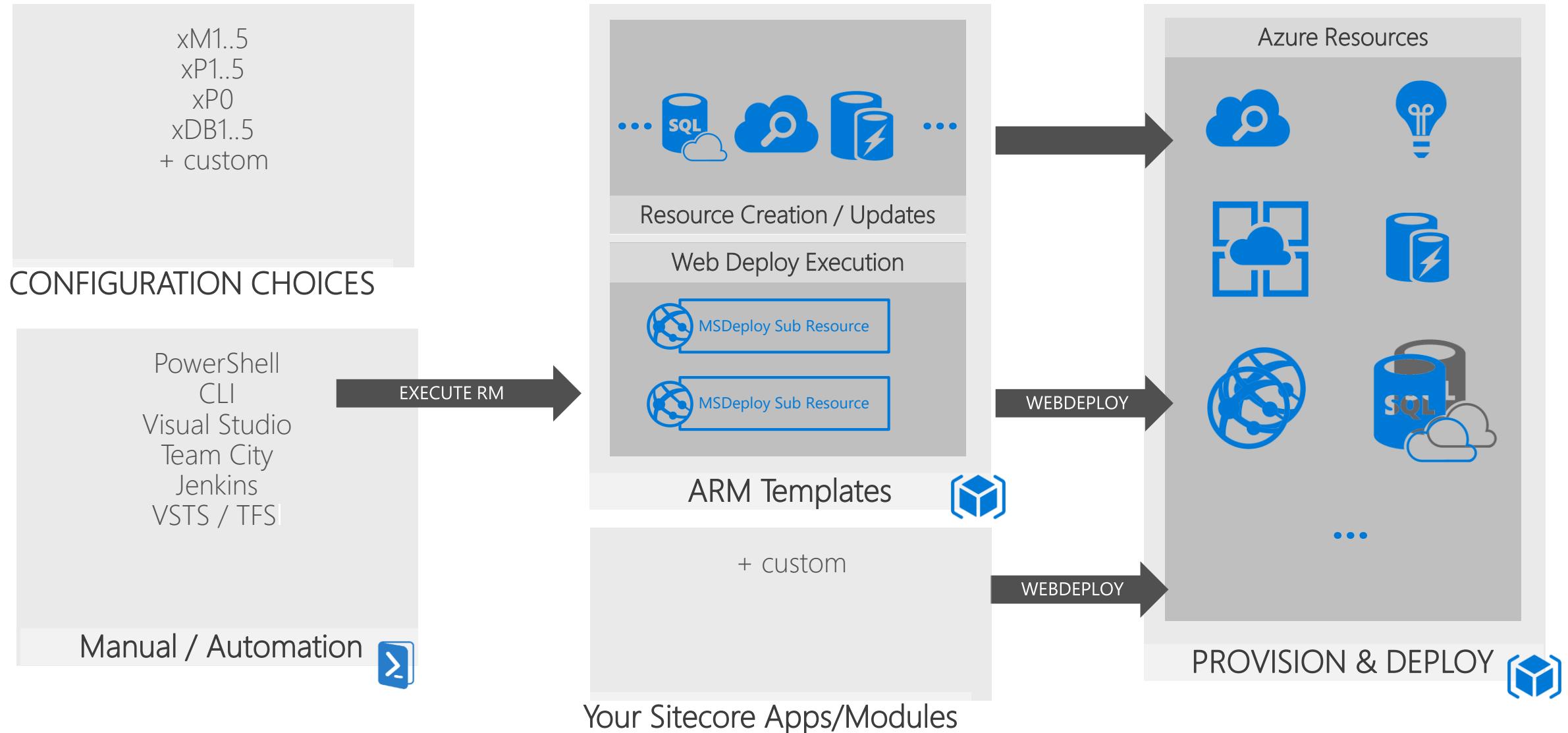
Reporting

Publishing

Sitecore Provisionning on Azure



Deployment with PowerShell, ARM and Packages



Sitecore XP on Microsoft Azure Compatibility

Component or Module Name	Sitecore XP 8.2 u1+
Experience Platform (xP)	✓
Experience Database (xDB)	✓
Experience Editor	✓
Campaign Creator	✓
Content Testing	✓
Experience Analytics	✓
Device Detection	✓
Path Analyzer	✓
Federated Experience Manager (FXM)	✓
Sitecore Social Connected	✓
List Manager	✓
Sitecore Experience Accelerator 1.2+	✓
Data Exchange Framework 1.2+	✓
Dynamics CRM Connect 1.2+	✓

Component or Module Name	Sitecore XP 8.2 u1+
Active Directory	✗
Print Experience Manager (PXM)	✗
Dynamics CRM Campaign Integration	✗
Email Experience Manager (EXM)	✗
SharePoint Connect	✗
Sitecore Media Framework	✗
Web Forms for Marketers (WFFM)	✗
Sitecore Provider for Data Exchange Framework	✗
Dynamics CRM Provider for Data Exchange Framework	✗

More information here: <https://kb.sitecore.net/articles/201557>

Microsoft Azure

Microsoft Azure

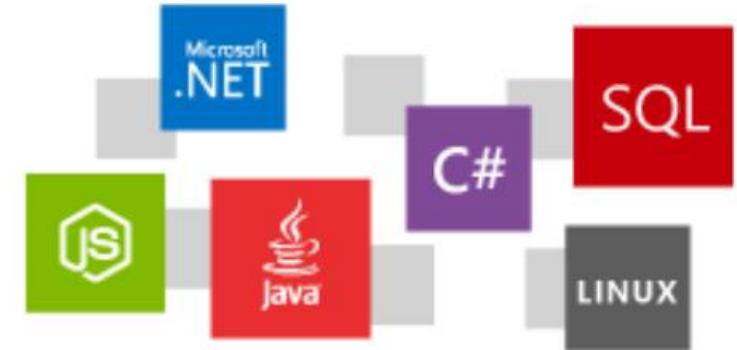
IaaS & PaaS



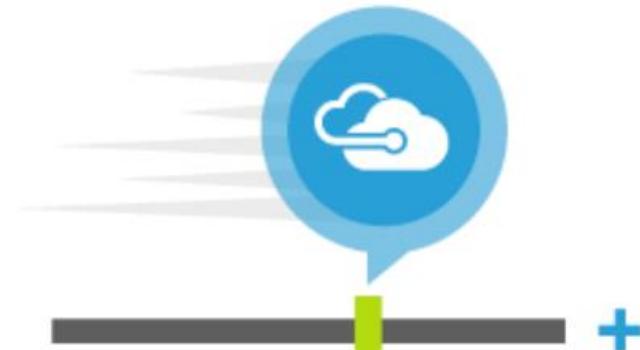
Hybrid configuration



Open & Flexible



Availability

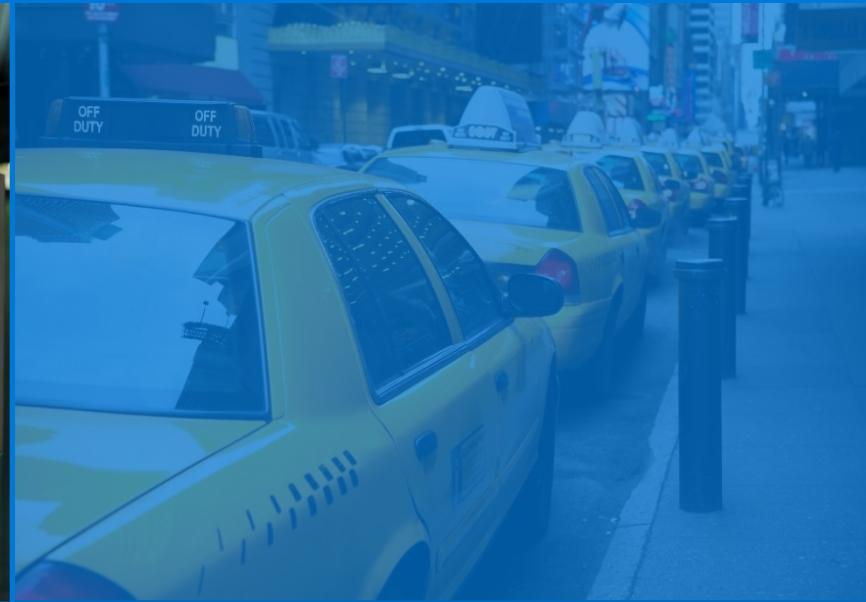


Scalability



All around the world

Let's say your app is a car...



IaaS

...you can own and operate
your own car

PaaS

Cyber to the code - create
innovative apps using an
application platform

SaaS

...you can take a taxi

Balance of responsibility

Balance of control and responsibility depends on the category of the service

MOVE-IN READY

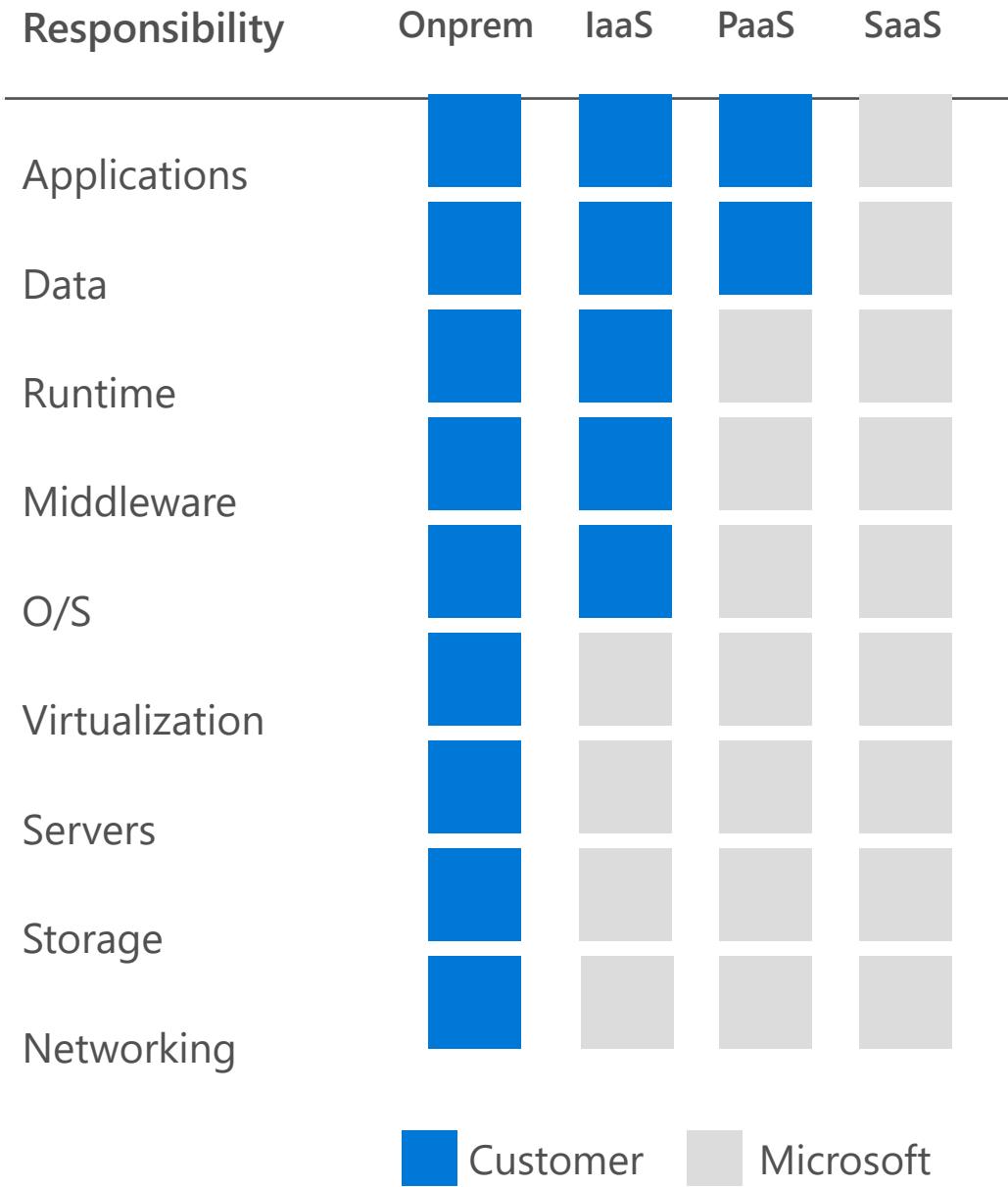
Use immediately with minimal configuration

SOME ASSEMBLY REQUIRED

Existing services are a starting point, with additional configuration for a custom fit

BUILD FROM THE GROUND UP

Building blocks, create your own solution or apps from scratch

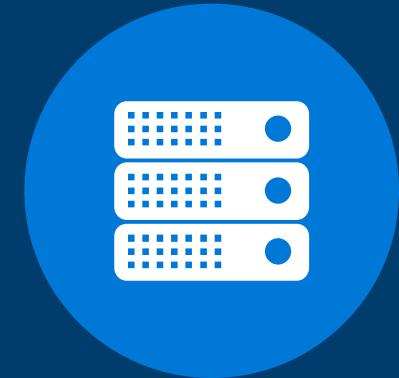


The changing world of app development

Mainframe
Monolithic
Client/Server
3 Tier
Component
RAD
Distributed
SOAP
SOA
Web
REST
Mobile
Microservices
Containers
Serverless



Physical
Machines



Virtual
Machines



Cloud
Infrastructure



Born in
the Cloud

Build on a developer platform (PaaS)



32

Azure regions

More than AWS and
Google combined



Security & Management

 Security Center

 Portal

 Azure Active Directory

 Azure AD B2C

 Multi-Factor Authentication

 Automation

 Scheduler

 Key Vault

 Store/ Marketplace

 VM Image Gallery & VM Depot

Media & CDN



Integration



Compute Services



Platform Services

Application Platform



Data



Intelligence



Analytics & IoT



Hybrid Cloud

 Azure AD Health Monitoring

 AD Privileged Identity Management

 Domain Services

 Backup

 Operational Analytics

 Import/Export

 Azure Site Recovery

 StorSimple

Infrastructure Services

Compute

 Virtual Machines

 Containers

Storage

 Blob  Queues  Files  Disks

Networking

 Virtual Network  Load Balancer  DNS  Express Route  Traffic Manager  VPN Gateway  App Gateway

Datacenter Infrastructure (32 Regions, 24 Online)

Security & Management

Security Center

Portal

Azure Active Directory

Azure AD B2C

Multi-Factor Authentication

Automation

Scheduler

Key Vault

Store/ Marketplace

VM Image Gallery & VM Depot

Media & CDN



Integration



Platform Services

Application Platform



Compute Services



Developer Services



Data



Intelligence



Analytics & IoT



Compute



Storage



Infrastructure Services

Networking



Datacenter Infrastructure (32 Regions, 24 Online)

Hybrid Cloud



Azure is an open cloud

DevOps



Management



Applications



App frameworks and tools



Databases and middleware

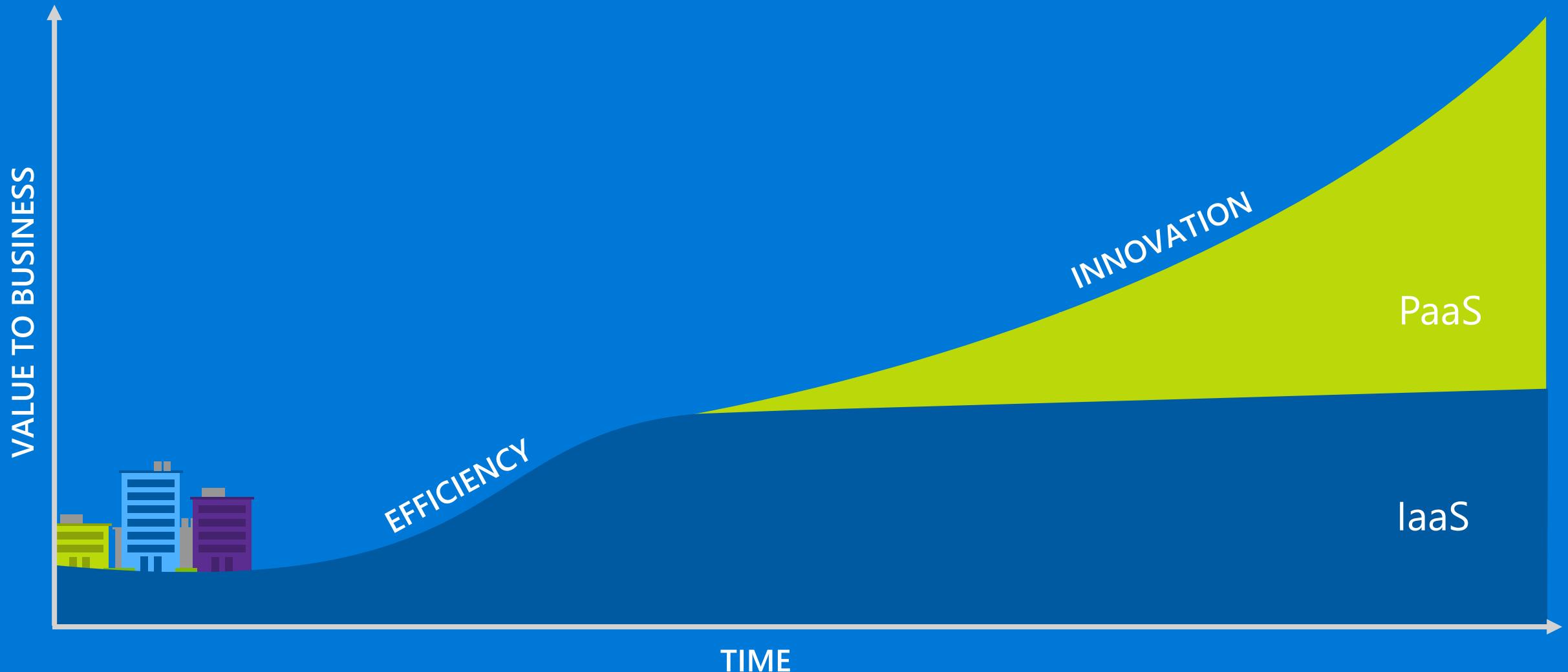


Infrastructure



Platform-as-a-Service (PaaS)

From infrastructure to innovation



Azure Application Platform

Build on a Developer Platform (PaaS)



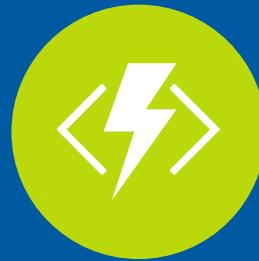
App Service

Web, mobile, API,
and logic apps



Service Fabric

Cloud native,
microservices based apps



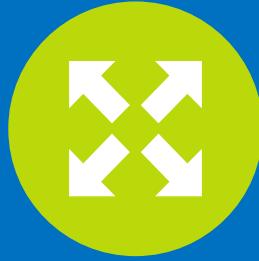
Functions

Serverless,
event driven functions



Cloud Services

Custom monolithic
3-tier stateless apps



Other PaaS

Cloud Foundry, OpenShift,
Apprenda, Jetlastic, etc.

