

# Introduction To Microsoft Azure

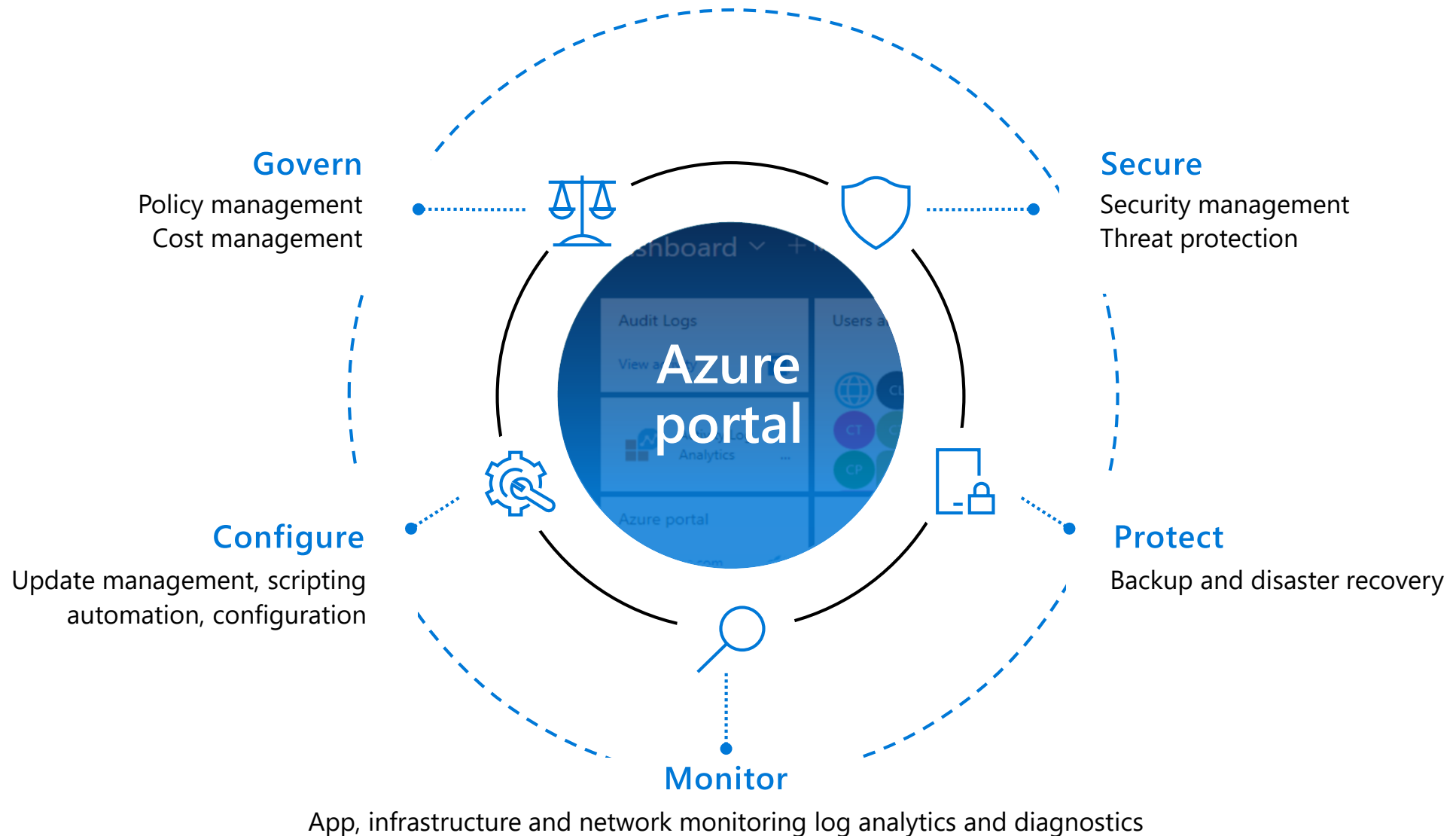
NOCOUG Summer Conference

August 16, 2018

Sumit Sengupta

Cloud Solution Architect, Microsoft

# Azure Portal offers enterprise grade management



# Azure Portal Login – what you get

## Sign on with Username / Password ( MFA )..

- User can be associated with multiple AAD
- Within each AAD – multiple subscriptions
- Access cloud resources within the subscriptions
- If credit expires, access is lost but can be regained
- Ensure use ARM always ( not ASM – older ).
- Access outside portal
  - AZ Command line
  - Powershell
  - Azure Cloud Shell
  - SDK – Visual Studio Code, Visual Studio
  - Rest API

The screenshot shows the Azure Portal login page for a user named 'susengu@microsoft.c...'. The interface includes a 'Directory + subscription' header with a close button. Below this is a 'Global subscription filter' section stating 'The portal will show data only for these subscriptions.' and a dropdown menu currently set to 'Microsoft Azure Internal Consumption'. It also shows the 'Current directory: microsoft.onmicrosoft.com' and a link to 'Learn about directories and subscriptions'. The 'Switch directory' section allows setting a default directory, currently 'Microsoft (microsoft.onmicrosoft.com)'. There are tabs for 'Favorites' and 'All Directories', with 'All Directories' being the active tab. A search bar is present above a list of directories. The list includes several entries, with 'Microsoft' (microsoft.onmicrosoft.com) highlighted in blue and marked with a yellow star. Other entries include 'Contoso' and 'Pav...' with grey stars.

Directory + subscription X

Global subscription filter

The portal will show data only for these subscriptions.