Web and mobile

Microservices

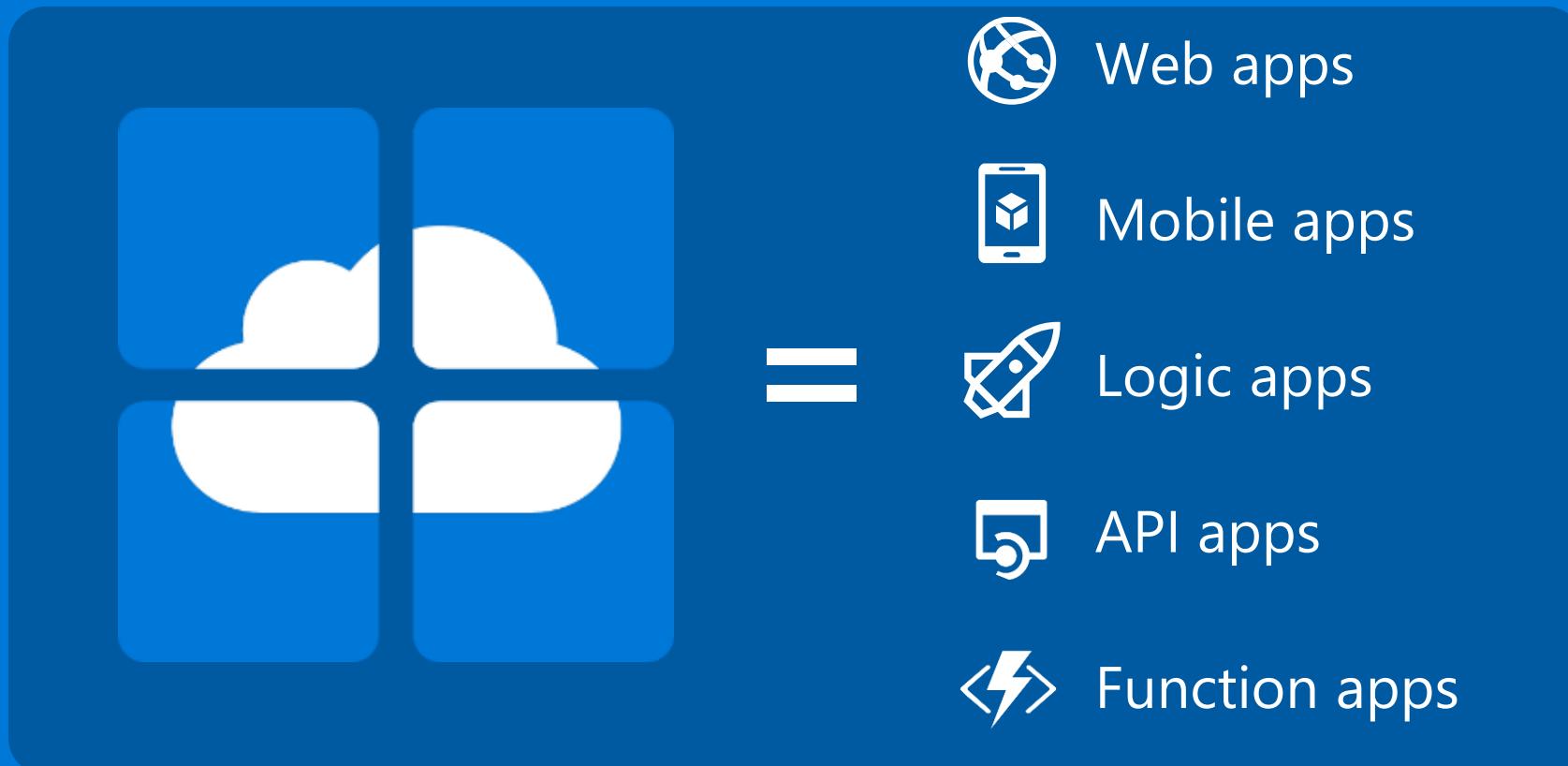
Serverless
Compute

Existing
Frameworks

Third-party
Frameworks

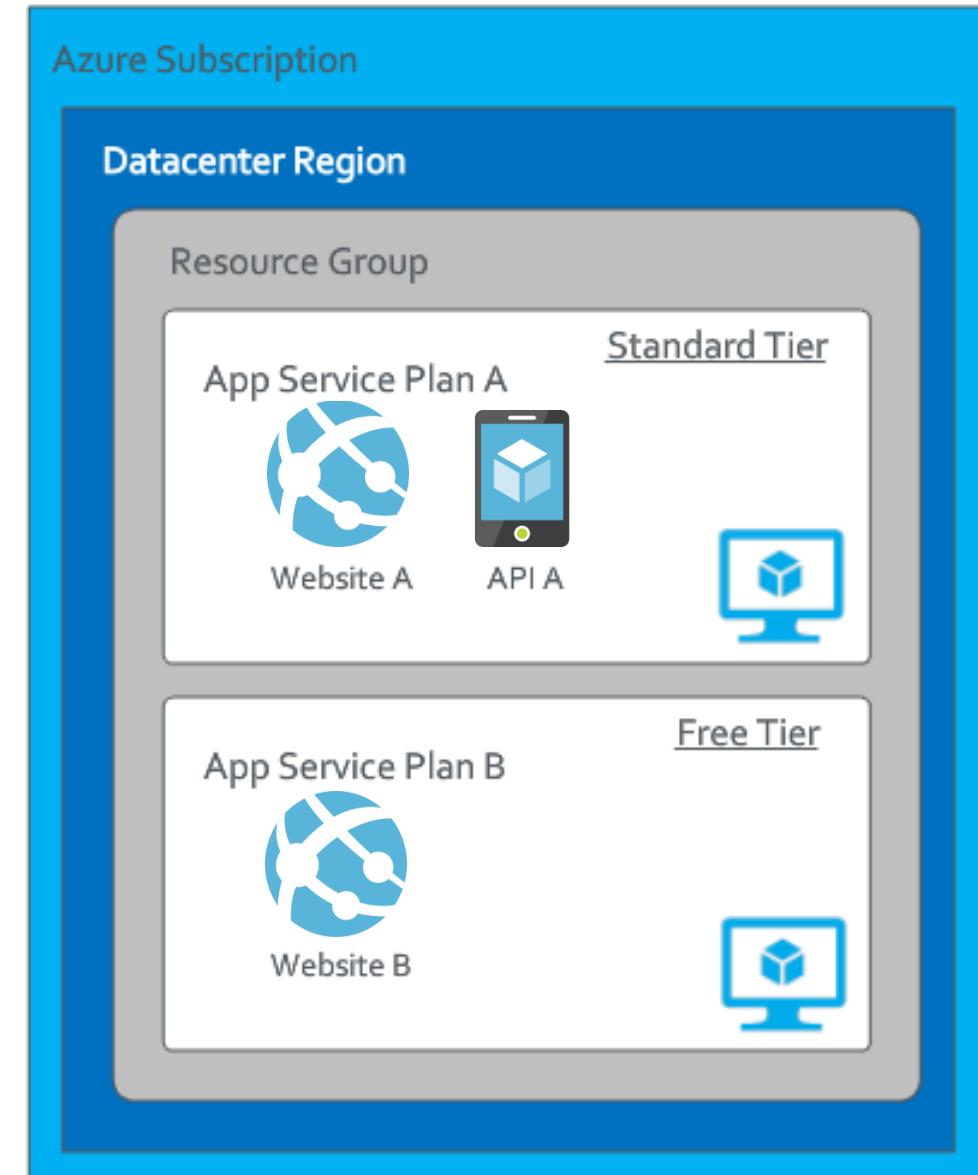
Azure App Service

Build and scale great web and mobile apps



App Service Plan

- Web apps need to be in the same subscription, resource group and region to share a app service plan
- A web app can only be associated with one app service plan
- All web apps that use the same app service plan will be placed on the same resource hardware
- You can have multiple app service plans in a single resource group to allow for different capacity needs



App Service Core Capabilities

Enterprise grade

Designed for secure mission-critical applications

- Premium Tier
- App Service Environments
- Hybrid Connections / VPN Support
- Scheduled Backup
- Azure Active Directory Integration
- Site Resiliency, HA, and DR
- Web Jobs
- Role Base Access Control
- Audit / Compliance
- Enterprise Migration
- Client Certs
- Redis Caching
- IP Restrictions/ SSL
- Web Sockets
- SQL, MySQL, DocDB, & Mongo

Fully managed

Optimized for Availability and Automatic scale

- Automated Deployment
- AutoScale
- Built-in Load Balancing
- WW Datacenter Coverage
- End Point Monitoring & Alerts
- DR Site Support
- WildCard Support
- Dedicated IP address
- HTTP Compression
- WebJobs
- Premium WordPress
- Sticky Sessions
- App Service Environment

Built for DevOps

Agility through Continuous Deployment

- Remote Debugging w/ Visual Studio
- Site Staging Slots
- Traffic Routing
- Continuous Integration/Deployment
- Git, Visual Studio Online and GitHub
- App & Site Diagnostics
- OS & Framework Patching
- Site Extensions Gallery
- .NET, PHP, Python, Node, Java
- Framework Installer
- Browser-based editing
- Auto-Healing
- Logging and Auditing
- Admin-Site
- Support Site Extension

Scaling Up vs. Scaling Out

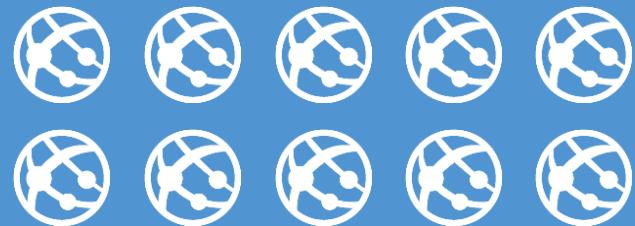
Scale Up



Vary the VM size

- 1 Core w/ 1.75 GB RAM
- 2 Cores w/ 3.5 GB RAM
- 4 Cores w/ 7 GB RAM

Scale Out



Vary the VM count

- Max 3* instances
- Max 10 instances
- Max 20/50** instances

Scale out/in

cd - Scale out (App Service plan)

App Service

Search (Ctrl+/)

SETTINGS

- Application settings
- Authentication / Authorization
- Backups
- Custom domains
- SSL certificates
- Networking
- Scale up (App Service plan)
- Scale out (App Service plan)
- Security scanning
- WebJobs
- Push
- MySQL In App (preview)

Save Discard

3

2.5

2

1.5

1

0.5

0

Feb 16 Feb 17 Feb 18

AVERAGE INSTANCES PREDICTED INSTANCES

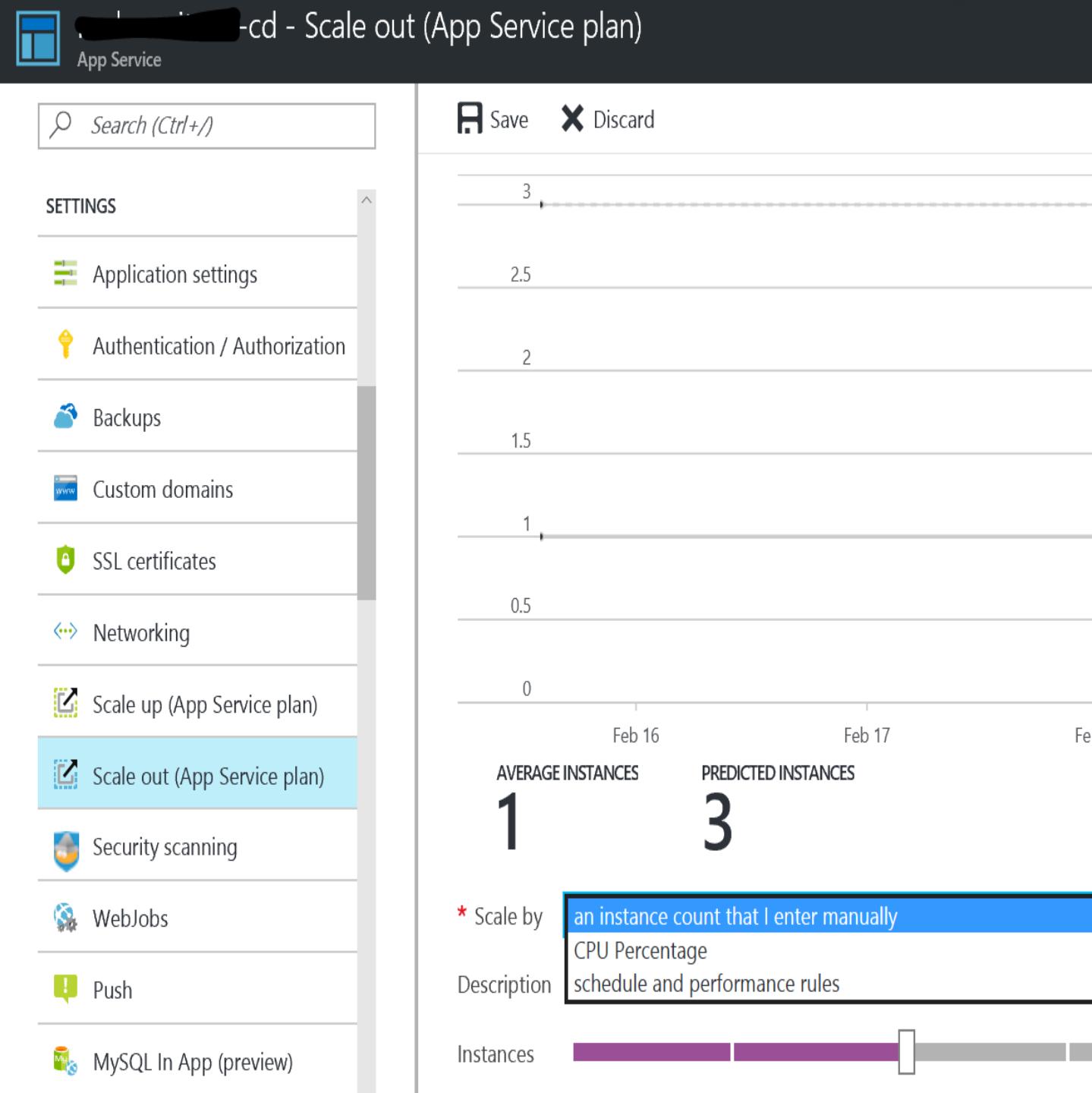
1 3

* Scale by an instance count that I enter manually

CPU Percentage

Description schedule and performance rules

Instances



Scale up/down

Choose your pricing tier
Browse the available plans and their features

P1 Premium	P2 Premium	P3 Premium
1 Core	2 Core	4 Core
1.75 GB RAM	3.5 GB RAM	7 GB RAM
BizTalk Services	BizTalk Services	BizTalk Services
250 GB Storage	250 GB Storage	250 GB Storage
Up to 20 instances * Subject to availability	Up to 20 instances * Subject to availability	Up to 20 instances * Subject to availability
20 slots Web app staging	20 slots Web app staging	20 slots Web app staging
50 times daily Backup	50 times daily Backup	50 times daily Backup
Traffic Manager Geo availability	Traffic Manager Geo availability	Traffic Manager Geo availability
271.39 CAD/MONTH (ESTIMATED)	542.78 CAD/MONTH (ESTIMATED)	1,085.56 CAD/MONTH (ESTIMATED)

S1 Standard	S2 Standard	S3 Standard
1 Core	2 Core	4 Core
1.75 GB RAM	3.5 GB RAM	7 GB RAM
50 GB Storage	50 GB Storage	50 GB Storage
Custom domains / SSL SNI Incl & IP SSL Support	Custom domains / SSL SNI Incl & IP SSL Support	Custom domains / SSL SNI Incl & IP SSL Support
Up to 10 instances Auto scale	Up to 10 instances Auto scale	Up to 10 instances Auto scale
Daily	Daily	Daily

Select

Search (Ctrl+ /)

- Authentication / Authorization
- Backups
- Custom domains
- SSL certificates
- Networking
- Scale up (App Service plan) **(Selected)**
- Scale out (App Service plan)
- Security scanning
- WebJobs
- Push
- MySQL In App (preview)
- Properties
- Locks
- Automation script

Deployment slots

qa - Deployment slots
Web App

Search (Ctrl+ /)

+ Add Slot Swap

NAME	STATUS	APP SERVICE PLAN
qa	Running	Standard
test-cd	Running	Standard
test-cd-dev	Running	Standard

Deployment slots

Deployment credentials

Deployment options

Continuous Delivery (Preview)

SETTINGS

Application settings

Authentication / Authorization

Backups

Custom domains

SSL certificates

Networking

Scale up (App Service plan)

Scale out (App Service plan)

Security scanning

Swap

Choose which slots to swap

Swap type

Swap

Swap with preview

Source

qa

Destination

production

Preview Changes >

0 warnings, 5 other messages

Testing in production

i-cd - Testing in production

App Service

Save Discard Add Slot

Search (Ctrl+ /)

Clone app

Console

Advanced Tools

App Service Editor (Preview)

Performance test

Resource explorer

PHP Debugging

Testing in production

Extensions

MOBILE

Easy tables

Easy APIs

Data connections

API

Static Routing

dev 20%

Choose deployment slot

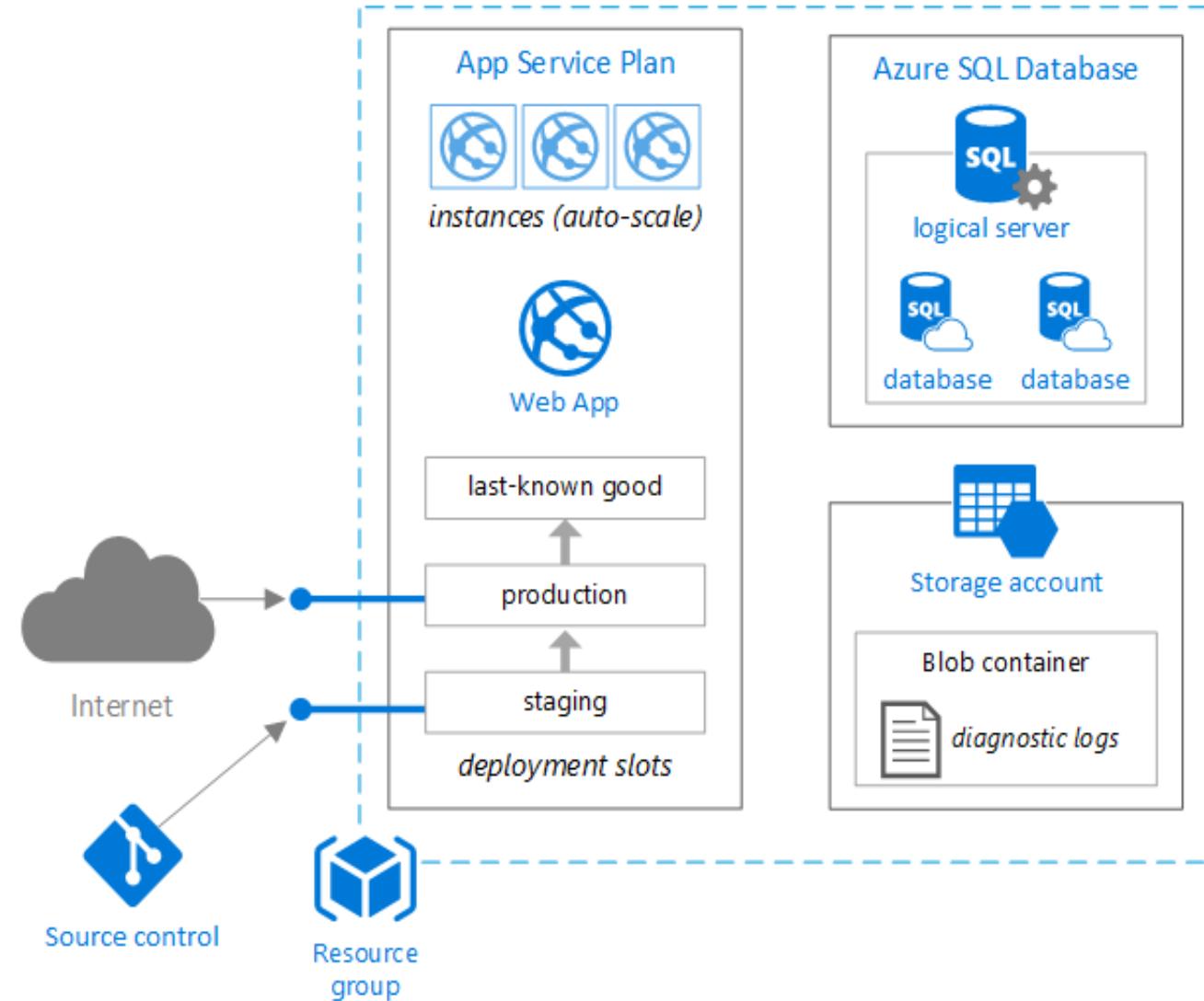
production 80%

TRAFFIC %

The screenshot shows the 'Testing in production' blade in the Azure App Service portal. At the top, there's a search bar and action buttons for Save, Discard, and Add Slot. Below the search bar is a sidebar with links like Clone app, Console, Advanced Tools, App Service Editor (Preview), Performance test, Resource explorer, PHP Debugging, and Testing in production (which is highlighted). The main area is titled 'Static Routing' and contains two entries: 'dev' with 20% traffic and 'production' with 80% traffic. A dropdown menu labeled 'Choose deployment slot' is open next to the dev entry. The bottom right corner shows a 'TRAFFIC %' button.

Slots and Deployment Recommendation

- Use primary App for production
- Use a slot for deployment
 - Only the slot is connected to SC
- Optional: create last-known-good slot
 - Code change → SC → Stage → Production
 - After swap older Prod → Stage → LKG



Application Settings

qa - Application settings
Web App

Search (Ctrl+ /)

Save Discard

Quickstart

Deployment credentials

Deployment slots

Deployment options

Continuous Delivery (Preview)

SETTINGS

Application settings

Authentication / Authorization

Backups

Custom domains

SSL certificates

Networking

Scale up (App Service plan)

Scale out (App Service plan)

Security scanning

Connection strings

The connection string values are hidden [Show connection string values](#)

Name	Value	SQL Database	Slot setting
core	< Hidden for Security >	SQL Database	<input type="checkbox"/>
web	< Hidden for Security >	SQL Database	<input type="checkbox"/>
cloud.search	< Hidden for Security >	Custom	<input type="checkbox"/>
appinsights.instrumentationkey	< Hidden for Security >	Custom	<input type="checkbox"/>
redis.sessions	< Hidden for Security >	Custom	<input type="checkbox"/>

Name Value SQL Database Slot setting

Default documents

index.html

hostingstart.html

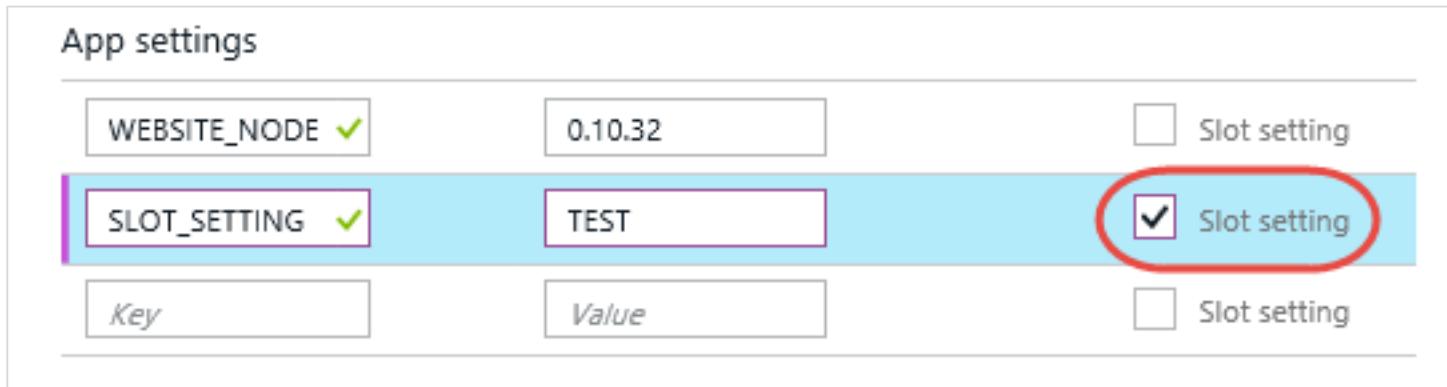
Handler mappings

Preventing Slot Swapping for specific settings

By selecting the slot setting check box, you convey that you want this particular setting to not swap

App settings

WEBSITE_NODE ✓	0.10.32	<input type="checkbox"/> Slot setting
SLOT_SETTING ✓	TEST	<input checked="" type="checkbox"/> Slot setting
Key	Value	<input type="checkbox"/> Slot setting



Alerts

████████████████████ - Alerts
App Service

Search (Ctrl+ /)

API

- API definition
- CORS

MONITORING

- Application Insights
- Alerts**
- Diagnostics logs
- Log stream
- Process explorer
- Metrics per instance (Apps)
- Metrics per Instance (App Ser...)
- Live HTTP traffic
- Application events
- FREB logs

Add an alert rule

25MB
20MB
15MB
10MB
5MB
0MB

11 AM 6 PM Feb 22 6 AM

* Condition: greater than

* Threshold: 1 bytes

* Period: Over the last 5 minutes

Email owners, contributors, and readers:

Additional administrator email(s): Add email addresses separated by semicolons

Webhook: HTTP or HTTPS endpoint to route alerts to

Console

qa - Console
Web App

Search (Ctrl+ /)

- App Service plan
- Quotas
- Change App Service plan

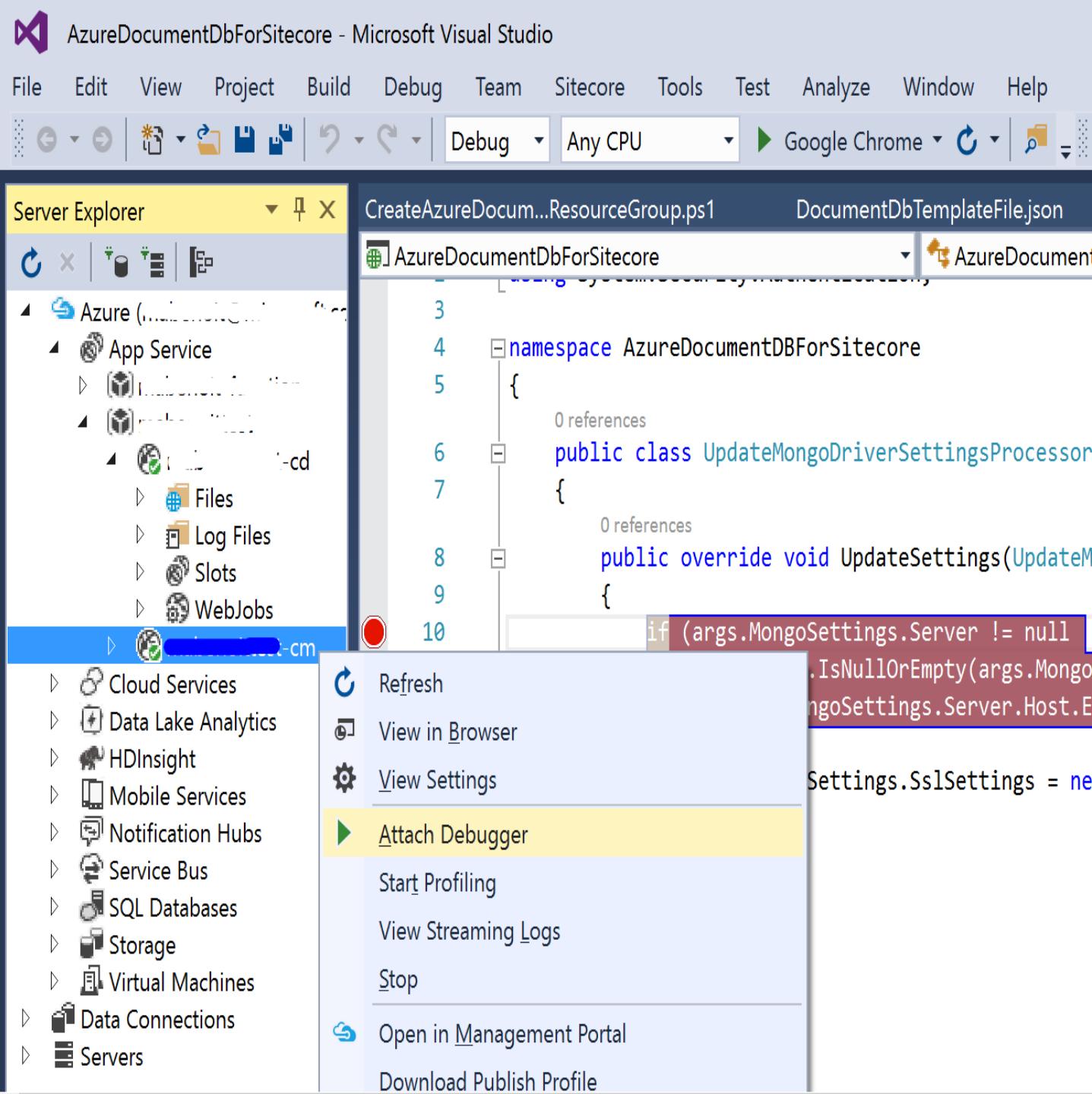
DEVELOPMENT TOOLS

- Clone app
- Console
- Advanced Tools
- App Service Editor (Preview)
- Performance test
- Resource explorer
- PHP Debugging
- Testing in production
- Extensions

02/20/2017 09:10 PM	<DIR>	.
02/20/2017 09:10 PM	<DIR>	..
12/21/2016 07:32 PM	6,452	ApplicationInsights.config
02/20/2017 09:07 PM	<DIR>	App_Browsers
02/20/2017 09:07 PM	<DIR>	App_Config
02/20/2017 09:12 PM	<DIR>	App_Data
02/20/2017 09:07 PM	<DIR>	Areas
02/20/2017 09:07 PM	<DIR>	bin
12/21/2016 07:29 PM	599	Default.aspx
12/21/2016 07:29 PM	1,293	default.css
12/21/2016 07:29 PM	1,308	default.htm.sitedown
12/21/2016 07:29 PM	336	default.js
12/21/2016 07:29 PM	67	Global.asax
02/20/2017 09:07 PM	<DIR>	layouts
02/20/2017 09:07 PM	<DIR>	sitecore
02/20/2017 09:10 PM	<DIR>	sitecore_modules
02/20/2017 09:10 PM	<DIR>	sitecore_files
02/20/2017 09:10 PM	<DIR>	temp
02/20/2017 09:10 PM	<DIR>	Views
12/21/2016 07:37 PM	22,832	Web.config
12/21/2016 07:29 PM	20,776	Web.config.Oracle
12/21/2016 07:29 PM	21,575	webedit.css
02/20/2017 09:10 PM	<DIR>	xsl

9 File(s) 75,238 bytes
14 Dir(s) 104,367,386,624 bytes free

Attach Debugger



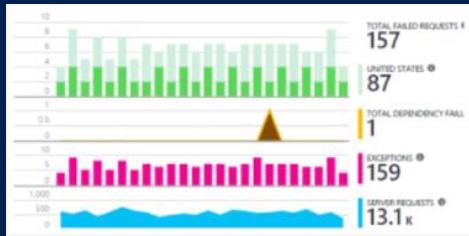


Application Insights

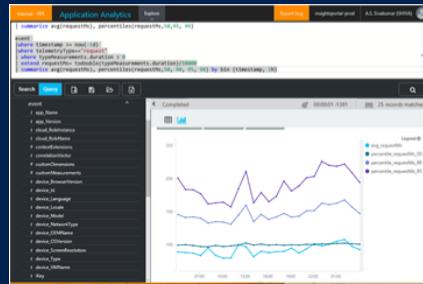
Application Insights

Detect, triage, and diagnose issues in your web apps and services

Exceptions and performance diagnostics



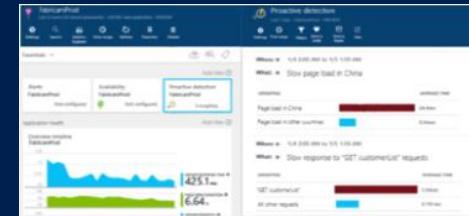
Interactive data analytics



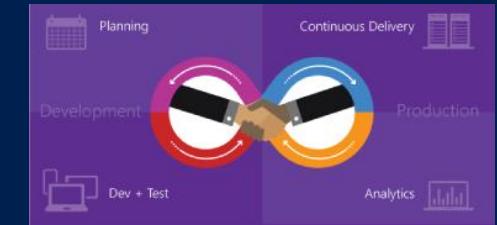
Azure Diagnostics



Proactive Detection



DevOps and Application Lifecycle Management



Outside-in monitoring

- URL pings and web tests from 16 global points of presence

Observed user behavior

- Real user monitoring for deeper diagnostic insights

Sources of Telemetry

Developer traces and events

- Whatever the developer would like to send to Application Insights

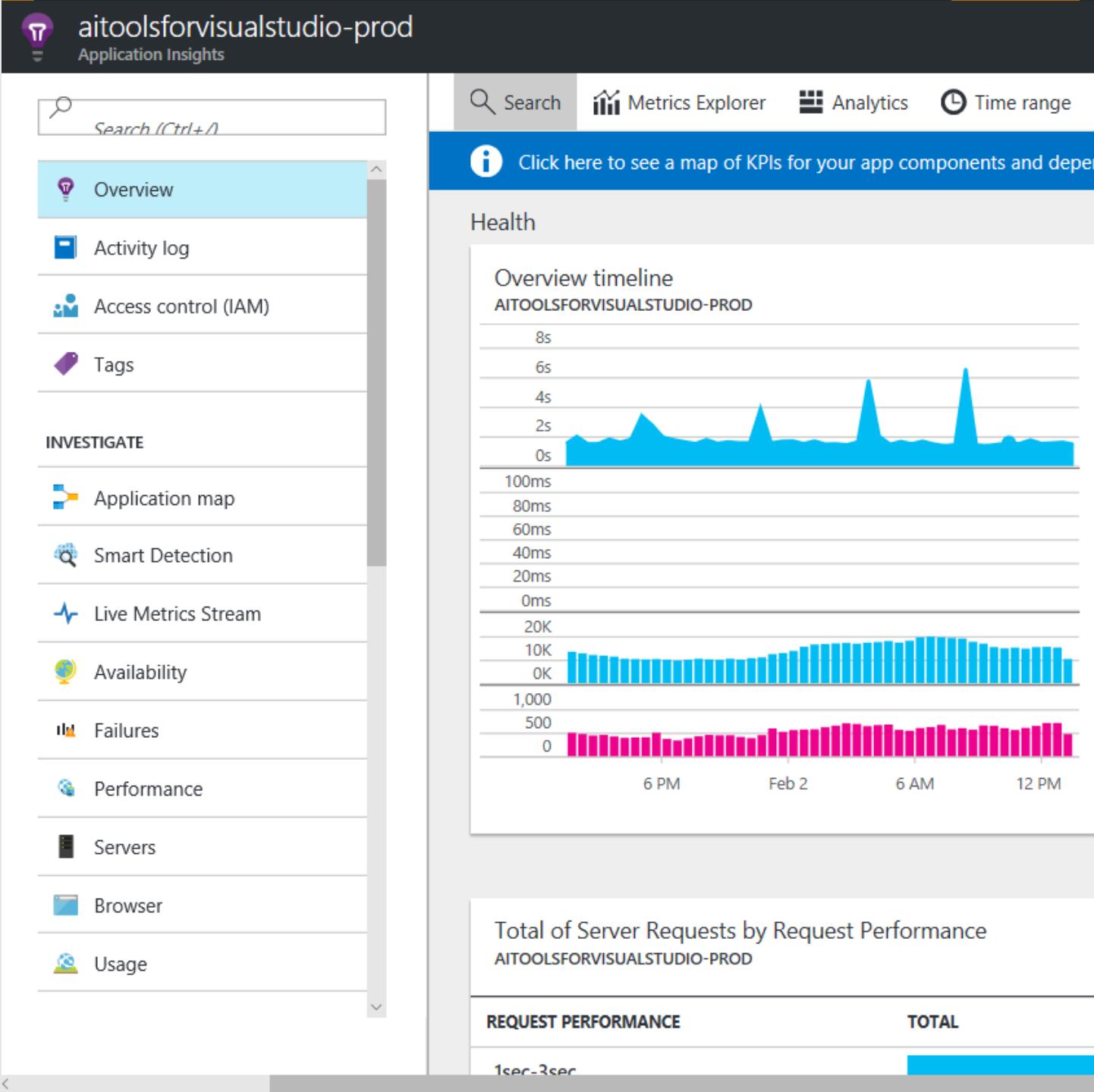
Observed application behavior

- No coding required – service dependencies, queries, response time, exceptions, logs, etc.