Microsoft Azure Internal Consumption

Current directory: microsoft.onmicrosoft.com

[Learn about directories and subscriptions](#)

Switch directory

Set your default directory

Microsoft (microsoft.onmicrosoft.com)

Favorites All Directories A to Z

Search

Card...	416...	★
Contoso...	1d657f92-4005-4704-b8c1-77970b77551d	★
P...	ff7820...	★
Microsoft	72f988bf-86f1-41af-91ab-2d7cd011db47	★
Pav...	e0d9abb0-a5c2-4390-aa27-86b9a8be4f6e	★

# Azure Free Account

## What you get

### 12 months

of popular free services

Linux/Windows VM  
Managed Disks 64 GB x 2  
Blob Storage – 5 GB  
File Storage – 5 GB  
SQL Database – 250 GB  
CosmosDB – 5 GB  
Outbound Data Transfer – 12 GB

+

### \$200 credit

to explore services for 30 days

+

### Always free

25+ services

App Service – 10  
Functions – 1M per month  
Containers  
AD – 500,000 objects, 50000 users per month  
Service Fabric Containers  
Application Insights – unlimited  
Advisor – unlimited

<https://azure.microsoft.com/en-us/free/>

# Cloud Computing Jargon



IaaS

Infrastructure-as-a-Service

host



PaaS

Platform-as-a-Service

build

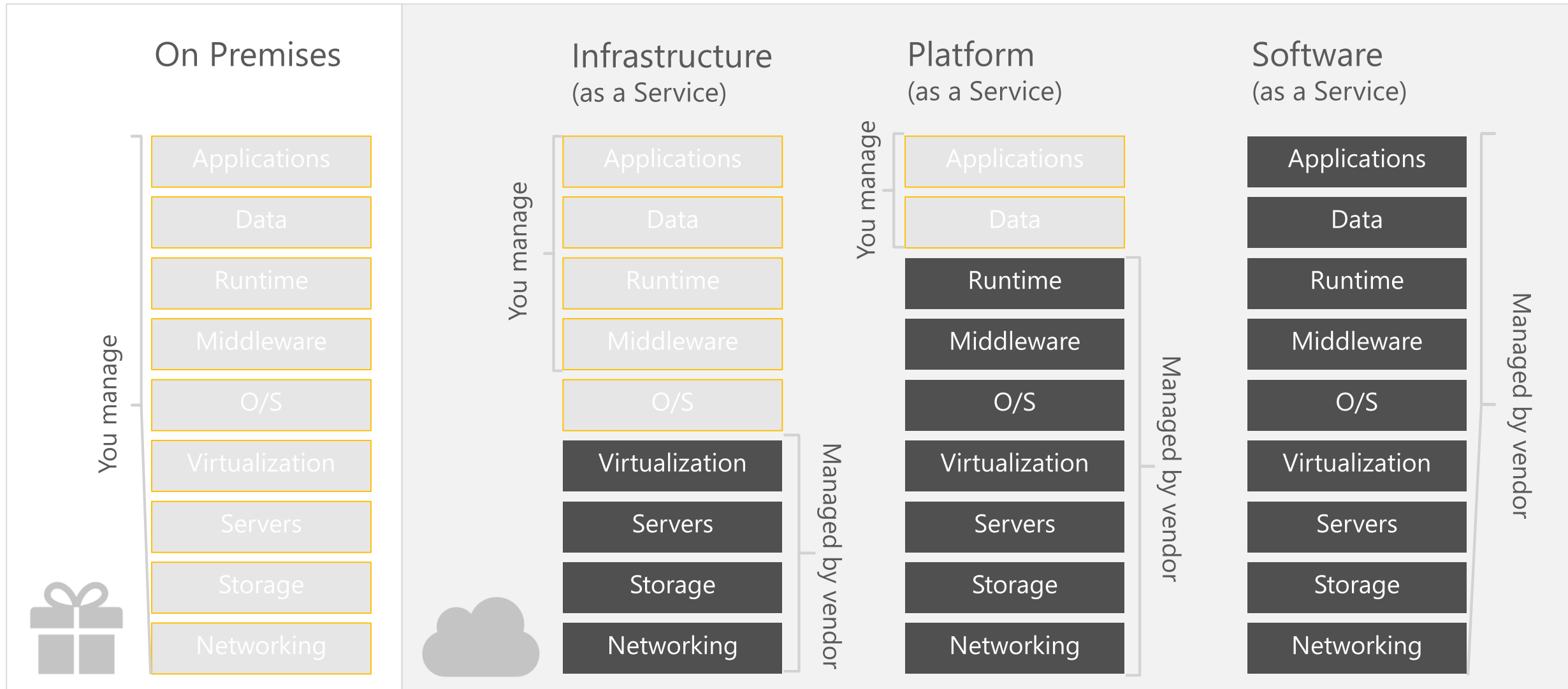


SaaS

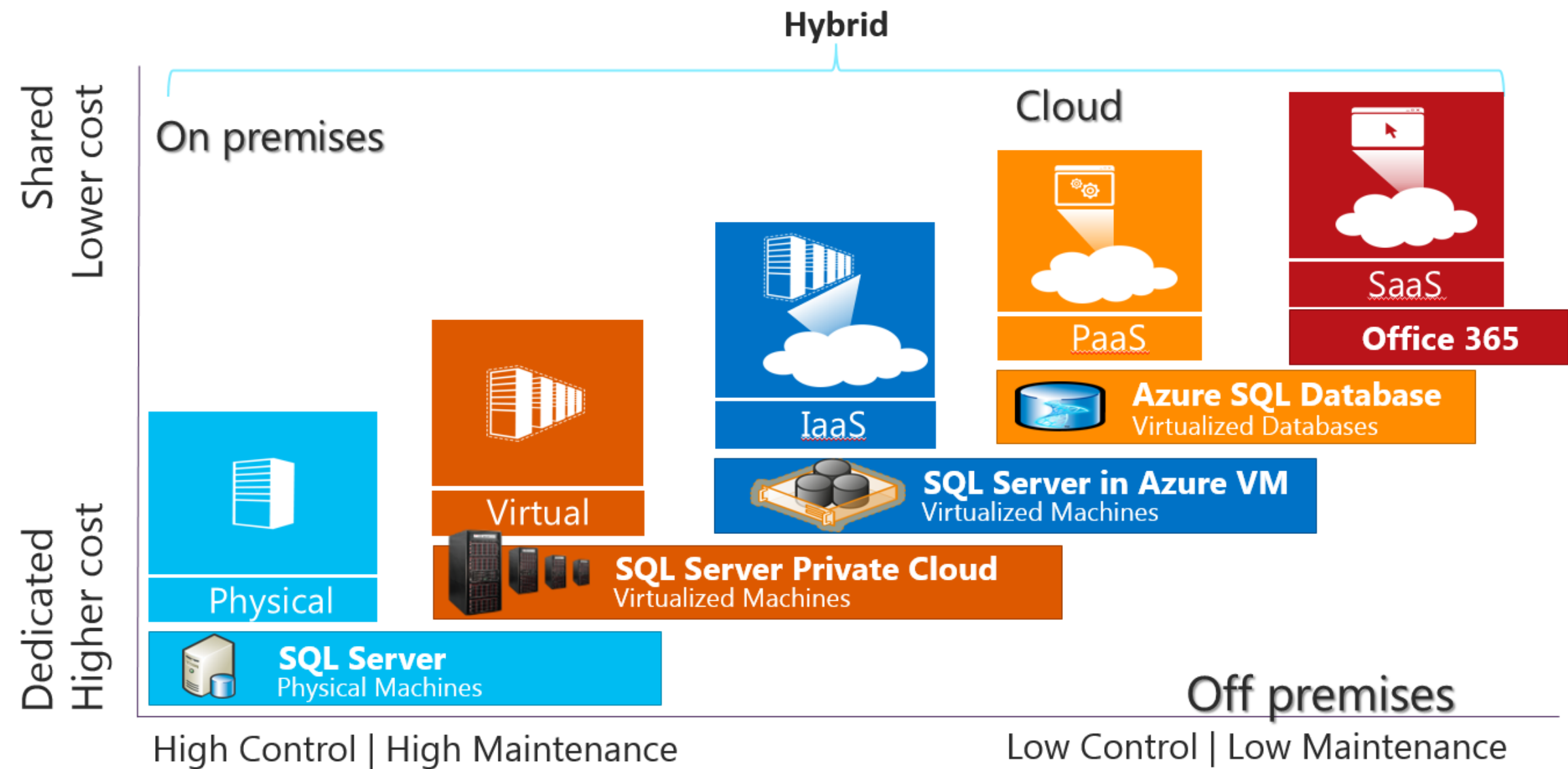
Software-as-a-Service

consume

# Defining these things...



# An Example: SQL Server Cloud Continuum



# Stay informed about your service health: incidents, maintenance, health advisories.

**Azure Service Health** provides personalized guidance and support when issues in Azure services impact your resources.

View a personalized dashboard within the portal, and set up **targeted notifications** to alert you via Email/SMS/Push/Voice/LogicApp/Webhook/etc.

Customize your alerts by triggering them based on:

- Notification type(s): issue/maintenance/advisory
- The subscription affected.
- The service(s) affected.
- The region(s) affected.

In the unlikely event of a service issue impacting Azure Service Health or the Azure portal itself, [status.azure.com](https://status.azure.com) is used to communicate updates.

The image shows two screenshots of the Azure Service Health interface. The top screenshot is the 'Service Health - Service issues' dashboard, which includes a search bar, filters for Subscription (Contoso IT - demo), Region (28 selected), and Service. It features a world map with a tooltip that says 'Tip: Pin a personalized Service Health world map tile on your dashboard.' and a 'DISMISS' button. The bottom screenshot is the 'Service Health - Health history' page, which displays a table of service issues and health advisories. The table has columns for Issue Name, Tracking ID, Event Type, Service(s), Region(s), Start Time, and Updated. The first row shows 'Log Analytics - West Europe' with Tracking ID 'SFJA-PK0' and a start time of '17:42 UTC, 02/07/2018'. The second row shows 'Action Required Regarding Your Azure Backup ser...' with Tracking ID 'G8\_S\_K0' and a start time of '16:02 UTC, 02/07/2018'. Below the table, there is a 'Summary' section for the issue 'SFJA-PK0' and a 'Download the issue summary as a PDF' button.

**Service Health - Service issues**

PREVIEW

Search (Ctrl+ /)

Select filter ...

\* Subscription Contoso IT - demo \* Region 28 selected \* Service

Save filter Delete filter Pin filtered world map to dashboard Create service health alert

Tip: Pin a personalized Service Health world map tile on your dashboard. DISMISS

No service issues found

See all past issues in the health history.

**Service Health - Health history**

PREVIEW

Search (Ctrl+ /)

\* Subscription Contoso IT - demo \* Region 28 selected \* Health Event Type 3 selected \* Time Range Last week

ISSUE NAME	TRACKING ID	EVENT TYPE	SERVICE(S)	REGION(S)	START TIME	UPDATED
Log Analytics - West Europe	SFJA-PK0	Service issue	Log Analytics	West Europe	17:42 UTC, 02/07/2018	5 d ago
Action Required Regarding Your Azure Backup ser...	G8_S_K0	Health advisory	Backup	Australia East...	16:02 UTC, 02/07/2018	5 d ago

Summary Issue updates

Tracking Id  
**SFJA-PK0** [Get a link](#)  
Share this link with your team or use it for reference in your problem management system

Impacted services  
Log Analytics

Impacted regions  
West Europe

Last update (5 d ago)  
SUMMARY OF IMPACT: Between 17:42 UTC on 07 Feb 2018 and 2:30 UTC on 08 Feb 2018, a subset of customers using Log Analytics in West Europe may have experienced processing delays with workspaces hosted in this region. PRELIMINARY ROOT CAUSE: Engineers determined that a backend service became unhealthy causing delays in Log Analytics queries. MITIGATION: Engineers confirmed that the issue self-healed by the Azure Platform. NEXT STEPS: Engineers will continue to investigate to establish the full root cause and prevent future occurrences.  
[See all updates](#)

Download the issue summary as a PDF.

Track this issue on mobile.

Quickly connect with our problem-solving experts.  
[Tweet @AzureSupport](#)

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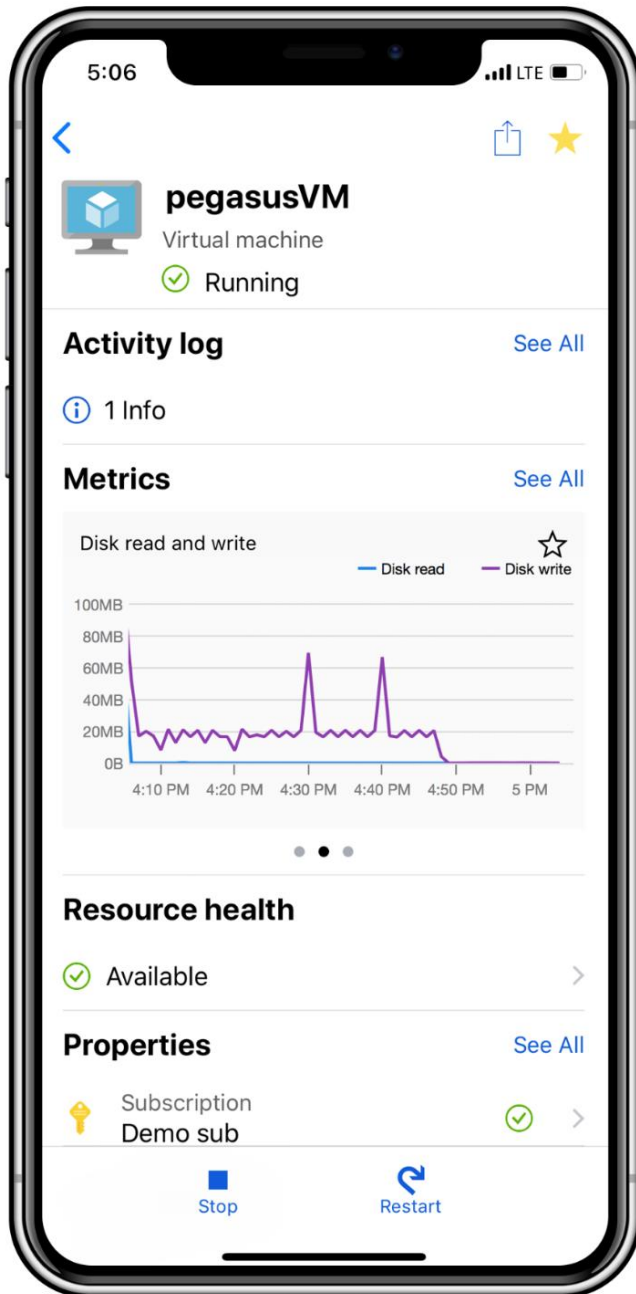
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Track this issue on mobile.

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# Azure mobile app

Stay connected with your Azure resources—anytime, anywhere



## Access resources anywhere

Control your Azure Resources from on your phone or tablet



## Get alerts and notifications

App notifications to easily monitor the status of your resources



## Diagnose and fix issues quickly

Take quick action and respond to issues in real time



## Do more on the go with Cloud Shell

Execute commands and use your saved scripts for unparalleled ability to control your Azure environment anywhere

Download the Azure mobile app for iOS and Android



Learn more about the Azure mobile app: [aka.ms/azuremobileapp/](https://aka.ms/azuremobileapp/)

# AZURE ADVISOR

Your personalized guide to Azure best practices

## Review your personalized recommendations at no cost

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Generated based on your configuration and usage patterns

Available for all your Azure subscriptions in Azure portal\*

View recommendations at no cost \*\*

## Prioritize recommendations and configure Advisor to your needs

---

Assess recommendation impact

Select your Azure resources you care most about

Adjust usage thresholds for low usage virtual machines

Download reports

## Implement recommendations and monitor your progress

---

Implement most critical recommendations for your solutions

Review progress and new recommendations regularly

# Choosing the right level of support

	BASIC	DEVELOPER	STANDARD	PROFESSIONAL DIRECT	PREMIER
		Purchase support	Purchase support	Purchase support	Contact Premier
Scope	Microsoft Azure:  Billing and subscription support; online self-help	Microsoft Azure:  Trial and non-production environments	Microsoft Azure:  Production workload environments	Microsoft Azure:  Business-critical dependence	All Microsoft Products, including Azure:  Substantial dependence across multiple products
Customer Service and Communities	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums	24x7 access to customer service, documentation, whitepapers, and support forums
Best Practices	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations	Access to full set of Azure Advisor recommendations
Health Status and Notifications	Access to <a href="#">personalized Service Health Dashboard &amp; Health API</a>	Access to <a href="#">personalized Service Health Dashboard &amp; Health API</a>	Access to <a href="#">personalized Service Health Dashboard &amp; Health API</a>	Access to <a href="#">personalized Service Health Dashboard &amp; Health API</a>	Access to <a href="#">personalized Service Health Dashboard &amp; Health API</a>
Technical Support		Business hours access <sup>1</sup> to Support Engineers via email	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone	24x7 access to Support Engineers via email and phone
Pricing		\$29/mo	\$100/mo <sup>2</sup>	\$1,000/mo	<a href="#">Contact us</a>