Infrastructure performance

- System performance counters

Intelligent Insights



Instant Analytics

Application Insights data collector stats Analytics

Home Page New Query 1* +

SCHEMA FILTER

Filter by Name or Type...

COLLAPSE ALL | EXPAND ALL

APPLICATION INSIGHTS ▲

- traces
- customEvents
- pageViews
- requests
- dependencies
- exceptions
- availabilityResults
- customMetrics
- performanceCounters
- browserTimings

OTHER DATA SOURCES ▲

+ Add new data source

metrics

```
| where timestamp >= ago(30d)
| where name == "OnlyAuto" or name == "Auto" or name == "AppsSending"
| extend name2 = iff(name == "Auto", "Auto", iff(name == "OnlyAuto", "Apps")))
| summarize max(value) by name2, bin(timestamp, 1d)
| order by name2 asc
```

customMetrics

```
| limit 10
```

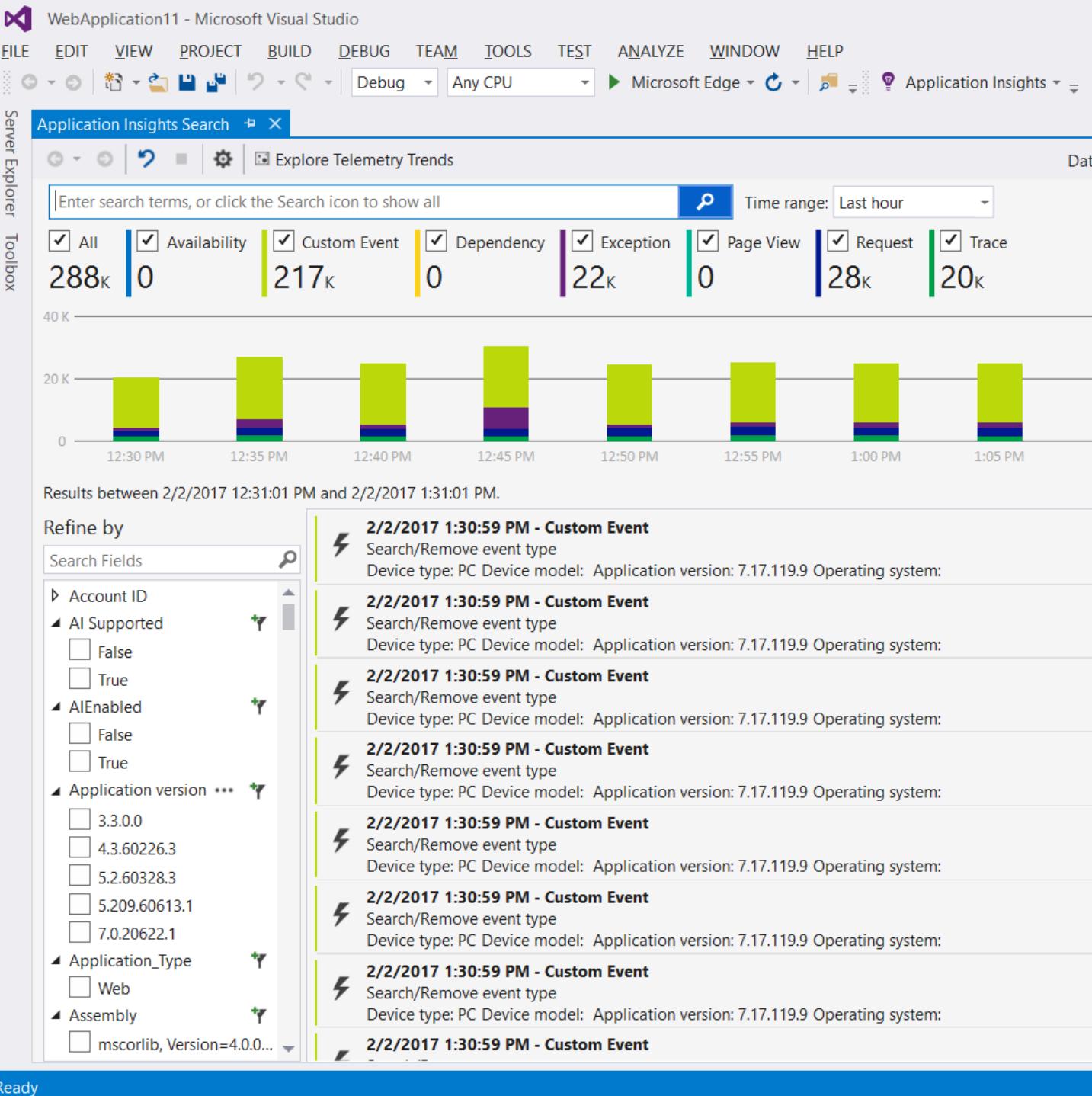
Completed. Showing results from the last 24 hours.

Drag a column header and drop it here to group by that column

	timestamp	name	value	valueCount	value
▼	2017-02-01T18:35:00Z	-ItemsDuration	4,749	8	4
▼	2017-02-01T18:35:00Z	-ItemsSuccessAll	8	8	8
▼	2017-02-01T18:35:00Z	-ItemsSuccess	8	8	8
▼	2017-02-01T18:35:00Z	-Billing	4	4	4
▼	2017-02-01T18:35:00Z	-ItemsDuration	62	4	6
▼	2017-02-01T18:35:00Z	-ItemsSuccessAll	4	4	4
▼	2017-02-01T18:35:00Z	-ItemsSuccess	4	4	4
▼	2017-02-01T18:35:00Z	-ItemsSuccess	1	1	1
▼	2017-02-01T18:35:00Z	-Billing	5	5	5
▼	2017-02-01T18:35:00Z	-ItemsDuration	78	4	7

Page 1 of 1

Integrations with DevOps Tools

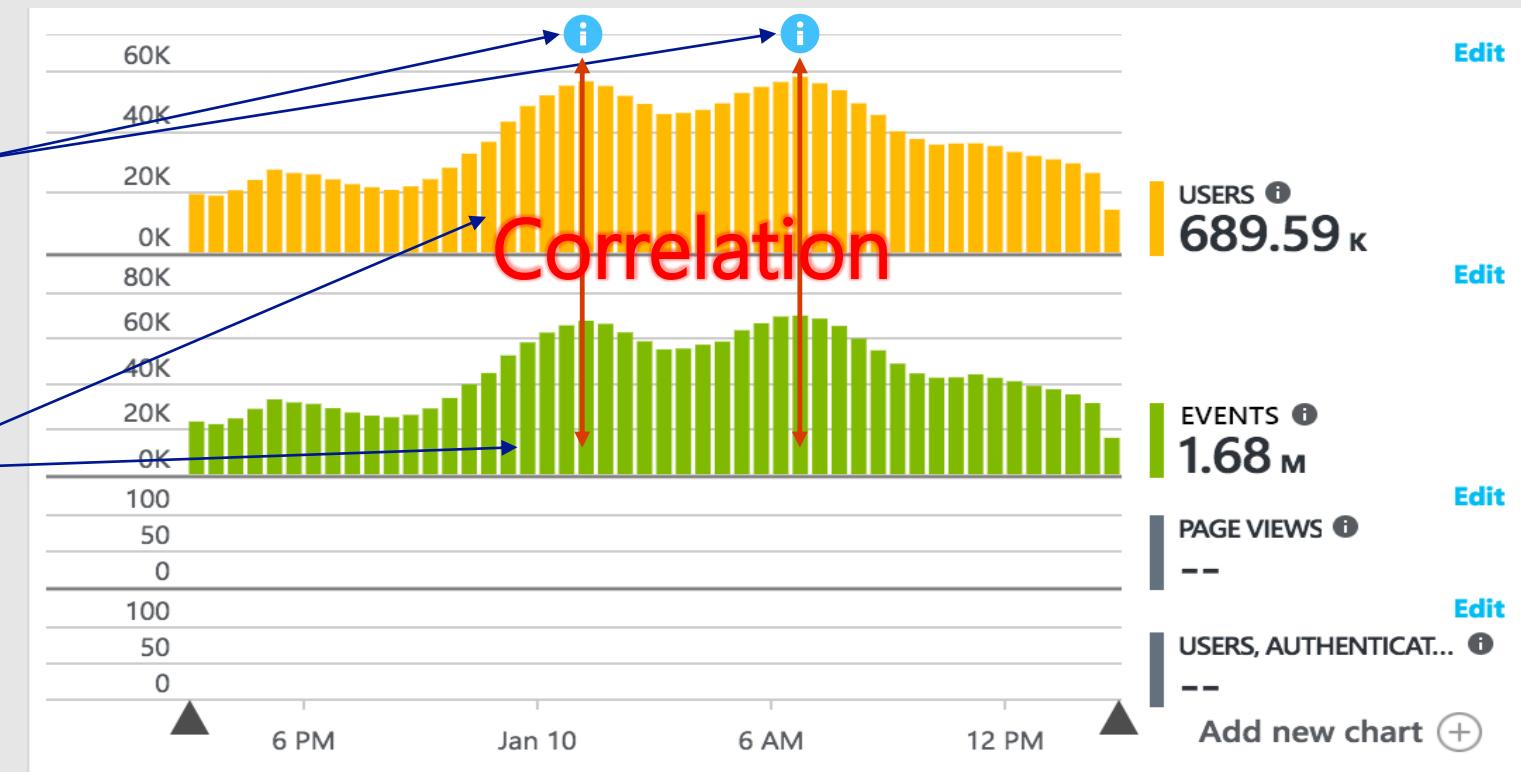


Annotations

Events

Stuff

Correlation





Azure SQL Database

Azure SQL Database

Fully managed database-as-a-service that lets you focus on your business



Database provisioning on-demand

Scalable and elastic performance for all workloads

99.99% availability, zero maintenance

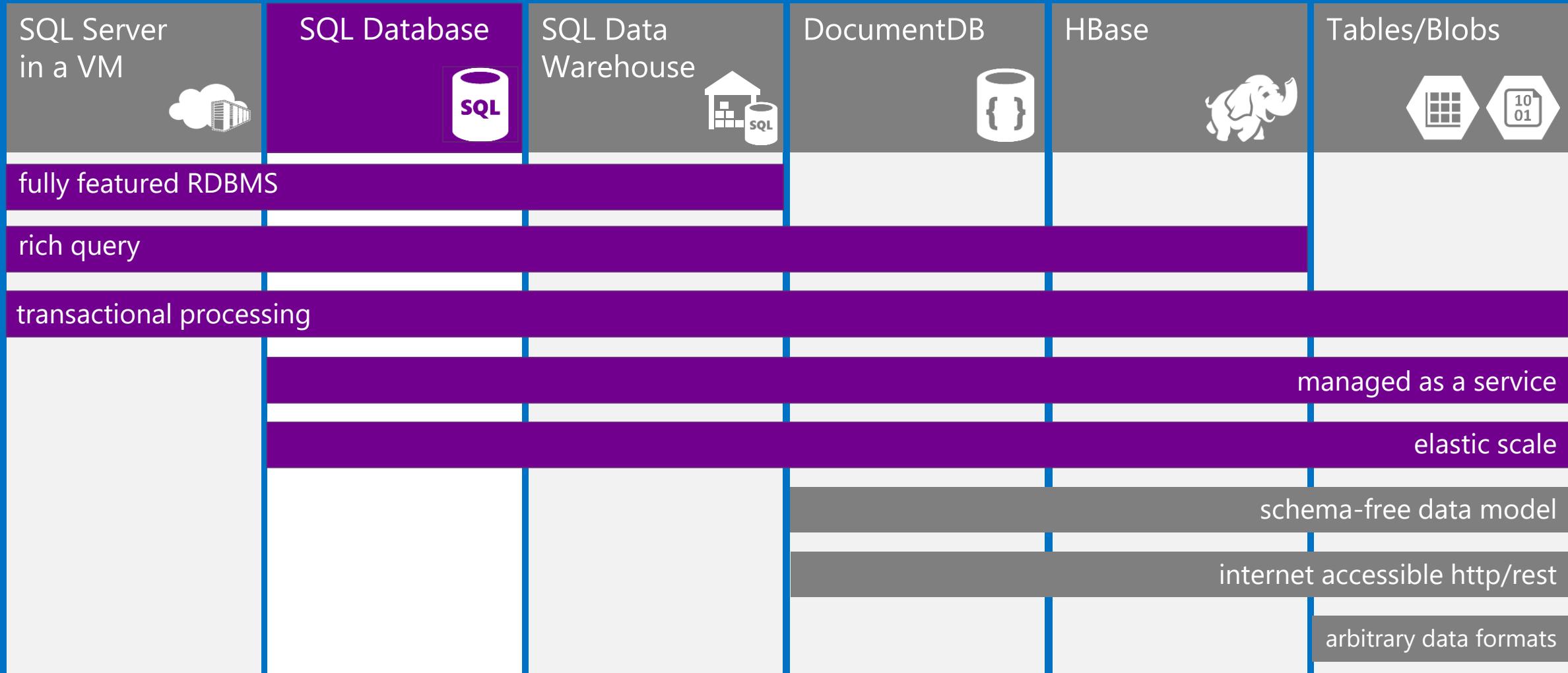
Intelligent: learns and adapts to optimize performance

Secure and compliant to protect sensitive data

Geo-replication and restore-from-backup for data protection

Compatible with SQL Server 2014, 2016

Where does SQL Database fit in Azure?

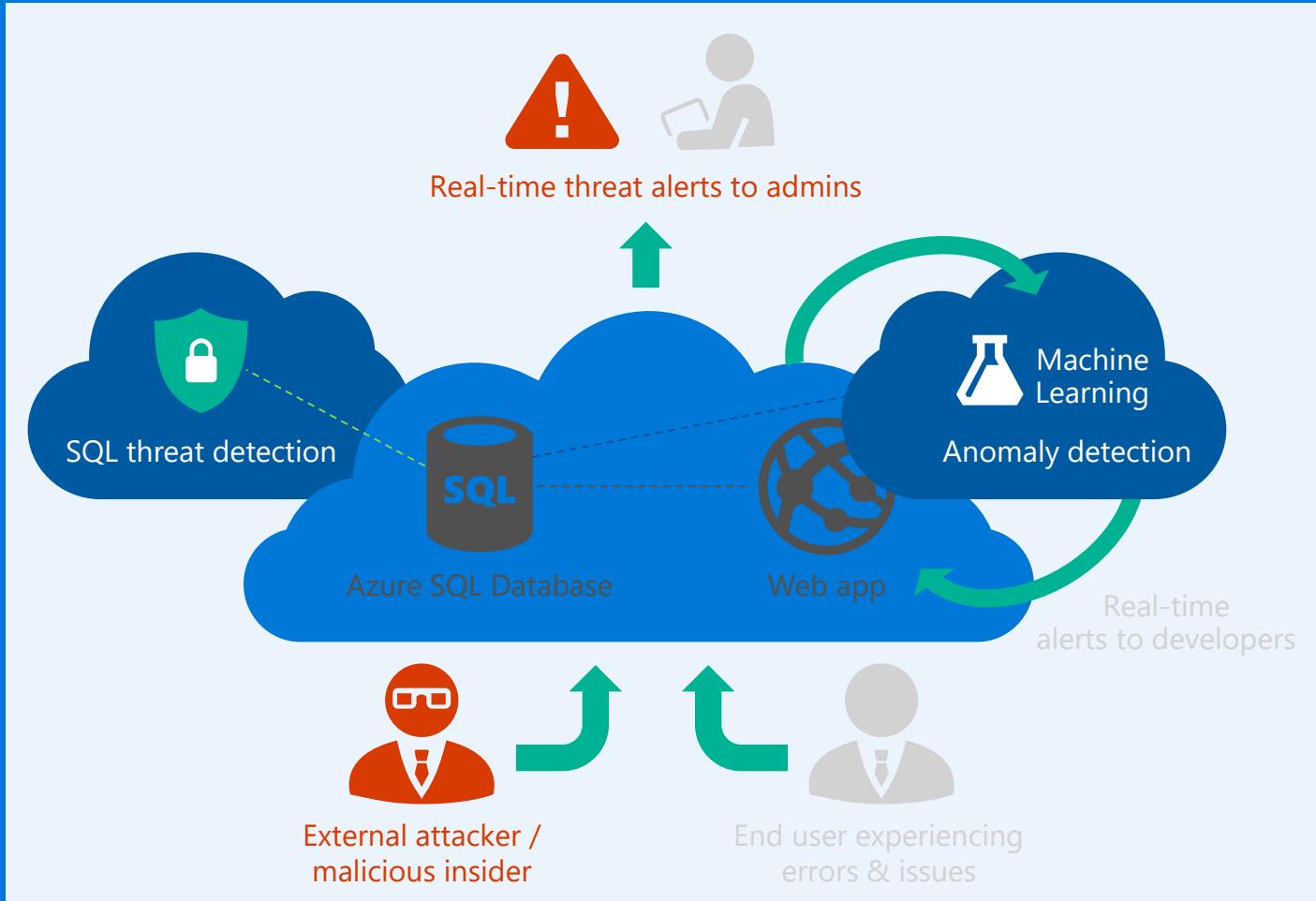


The developer's intelligent cloud-database service

- Built for application developers
- Gives you more time to innovate
- Accelerates your time to market
- Includes built-in advisors that quickly learn your apps' unique characteristics
- Dynamically adapts to maximize performance, reliability, and data protection
- Helps you build secure apps and connect to your database by using the languages and platforms that you prefer