**54** total regions: **42** generally available and **12** coming soon  
Government Cloud, Sovereign Cloud

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# Azure Roadmap and recent releases

# Stay informed of the Azure product roadmap

## [Azure.com/roadmap](https://azure.com/roadmap)

Forward looking; dates and capabilities discussed are subject to change

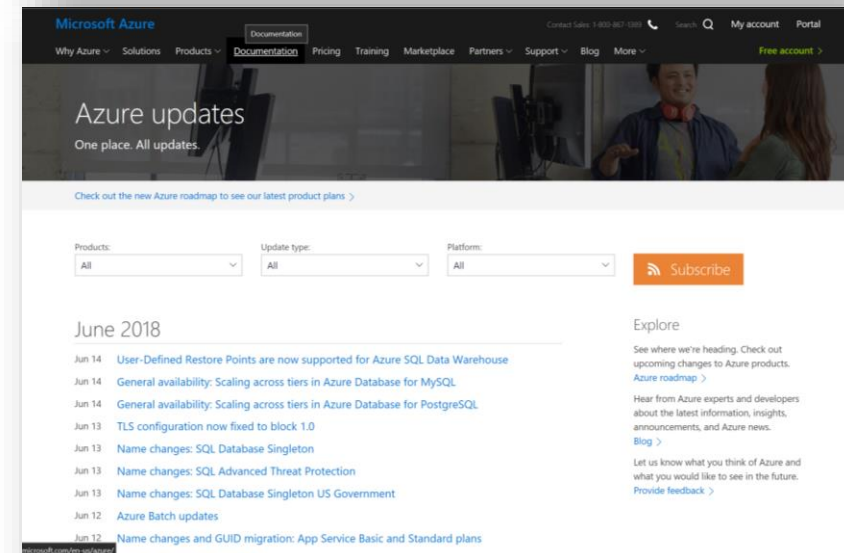
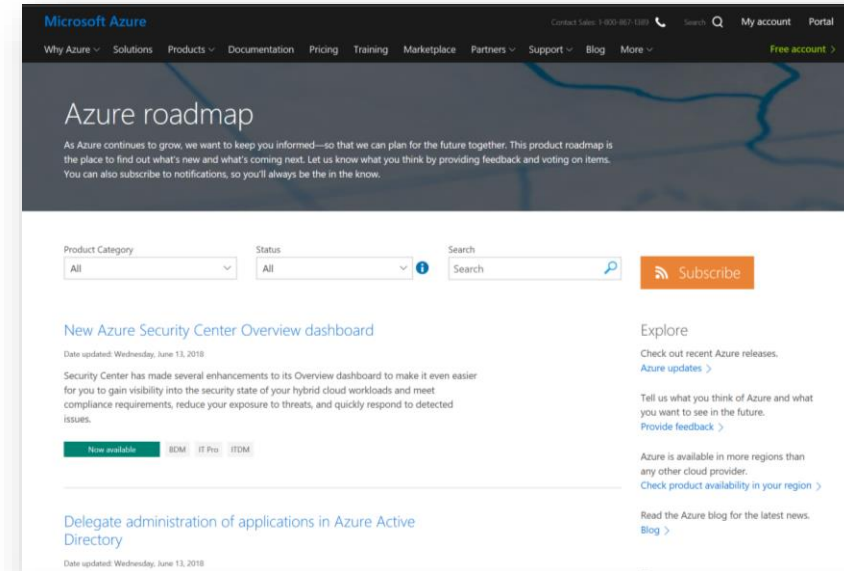
Does not discuss packaging and licensing

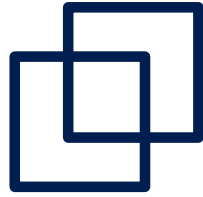
May contain prototype screen captures or concepts for illustrative purposes only

## [Azure.com/updates](https://azure.com/updates)

Release notes for Azure service changes

Includes packaging, licensing and region availability changes





## Productive

- End-to-end development and management tools
- Choice of more than 100 services
- Use any dev tool or language

## Hybrid

- Build and deploy solutions consistently, in public or private cloud
- Enable consistent user experience with common identity
- Optimize and secure your hybrid infrastructure with a holistic view

## Intelligent

- Develop breakthrough apps with built-in intelligence
- Build and deploy custom AI models at scale
- Expand your possibilities with an open platform

## Trusted

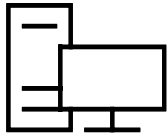
- More certifications than any cloud provider
- More regions than any cloud provider
- Best-in-industry IP protection



# Appendix

1. Azure value proposition
2. Detailed roadmap
3. Products available by region
4. Azure Government

# Leverage a secure and well-managed **infrastructure**



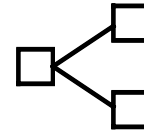
## Compute

Virtual machines  
Availability sets  
VM scale sets  
Controlled maintenance



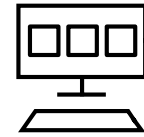
## Storage

Disks  
Blob storage  
File sync  
Hot and cold



## Networking

Virtual networks  
VPN, ExpressRoute  
Load Balancer  
DNS, Traffic Manager



## Management

Log Analytics  
Cloud Shell  
Site Recovery  
Security Center

### Recent announcements





















































[Azure Virtual WAN](#)

[Azure Firewall](#)


[Azure Virtual Machines – M series HANA certification](#)

New

# Open source support

DevOps										
Management										
Applications										
App frameworks & tools										
Databases & middleware										
Infrastructure										

# The only consistent, hybrid cloud

  
Productive

  
Hybrid

  
Intelligent

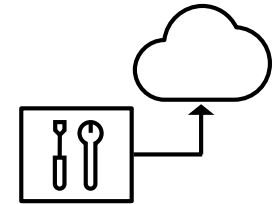
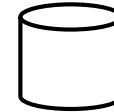
  
Trusted

Azure Active  
Directory

Azure  
services

Azure  
data services

Azure security  
and management

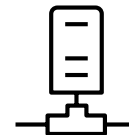
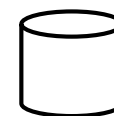


Common  
identity

Unified cloud  
platform

Data  
platform

Security and  
management



Active  
Directory

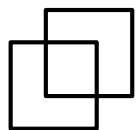
Azure  
Stack

SQL  
Server

On-premises  
infrastructure



Productive



Hybrid

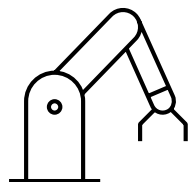


Intelligent

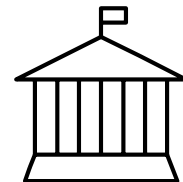


Trusted

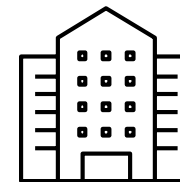