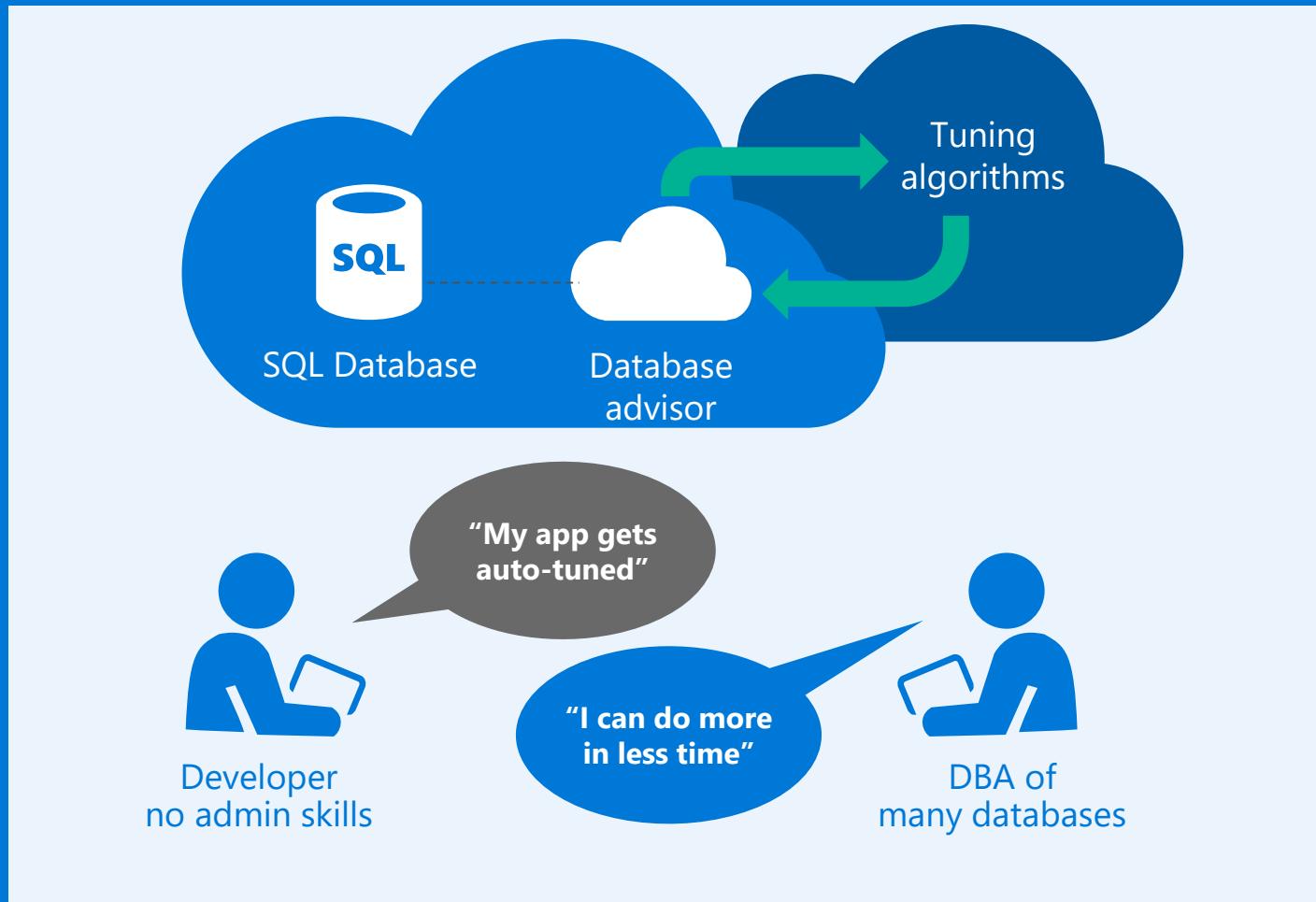


Threat and anomaly detection



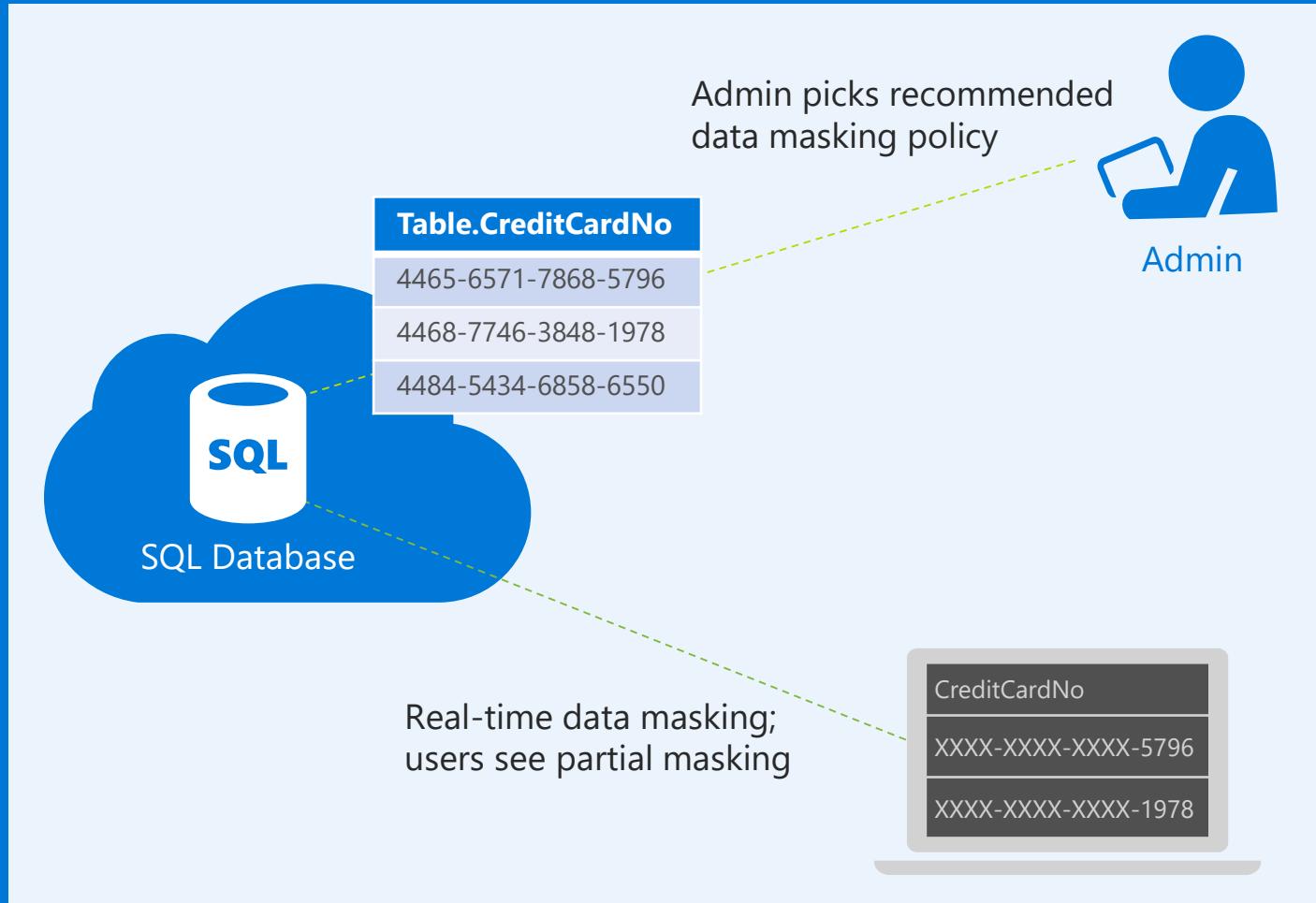
- Configurable threat detection policy
- Built-in behavioral analysis
- Real-time alerts
- Explorable audit log
- Unusual patterns are detected and fixed

Self-tuning performance



- Continuously monitors query patterns and performance
- Manages indexes, tailored to the specific workload
- Tests and validates actions, reverts if impact negative
- Runs in full auto-mode, or in recommend/review mode

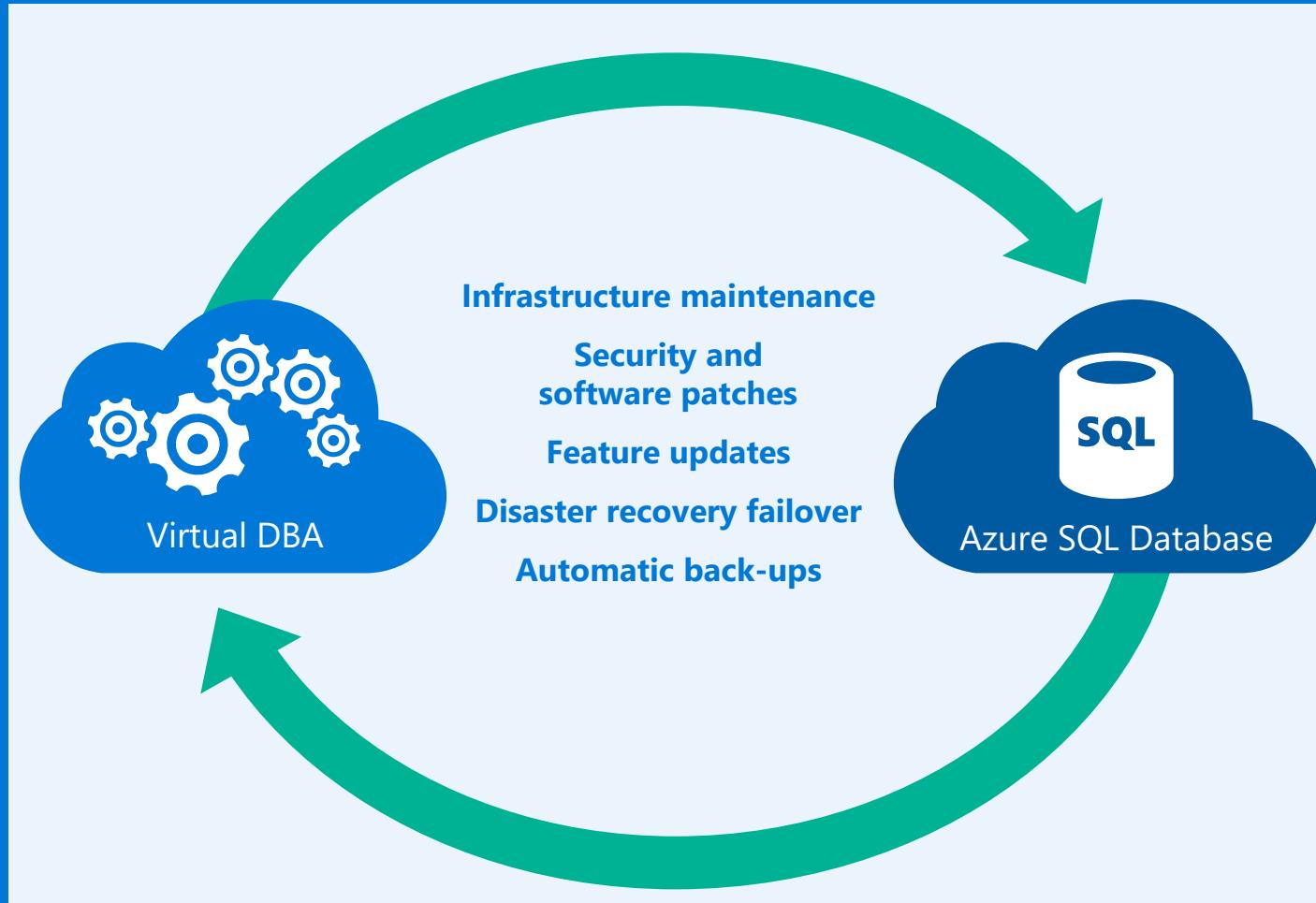
Actionable recommendations



- Get recommended actions for security policies and performance issues
- Built-in advisors provide one-click recommendations and save time

A virtual DBA

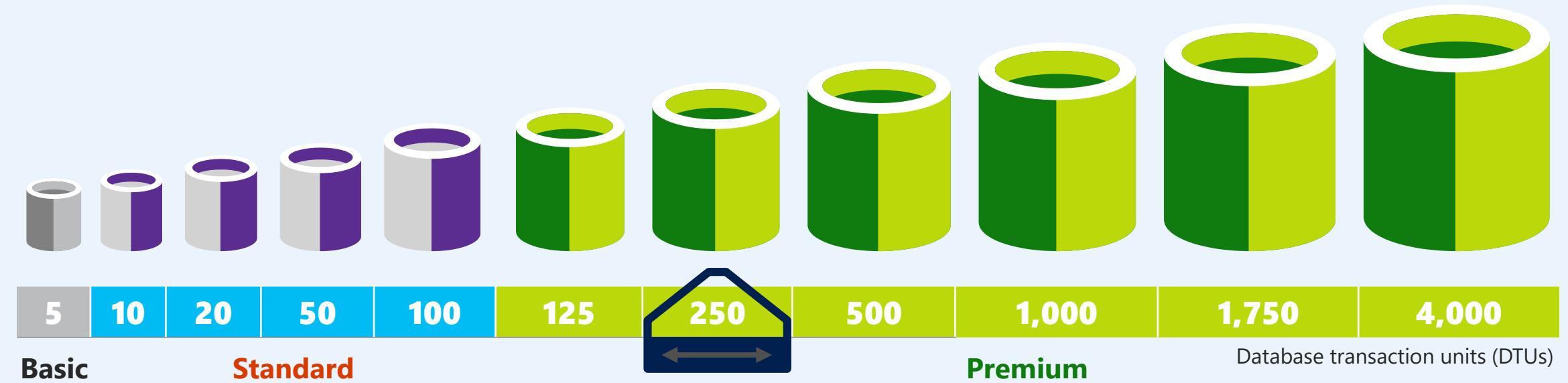
Built-in admin and data protection



- Leverage Azure as a virtual DBA
- Automatically manage activities like maintenance, security, updates, DR and back-ups
- No application downtime
- Save money, time and worry

Scale on the fly

- Scale up with one click
- Accommodate growth and peak workloads
- Pay for what you need, when you need it





Firewall settings

mabenoit-test-sql (SQL server)



Save



Discard



Add client IP



Connections from the IPs specified below provides access to all the databases in mabenoit-test-sql.

Allow access to Azure services

ON

OFF

Client IP address

127.0.0.1

RULE NAME

START IP

END IP

...

No firewall rules configured.

SQL Database Geo-Replication

Geo-Replication

Select a region on the map or from the Target Regions list to create a secondary database.



SERVER/DATABASE

STATUS

PRIMARY



East US

Online

SECONDARIES

Geo-Replication is not configured

TARGET REGIONS



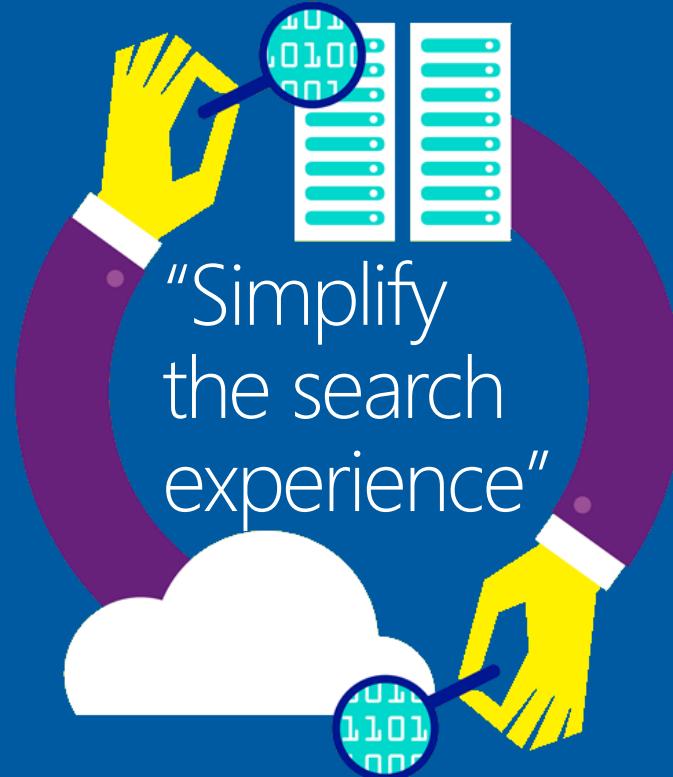
West US

Recommended



Azure Search

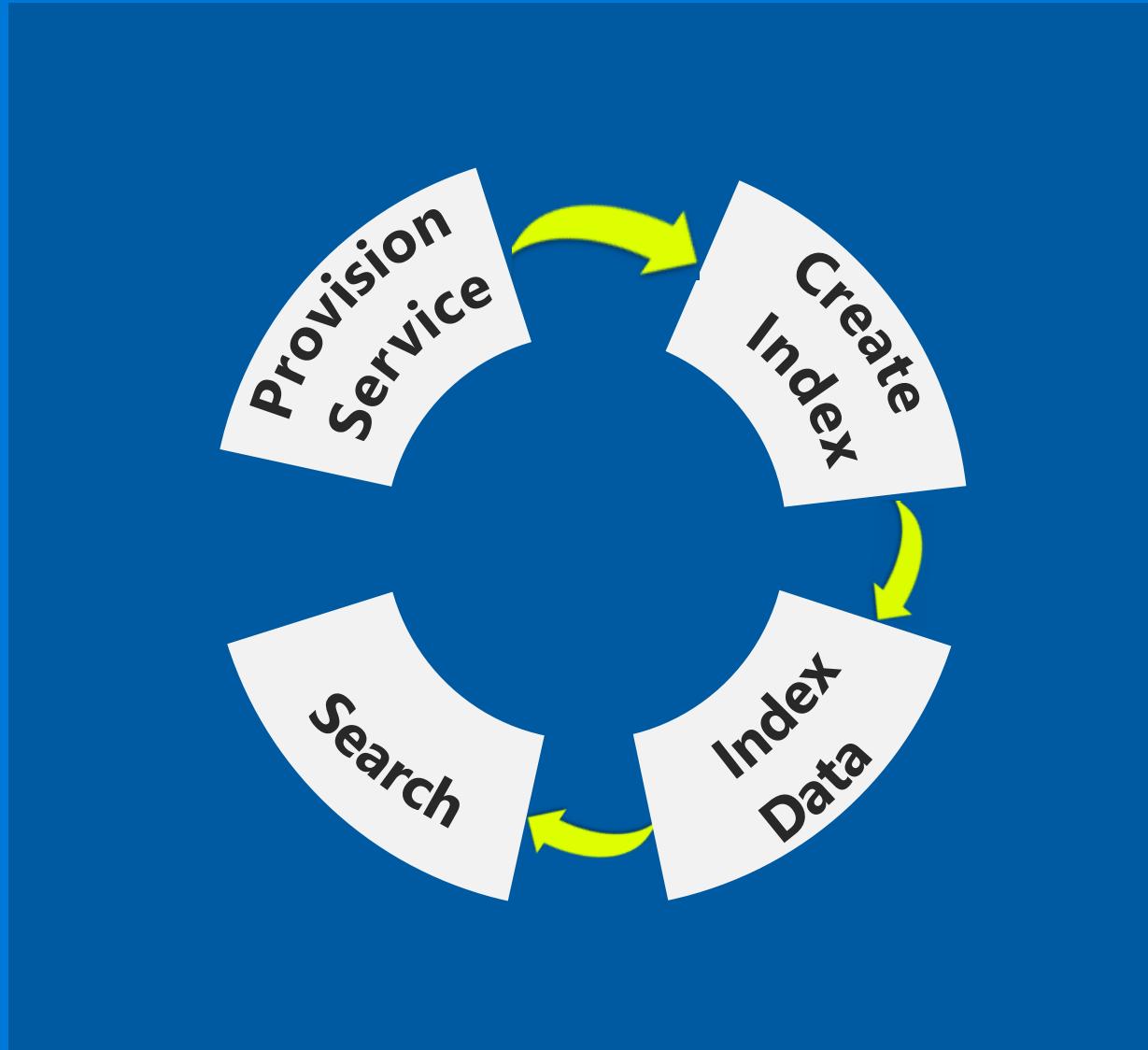
Azure Search



"Simplify
the search
experience"

A search-as-a-service solution allowing developers to incorporate great search experiences into applications without managing infrastructure or needing to become search experts.