# Azure Stack | an extension of Azure



At the edge  
and disconnected



Meet every regulatory  
requirement



Cloud application  
model on-premises



Productive



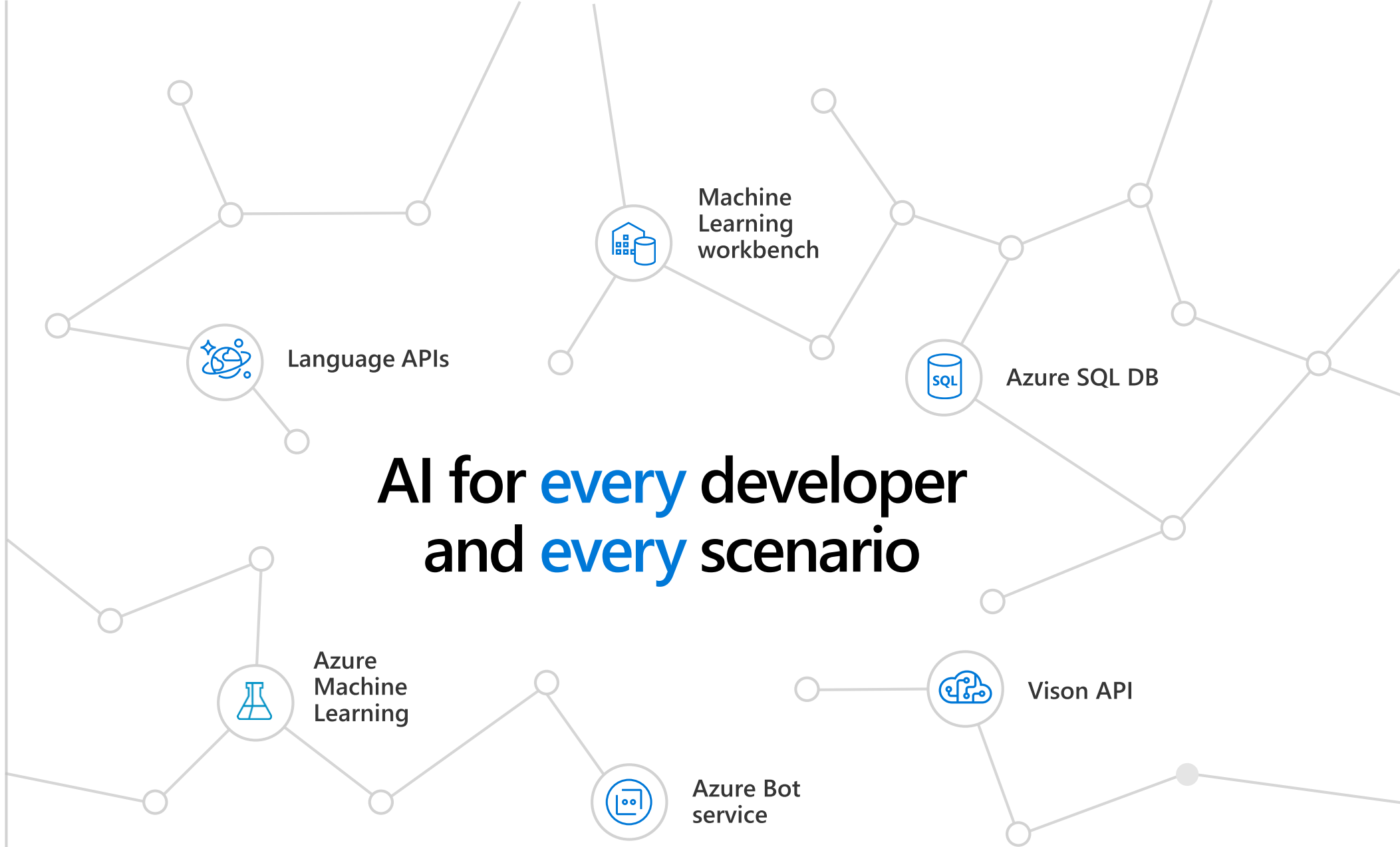
Hybrid



Intelligent



Trusted



# Comprehensive deep learning, machine learning as a service



Productive



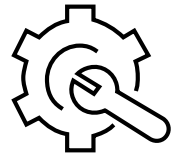
Hybrid



Intelligent



Trusted



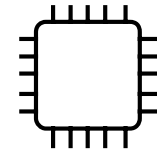
Customizable services

VS, ML STUB, Tensor, Caffe



Tools

Bots, Cognitive, ML



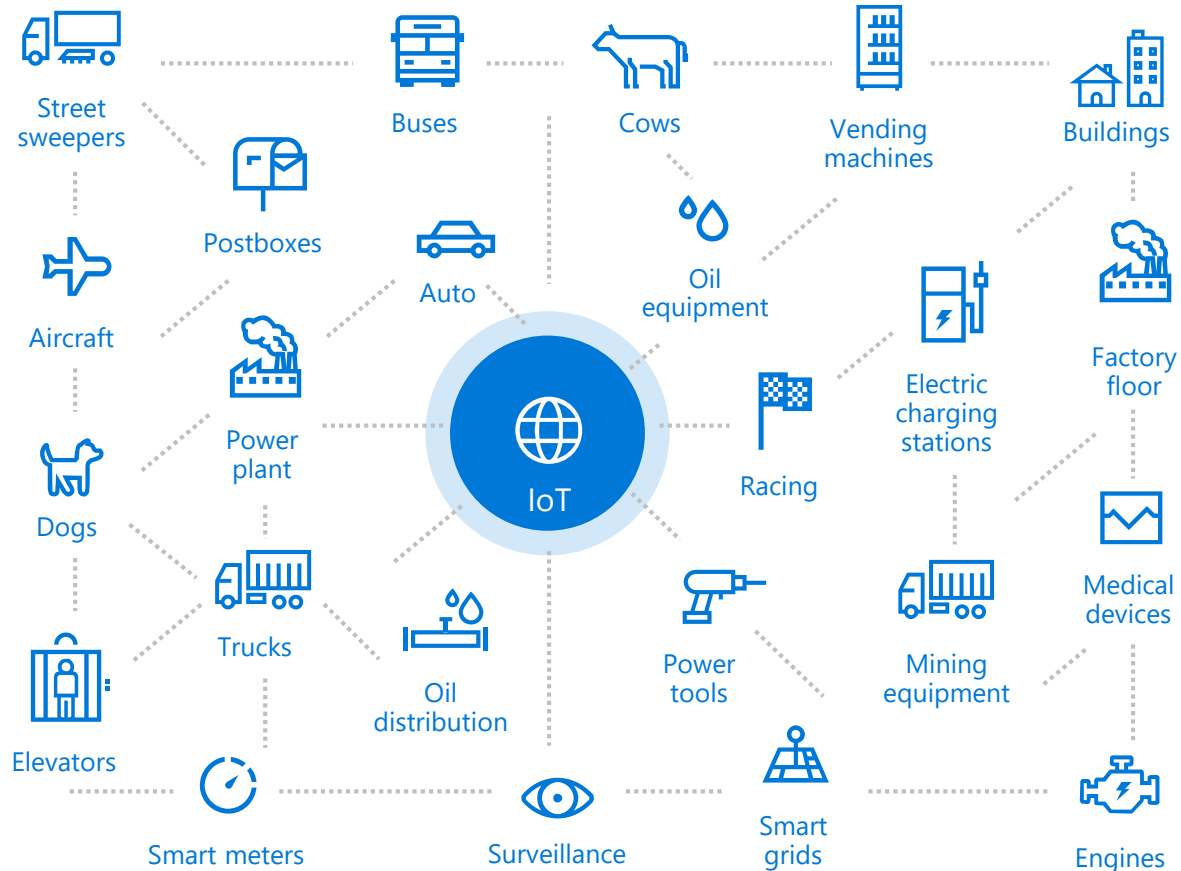
Infrastructure and compute

CPU, GPU, FPGA












## Azure

# Simplify IoT with preconfigured solutions



## Azure IoT Suite

-  Device connectivity & management
-  Data ingestion and command & control
-  Stream processing & predictive analytics
-  Workflow automation and integration
-  Dashboards and visualization
-  Preconfigured solutions
  -  Remote monitoring
  -  Predictive maintenance
  -  Connected factory (new)