Typical Search Workflow



Linguistics are key in search

Linguistics

Support for 56 languages

- Word breaking, stop words, inflections

Lucene analyzers

- Well-known analyzer stack
- Stemming

Microsoft analyzers

- Same NLP stack used by parts of Office, Bing
- Deep understanding of languages
- Lemmatization in many languages



Custom
relevance

Scoring profiles

- Field weights
- Scoring functions
- magnitude, freshness, distance, tags

3 main patterns

- Known data directly available in the index
- Personalization using tag boosting
- Analytics, compute externally and push to the index

Search Explorer

Search explorer

Change index Set API version

Query string

Examples: *, \$top=10, \$top=10&\$skip=10&search=*

Search

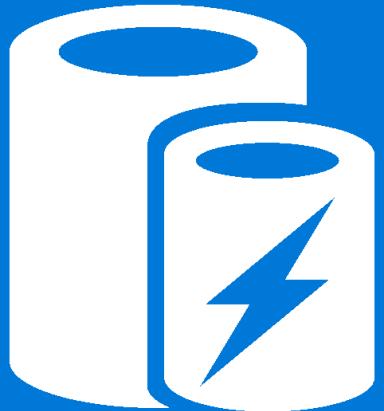
Index: sitecore-master-index
API version: 2016-09-01

Request URL

https://[REDACTED]-as.search.windows.net/indexes/sitecore-master-index/docs?api-version=2016-09-01&search=*

Results

```
1 {
2   "@odata.context": "https://[REDACTED]-as.search.windows.net/indexes
('sitecore-master-index')/$metadata#docs(azureuniqueid,boosting_rules_____,bucketable_____,
calculateddimension,command,content_____,content_test_____,creator_1,culture,database_1,
datasource_1,enable_itemFallback_____,enforce_version_presence_____,final_renderings_____,
fullpath_1,group_1,haschildren,hidden_2,id_1,indexname_1,is_bucket_____,isbucket_text,
istemplate,language_1,latestversion_1,lock,lock_2,name_____,parent_____,parsedcreatedby,
parsedlanguage,parsedupdatedby,path_1,presets_____,publishing_groups_____,schedule,semantics_2,
site,sizerange,smallcreateddate_2,smallupdateddate_2,source_item_____,template_1,templatename_1,
thumbnail_2,tracking_____,uniqueid_1,urlLink,version,version_____,workflow_state_____,
workflowValidationRules_____)",
3   "value": [
4     {
5       "@search.score": 1,
6       "azureuniqueid": "a051fe3f8636abccb89ddd85f5037cbe",
7       "boosting_rules_____: "",
8       "bucketable_____: "",
9       "calculateddimension": [],
10      "command": "{0B3BCF9C-A055-4363-80F5-B86C471F2C4A}",
```



Redis Cache

What is Redis ?



- It stands for REmote DIctionary Server
- Extremely fast and versatile
- Ability to store complex Data Structure(s)
- Blurring boundaries where caching ends and where NoSQL DB begins
- Rapidly growing (Craigslist, Twitter, Instagram)
- Open Source, awesome community

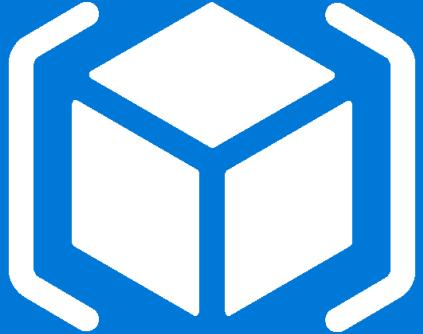
Azure Redis Cache PaaS

- Azure Redis Cache is PaaS offering fully managed by Microsoft giving secure dedicated access
- 3 tiers:
 - Basic - Single node, multiple sizes, ideal for development/test and non-critical workloads. The basic tier has no SLA. Max Cache Size – 53 GB
 - Standard - replicated cache in a two node Primary/Secondary configuration managed by Microsoft, with a high availability SLA. Max Cache Size 53 GB
 - Premium - includes a high availability SLA and all the Standard-tier features plus DR, persistence, cluster and Azure VNET enhanced security. Max Cache Size – 530 GB (more on request)

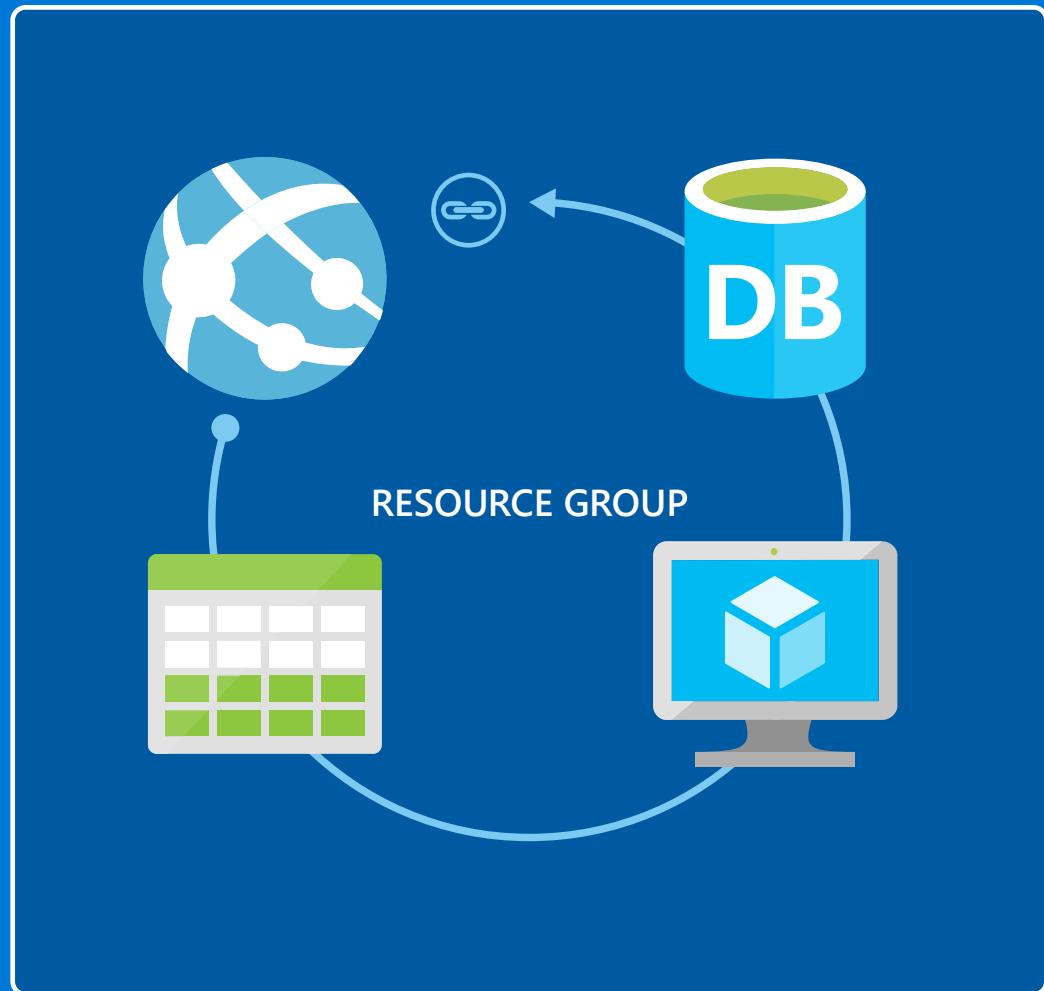
Picking Right Tier\SKU in Azure Redis Cache

- Considerations
 - Memory
 - Throughput
 - High Availability
 - Data persistence
 - Cluster
 - Network Isolation
 - # of client connections

<https://azure.microsoft.com/en-us/documentation/articles/cache-faq/#what-redis-cache-offering-and-size-should-i-use>



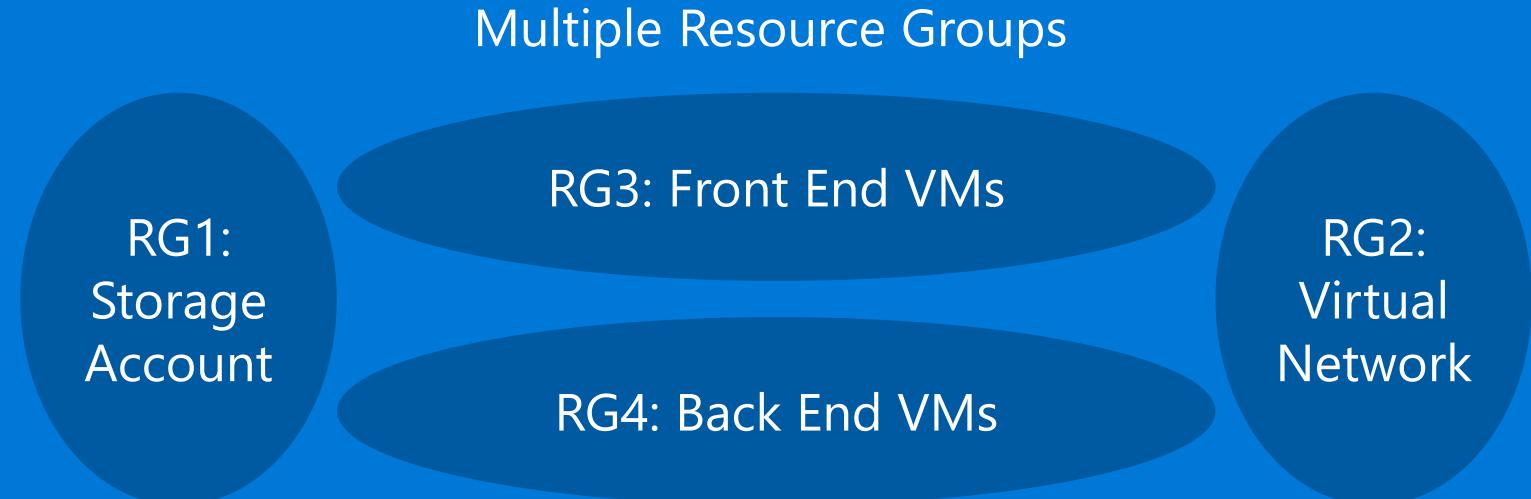
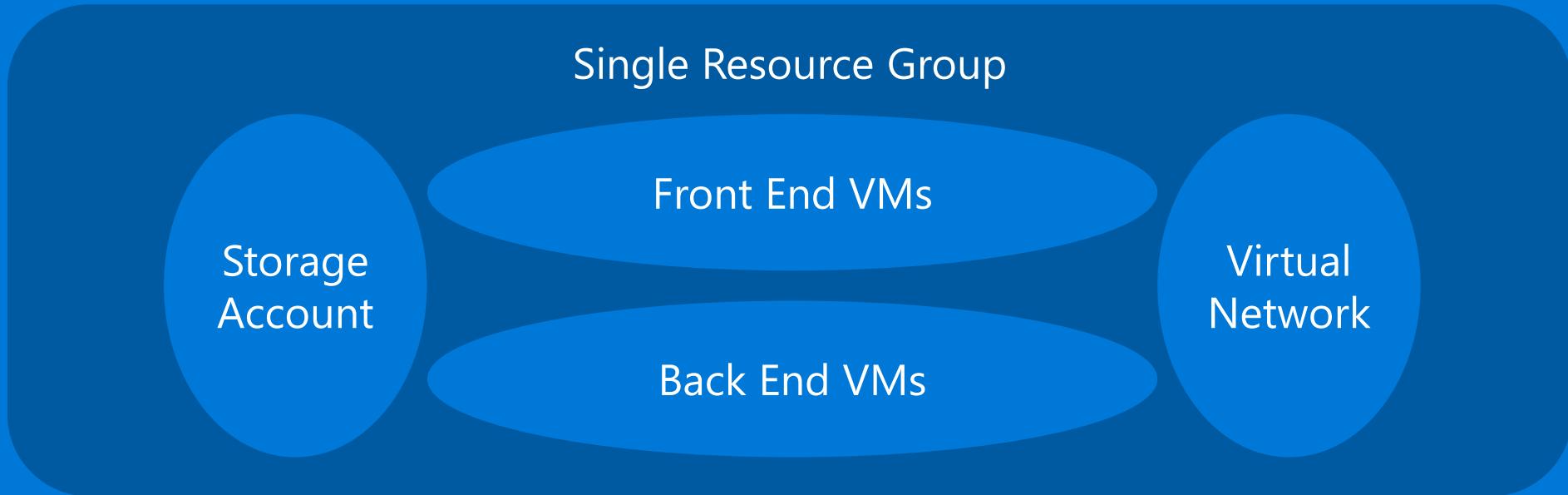
Azure Resource Group and ARM Templates



Resource Groups

- Tightly coupled containers of multiple resources of similar or different types
- Every resource **must** exist in one and only one resource group
- Resource groups can span regions

Single or multiple resource groups?



What is Azure Resource Manager?

Consistent
Management
Layer

Tools



Microsoft Azure



Command Line



Visual Studio

AZURE RESOURCE MANAGER API

RESOURCE MANAGER



Cloud + On-Premises



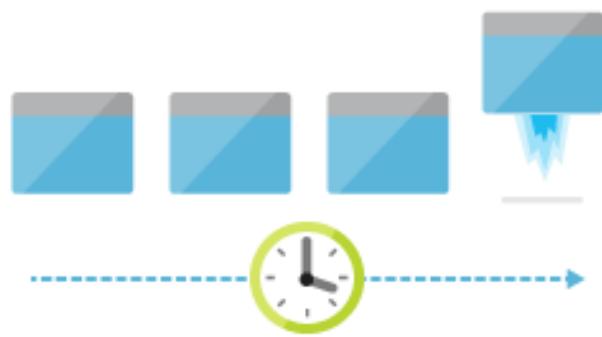
ADFS
AAD

RESOURCE PROVIDER CONTRACT

Provider
Rest Points



Features



Deploy



Organize



Control

The template

Structure and elements

```
{  
  "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",  
  "contentVersion": "",  
  "parameters": { },  
  "variables": { },  
  "resources": [ ],  
  "outputs": { }  
}
```

Declarative syntax

Allows you to declare the resources you want to have without having to write the script sequence of commands required to create it.

Example: Sitecore Web Experience Manager 8.2

Template

Download Add to library Deploy

 Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Define resources and configurable input parameters and deploy with script or co

Template Parameters CLI CLI 2.0 (Preview) PowerShell .NET Ruby

►  Parameters (50)
►  Variables (18)
▼  Resources (9)
  [variables('cmHostingPlanNameTidy')]
  [variables('cdHostingPlanNameTidy')]
  [variables('cmWebAppNameTidy')]
  [variables('cdWebAppNameTidy')]
  [variables('dbServerNameTidy')]
  [variables('webDbServerNameTidy')]
  [variables('searchServiceNameTidy')]
  [variables('redisCacheNameTidy')]
  [variables('appInsightsNameTidy')]

```
1 {  
2   "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",  
3   "contentVersion": "1.0.0-r219+219.d758bc355eb494e7f6794d23c3ca0702e4501916",  
4   "variables": {  
5     "webApiVersion": "2015-08-01",  
6     "dbApiVersion": "2014-04-01-preview",  
7     "searchApiVersion": "2015-02-28",  
8     "redisApiVersion": "2016-04-01",  
9     "appInsightsApiVersion": "2014-08-01",  
10    "cmHostingPlanNameTidy": "[toLowerCase(trim(parameters('cm.hostingplan.name')))]",  
11    "cdHostingPlanNameTidy": "[toLowerCase(trim(parameters('cd.hostingplan.name')))]",  
12    "cmWebAppNameTidy": "[toLowerCase(trim(parameters('cm.webapp.name')))]",  
13    "cdWebAppNameTidy": "[toLowerCase(trim(parameters('cd.webapp.name')))]",  
14    "dbServerNameTidy": "[toLowerCase(trim(parameters('sqlserver.name')))]",  
15    "coreDbNameTidy": "[toLowerCase(trim(parameters('core.sqldatabase.name')))]",  
16    "webDbNameTidy": "[toLowerCase(trim(parameters('web.sqldatabase.name')))]",  
17    "webDbServerNameTidy": "[toLowerCase(trim(parameters('web.sqlserver.name')))]",  
18    "masterDbNameTidy": "[toLowerCase(trim(parameters('master.sqldatabase.name')))]",  
19    "searchServiceNameTidy": "[toLowerCase(trim(parameters('searchservice.name')))]"
```

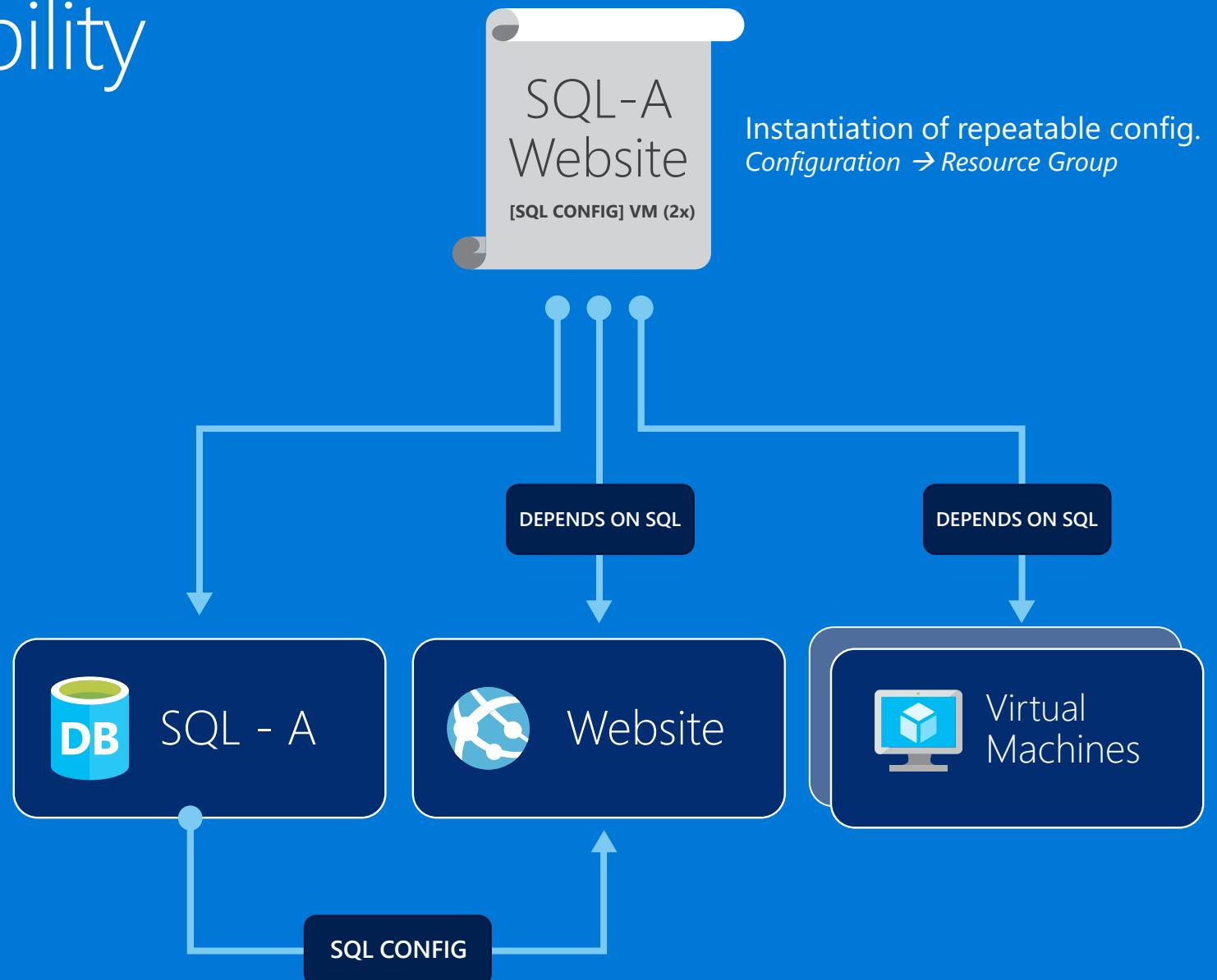
Power of Repeatability

Azure Templates can:

- Ensure Idempotency
- Simplify Orchestration
- Simplify Roll-back
- Provide Cross-Resource Configuration and Update Support

Azure Templates are:

- Source file, checked-in
- Specifies resources and dependencies (VMs, WebSites, DBs) and connections (config, LB sets)
- Parametrized input/output



Resource Tags



- Name-value pairs assigned to resources or groups
- Subscription-wide taxonomy
- Each resource can have up to 15 tags

Tagging Tips

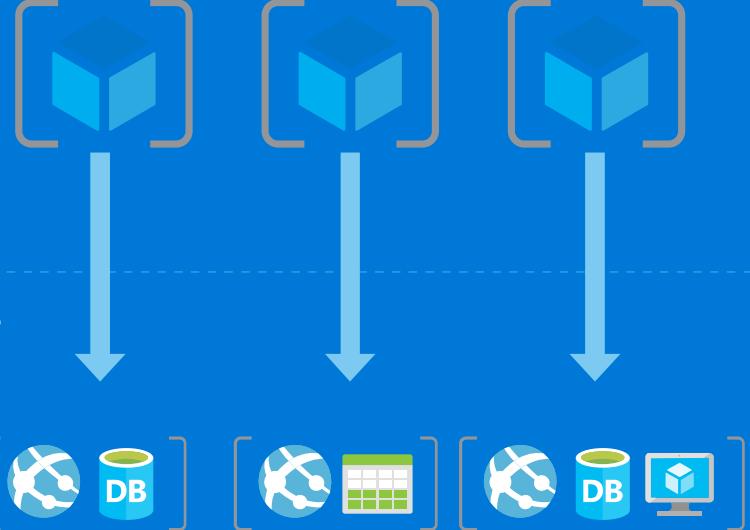
- Notes: Simple note for VM
- Creator: track the “owner” of a VM
- Department/Cost center: who pays
- Environment: production vs. pre-production vs. test

Role Based Access Control

SUBSCRIPTION

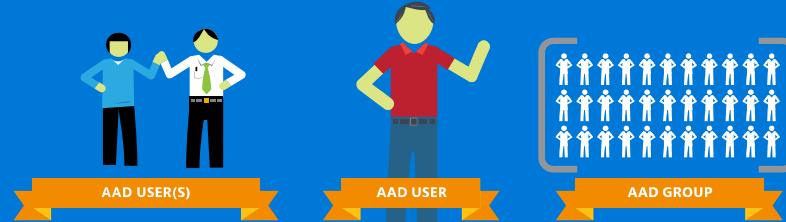


RESOURCE GROUPS



RESOURCES

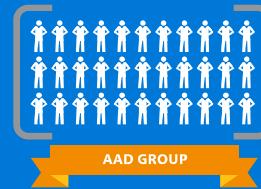
ACCESS INHERITANCE



CONTRIBUTORS



OWNER



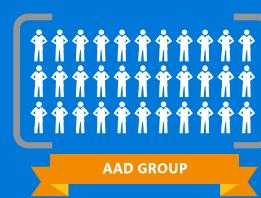
READERS



CONTRIBUTORS



OWNER



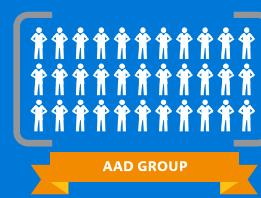
READERS



CONTRIBUTORS



OWNER



READERS

Automation



Scripting Language

POWERSHELL

- Task automation and configuration management framework
- Command-line shell and associated scripting language built on the .NET Framework
- Full access to COM and WMI, enabling administrators via WS-Management and CIM enabling management of remote Linux systems and network devices



Model / API / Engine

AZURE RESOURCE MANAGER

- Deploy - Automate initial deployments and upgrades using templates
- Manage - Access control, policies, auditing and tagging support management post-deployment
- Monitor - Monitor related resources as a group



Orchestration Service

AZURE AUTOMATION

- Automation as a Service
- An orchestration service in Azure to automate repetitive or long-running processes

Script Authoring Environment

- Uses PowerShell Workflows
- Combination of PowerShell 4.0 and WF
- Uses Integration Modules, very similar to PowerShell Modules

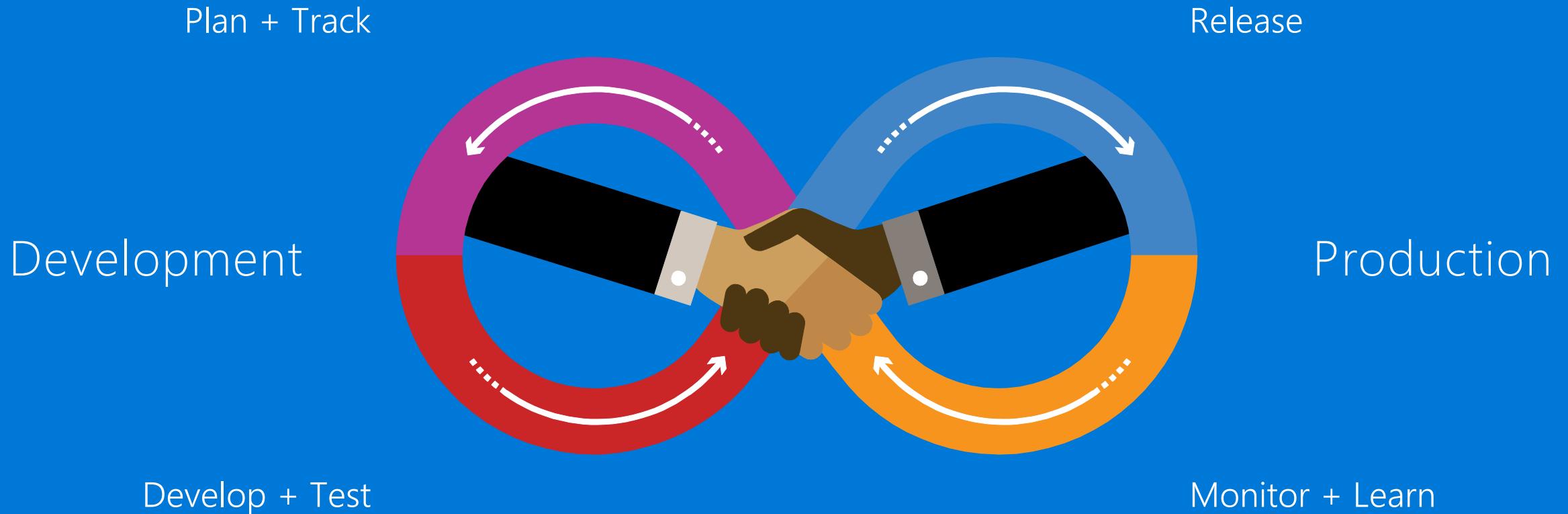
Scheduling and Monitoring

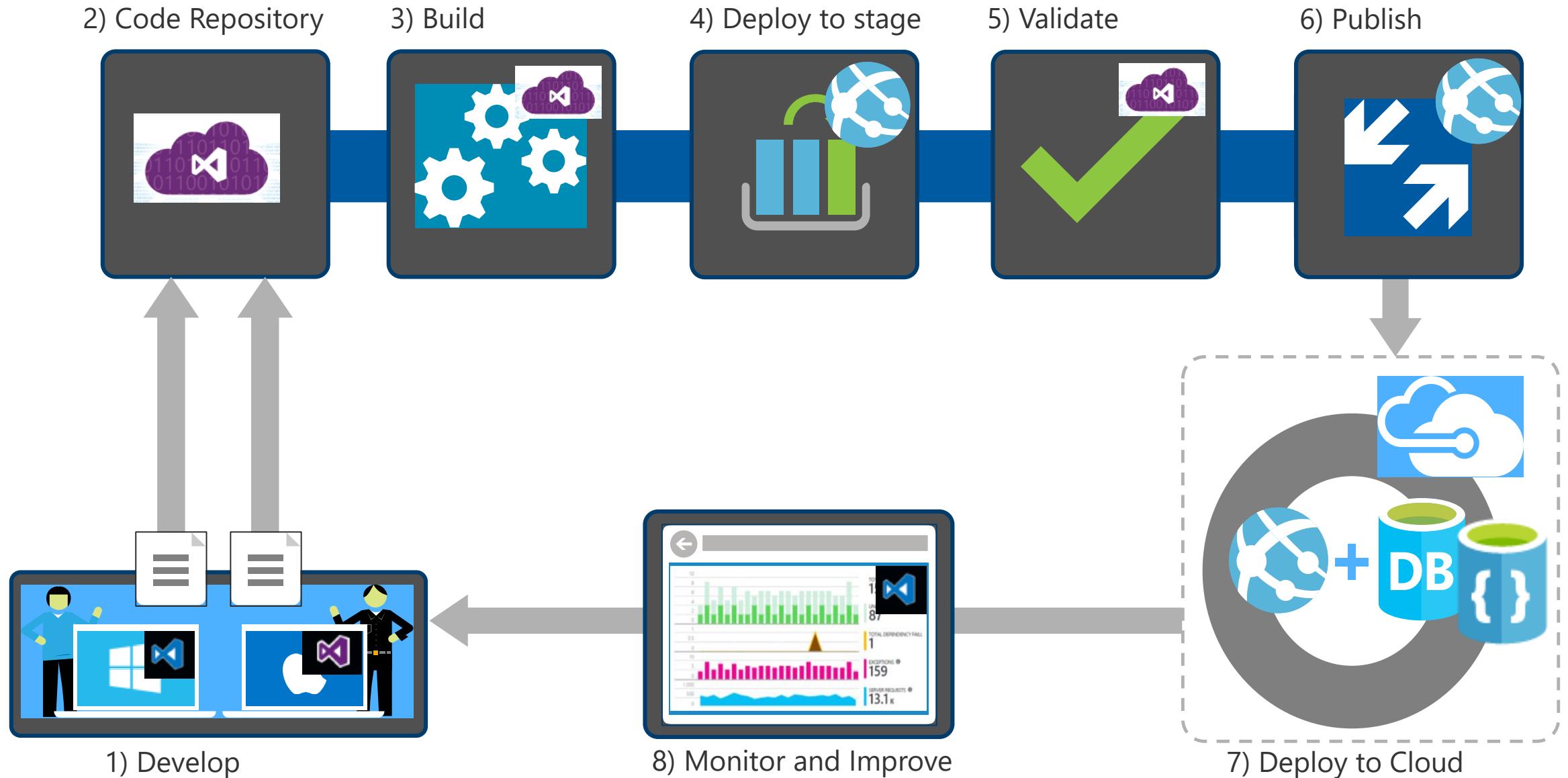
- Execute scripts on a schedule
- Review execution status on a dashboard



Other Azure services,
-let's be creative!
-let's innovate and deliver faster!

The converged DevOps lifecycle



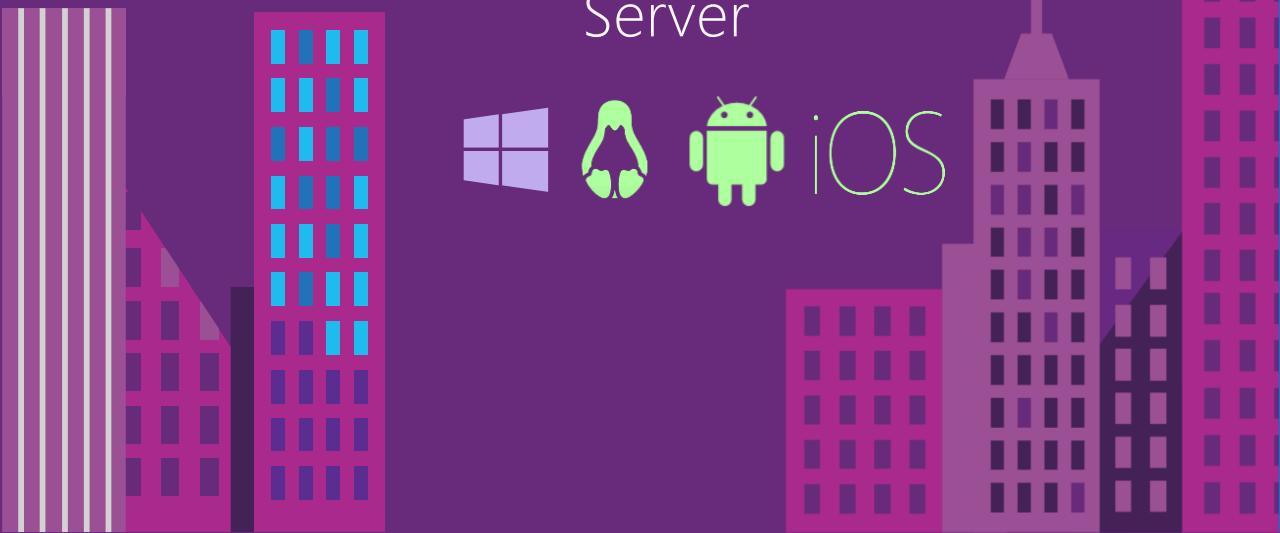




Visual Studio
Team Services



Team Foundation
Server



Plan & Track Work

Source Code Management

Package Management

Quality Management

Cross-platform Build

Continuous Deployment

Release Management

Feedback Management

Application Telemetry

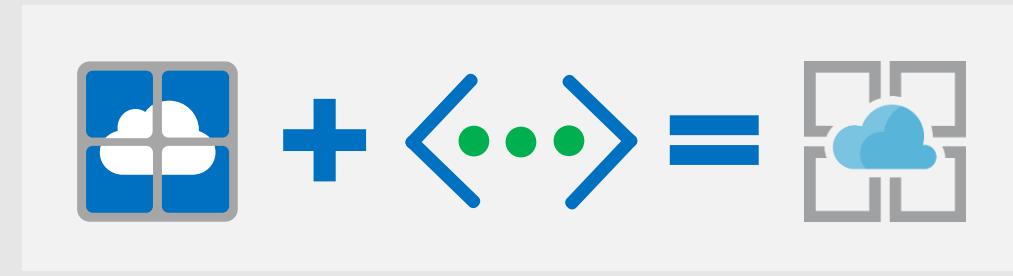
Extend and Customize

App Service Environment (ASE)

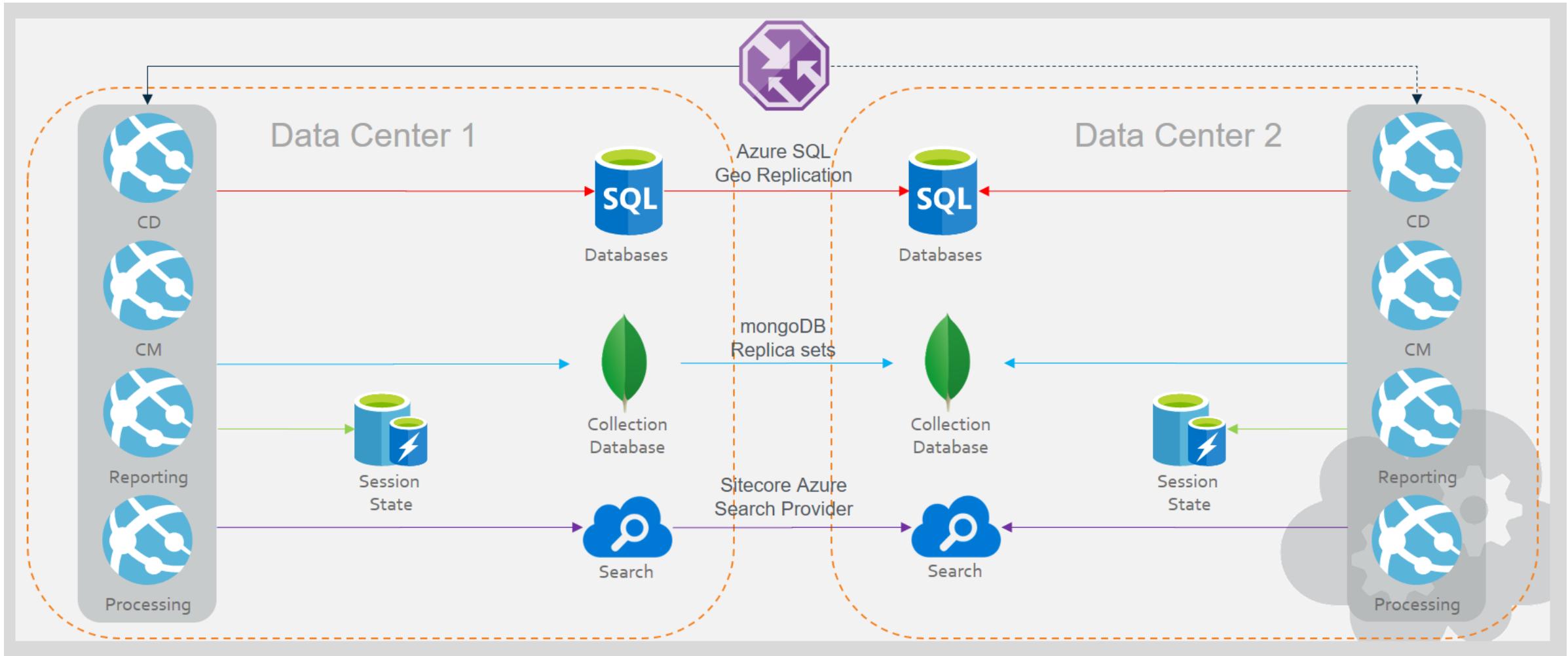
Limitation with the default App Service?

ASE provides:

- Network isolation for apps
- Larger scale than multi-tenant
- More powerful hosts
- Ability to work with all VPN types

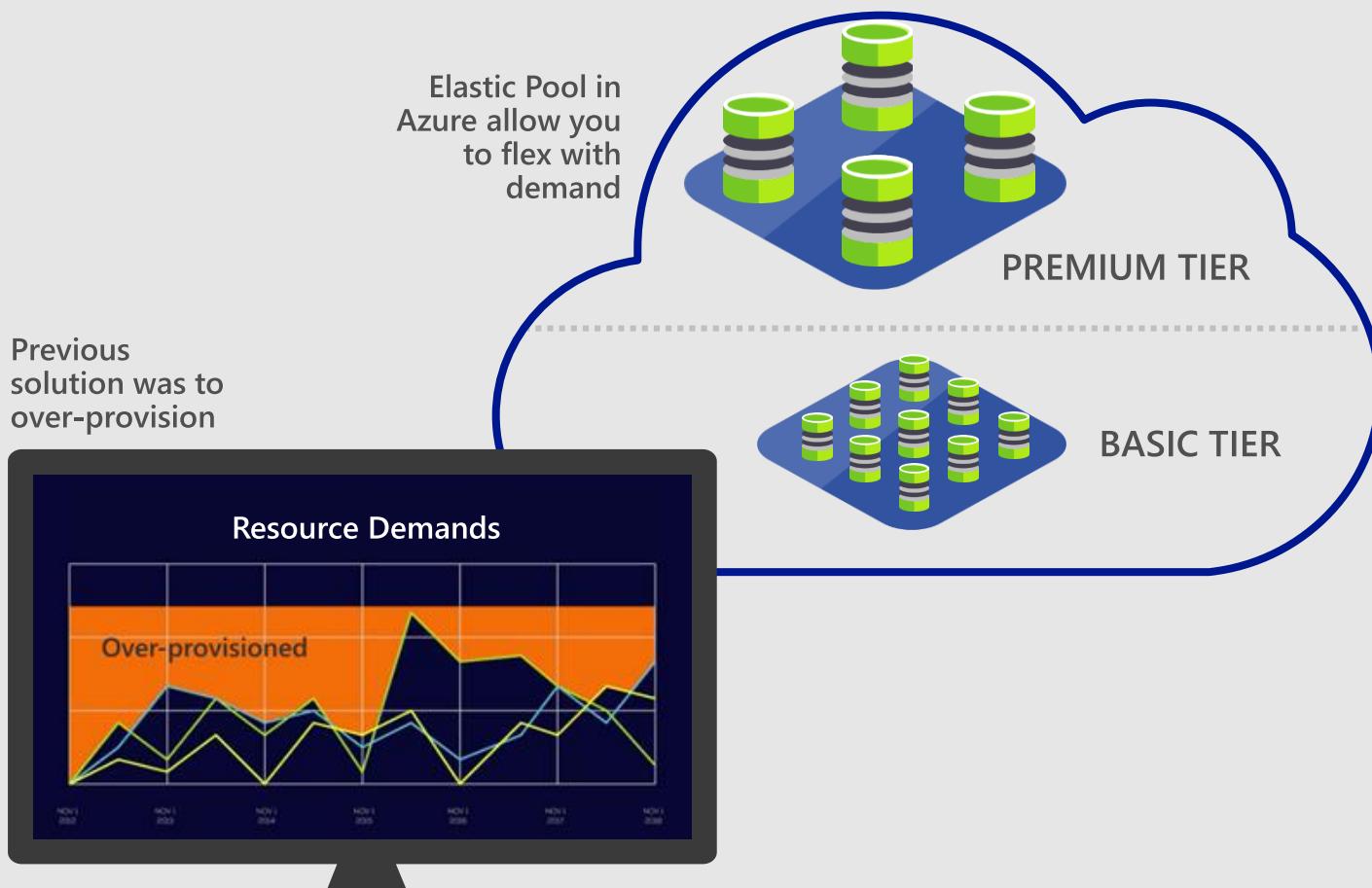


Azure Traffic Manager



Azure SQL Database: Elastic Pool

- Unpredictable database resource demands
- Instead of overprovisioning databases to meet peak demand



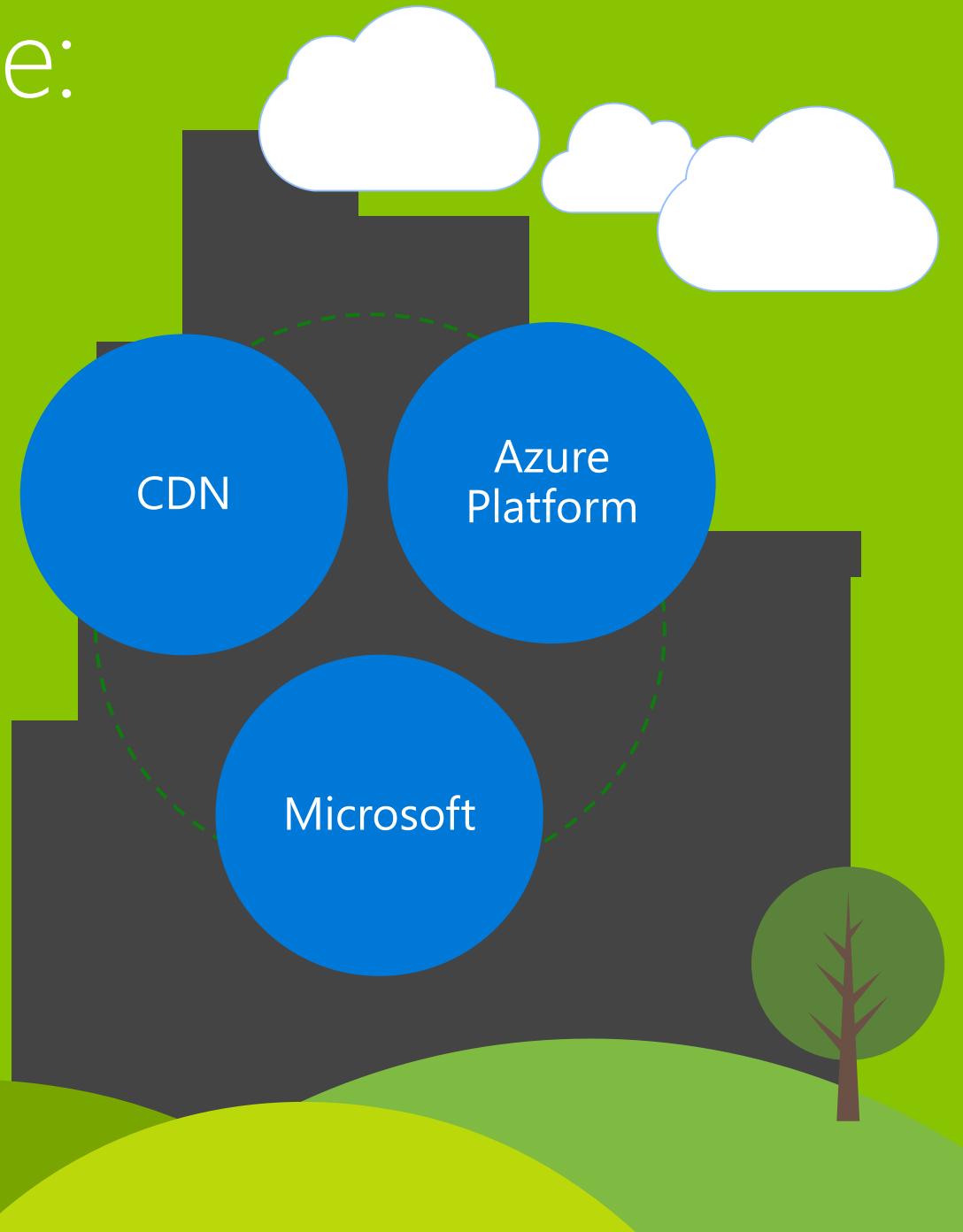
Azure CDN lets you leverage:

Multi CDN endpoints including from
Verizon and **Akamai Networks**

Gain Performance, Speed, Reach, and
Scalability

Optimization and Direct Integration
from the entire Azure Platform

Enterprise-scale advantages from
Microsoft



Cognitive Services APIs



Language



Speech



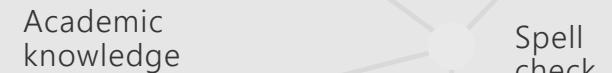
Recommendation API



Machine Learning



Academic knowledge



Knowledge



Search



Bing web search



Vision

Emotion



Cognitive Services

Vision

Computer vision

Face

Emotion

Video

Speech

Speaker recognition

Bing Speech

Custom Recognition

Language

Text analytics

Bing Spell Check

Linguistic analysis

LUIS

Translator

Web language model
(WebLM)

Knowledge

Academic knowledge

Entity linking services

Knowledge exploration service

Recommendations

Search

Bing search API

Bing image search API

Bing video search API

Bing news search API

Bing auto suggestions API

Sitecore Hackathon 2017

Submission Videos, checkout the Microsoft Azure initiatives!



2



7



1



2



1



1

Wrap-up, references and Next steps

Agenda

Sitecore + Azure

Microsoft Azure

Azure PaaS

App Service

ARM Templates

Other services, let's be creative! ;)

Conclusion, next steps and references

Azure Web App

Azure SQL Database

Azure Search

Azure Application Insights

Azure Redis Cache

Architecture guidance

- Know the limits of each service
- Know the SLA of each service
- Know the price of each service
- Know the regions where you could host each service
- Know the compliances of the Azure platform
- Know the Azure PaaS Security Best Practices and the Azure Security Services and Technologies
- Automate early and always with ARM Templates and for example with Visual Studio Team Services
- Get inspired from the Microsoft Technical Case Studies and make amazing architecture diagrams with these icons
- Are you an AWS expert? Take a look at this service mapping page
- Are you a Java expert? Take a look at the Java Developer Center

Official Sitecore References

[Sitecore on Azure](#)

[Deploy a new Sitecore environment to Azure App Service](#)

[Sitecore Azure Search overview](#)

[Sitecore Azure Quickstart Templates](#)

[Support reference for Azure Search](#)

[Package a Sitecore solution for the Azure App Service](#)

[Advanced troubleshooting for Sitecore XP on Azure Web Apps](#)

[Five reasons why Microsoft Azure Web Apps and Sitecore are a match made in heaven](#)

[Sitecore Azure App Service overview](#)

[Access logs and diagnostics data in Sitecore XP on Azure Web Apps](#)

[Securing Microsoft Azure resources for a Sitecore deployment](#)

[Monitoring and maintaining Azure Search](#)

[Monitoring and maintaining Azure SQL](#)

[Analyze Sitecore logs with Application Insights](#)

[Sitecore Symposium 2016 - Better Together: Sitecore on Azure](#)

[Configure Azure Search](#)

Community-driven References

[Getting started with Sitecore on Azure PaaS](#)

[An introduction to Sitecore on Azure Web Apps](#)

[Sitecore 8.2-1 on Azure Web Apps](#)

[How to take benefit from Application Insights for Sitecore on Azure Web Apps?](#)

[Five reasons why Microsoft Azure Web Apps and Sitecore are a match made in heaven](#)

[Use the Sitecore Azure toolkit to deploy your on premises environment](#)

[The brave new world of Azure PaaS](#)

[Sitecore 8.2u1 Azure Resource Manager Templates](#)

[Deploying code to Sitecore on PaaS](#)

[Sitecore Azure Basics](#)

[Create Sitecore Web Experience Platform 8.2 on Azure Platform as a Service](#)

[Sitecore Demo: Azure Web App 8.2 Update](#)

[Installing Azure Search in Sitecore](#)

[Sitecore SUGNL 20161207 - Sitecore 8.2-1 on Azure Web Apps](#)

[Why do I need to use a powerful combo of Sitecore and Microsoft Azure?](#)

[Installing Sitecore 8.2 on Azure PaaS](#)

[Which powerful features are brought by Sitecore Azure Toolkit?](#)

[January 2017 London - Sitecore in Azure - Johannes Zijlstra](#)

[Using IP Geolocation and SSL on Azure](#)

[Sitecore 8.2 Update 1 on Azure Web Apps](#)

[Sitecore on Azure... With Unicorn](#)

[Zero downtime deployments with Sitecore on Azure](#)

[High Availability of Azure Search with Sitecore](#)

[Sitecore 8.2 update 1: Azure deployments, ARM, Web Deploy and the Sitecore Azure Toolkit](#)

["Sitecore on Azure PaaS" – Geo-redundant Azure PaaS based Sitecore Reference Architecture](#)

[Run Sitecore Publishing as Azure Cloud Service](#)

[How to run standard steps for the Sitecore deployment on Azure platform?](#)

[Sitecore PaaS at Azure Marketplace – First Look](#)

[What do you need to review in Azure as PaaS platform for the Sitecore environment?](#)

Become an MVP! Great way to learn and share!

Microsoft Azure MVP

Whether you're a great speaker, have a talent in blogging, lead a top technical community, are a social media superstar, a top GitHub or StackOverflow contributor or have a totally different and cool way to share your passion for our products and services, we'd love to know more!

Sitecore Cloud MVP

The Sitecore Cloud MVP award is being awarded to individuals who are experts in Cloud solutions, using Sitecore cloud services, experienced to deploy Sitecore platform in the cloud and who are actively participating in online and offline communities and events.

Free Online Microsoft Azure Trainings on MVA

Deep Dive into Azure App Service – A Platform to Build Modern Applications

<https://mva.microsoft.com/en-US/training-courses/deep-dive-into-azure-app-service-a-platform-to-build-modern-applications-16828>

Cloud Application Development

<https://mva.microsoft.com/en-US/training-courses/cloud-application-development-17172>

Mastering Azure App Service Part 3 – Building Azure Web Apps

<https://mva.microsoft.com/en-US/training-courses/mastering-azure-app-service-part-3-building-azure-web-apps-16835?l=VucUekp4C 4405918563>

Web and Data Application Development with Visual Studio 2017 and Azure

<https://mva.microsoft.com/en-US/training-courses/web-and-data-application-development-with-visual-studio-2017-and-azure-16931>

Building Intelligent Cross-Platform Mobile Applications Using Xamarin and Azure Search

<https://mva.microsoft.com/en-US/training-courses/building-intelligent-crossplatform-mobile-applications-using-xamarin-and-azure-search-16890>

Building Infrastructure in Azure using Azure Resource Manager

<https://mva.microsoft.com/en-US/training-courses/building-infrastructure-in-azure-using-azure-resource-manager-14321>

Azure Resource Manager DevOps Jump Start

<https://mva.microsoft.com/en-us/training-courses/azure-resource-manager-devops-jump-start-8413>

Dev/Test in the Cloud

<https://mva.microsoft.com/en-US/training-courses/devtest-in-the-cloud-16274>

Free Online Microsoft Azure Trainings on OpenEdX



Free and easily
accessible

Build and demonstrate
your capability

Learn on your
own time

Apply and validate
your skills

Fundamentals	Nov 29	Microsoft Azure Fundamentals	Microsoft Azure for AWS Experts		
Core IaaS	Nov 29	Microsoft Azure Virtual Machines	Microsoft Azure Virtual Networks	Microsoft Azure Identity	Microsoft Azure Storage
Deployment	Dec 31	Microsoft Azure App Services			
	Dec 31	Databases in Azure			
	Jan 31	Azure Application Deployment and Management			
Securing & Managing	Dec 15	Managing Azure Workloads			
	Dec 31	Azure Security and Compliance			
Scale and Agility	Dev 15	Automating Azure Workloads			
	Jan 01	Continuous Integration and Continuous Deployment			
Migration	Mar 31	Migrating Workloads to Azure			
DevOps	Jan 01	DevOps on Azure PaaS			
	Jan 12	DevOps Testing			
	Mar 31	Infrastructure as Code	Application Monitoring and Feedback Loops		

Free Microsoft Azure e-books



Azure Developer Guide



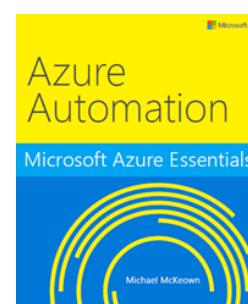
Web Apps for Devs



Mobile App Dev



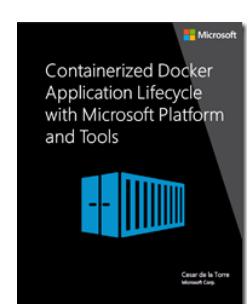
Xamarin.Forms



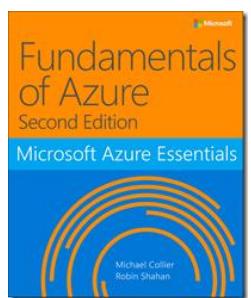
Automation



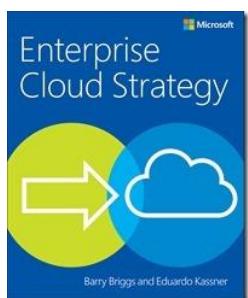
Containerized and Microservice based .NET Applications



Containerized Docker Application Lifecycle



Fundamentals



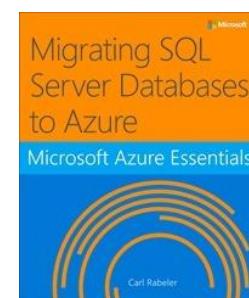
Enterprise Cloud Strategy



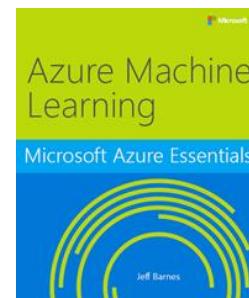
Cloud Design Patterns



Introducing Microsoft Power BI



Migrating SQL Server Databases to Azure



Azure Machine Learning

Questions

Answers

Sitecore on Azure Web Apps, *and complementary Azure PaaS services,* where to start?

Mathieu Benoit

SUGM – 4/12/2017