# Global opportunity with Azure infrastructure

54 total regions: 42 generally available and 12 coming soon





Productive



Hybrid



Intelligent



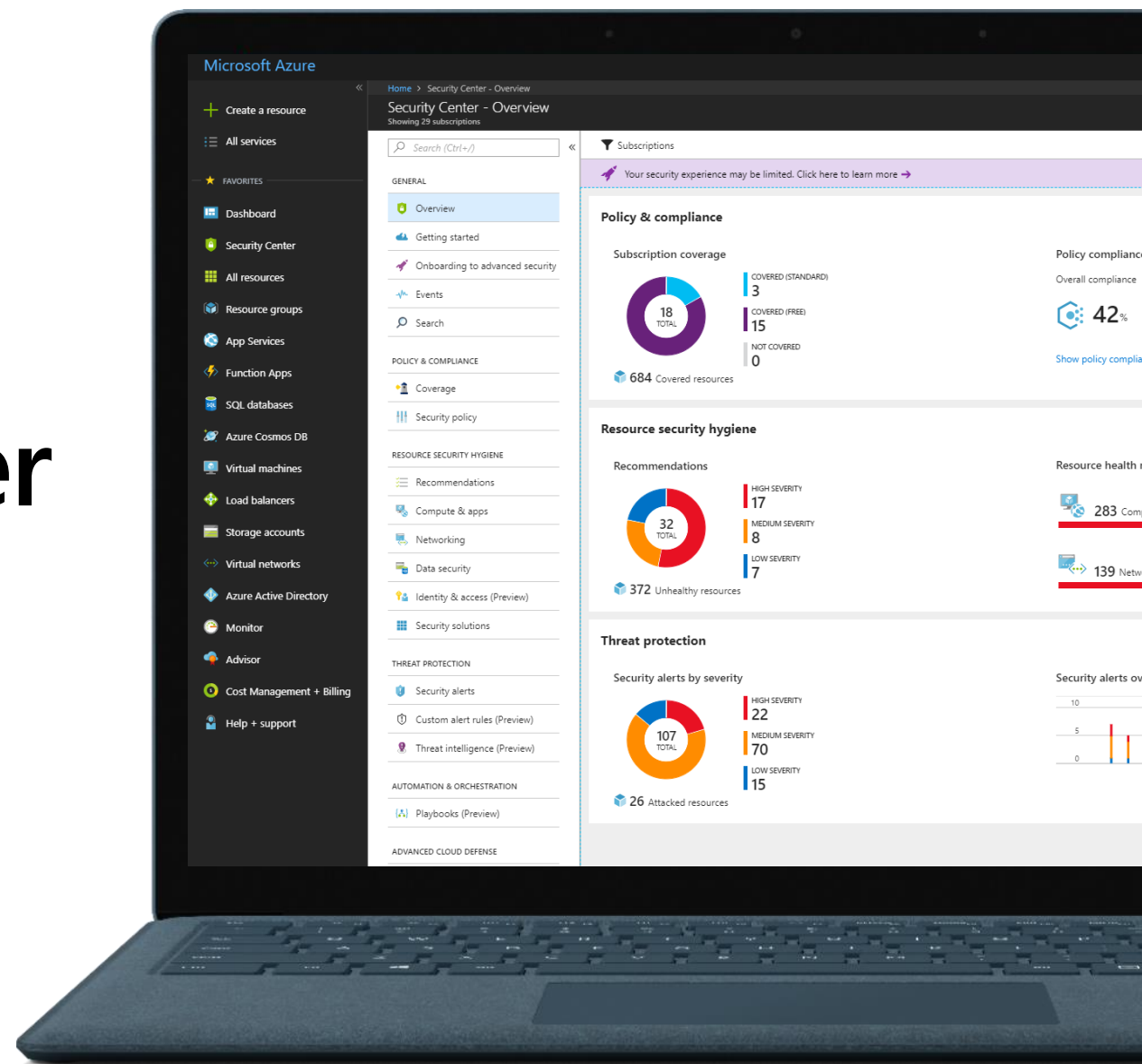
Trusted

# Azure Security Center

Protection through best practices

Detect threats and attacks

Remediate issues



# Azure covers 79 compliance offerings

The deepest and most comprehensive compliance coverage in the industry

Global	<ul style="list-style-type: none"><li>✓ ISO 27001:2013</li><li>✓ ISO 27017:2015</li><li>✓ ISO 27018:2014</li></ul>	<ul style="list-style-type: none"><li>✓ ISO 22301:2012</li><li>✓ ISO 9001:2015</li><li>✓ ISO 20000-1:2011</li></ul>	<ul style="list-style-type: none"><li>✓ SOC 1 Type 2</li><li>✓ SOC 2 Type 2</li><li>✓ SOC 3</li><li>✓ CIS Benchmark</li></ul>	<ul style="list-style-type: none"><li>✓ CSA STAR Certification</li><li>✓ CSA STAR Attestation</li><li>✓ CSA STAR Self-Assessment</li><li>✓ WCAG 2.0</li></ul>
US Gov	<ul style="list-style-type: none"><li>✓ FedRAMP High</li><li>✓ FedRAMP Moderate</li><li>✓ EAR</li></ul>	<ul style="list-style-type: none"><li>✓ DoD DISA SRG Level 5</li><li>✓ DoD DISA SRG Level 4</li><li>✓ DoD DISA SRG Level 2</li><li>✓ DFARS</li></ul>	<ul style="list-style-type: none"><li>✓ DoE 10 CFR Part 810</li><li>✓ NIST SP 800-171</li><li>✓ NIST CSF</li><li>✓ Section 508 VPATs</li></ul>	<ul style="list-style-type: none"><li>✓ FIPS 140-2</li><li>✓ ITAR</li><li>✓ CJIS</li><li>✓ IRS 1075</li></ul>
Industry	<ul style="list-style-type: none"><li>✓ PCI DSS Level 1</li><li>✓ GLBA</li><li>✓ FFIEC</li><li>✓ Shared Assessments</li><li>✓ FISC (Japan)</li><li>✓ APRA (Australia)</li><li>✓ OSFI (Canada)</li></ul>	<ul style="list-style-type: none"><li>✓ FCA + PRA (UK)</li><li>✓ MAS + ABS (Singapore)</li><li>✓ 23 NYCRR 500</li><li>✓ SEC 17a-4</li><li>✓ CFTC 1.31</li><li>✓ FINRA 4511</li></ul>	<ul style="list-style-type: none"><li>✓ SOX</li><li>✓ HIPAA BAA</li><li>✓ HITRUST</li><li>✓ 21 CFR Part 11 (GxP)</li><li>✓ MARS-E</li><li>✓ NHS IG Toolkit (UK)</li></ul>	<ul style="list-style-type: none"><li>✓ NEN 7510:2011 (Netherlands)</li><li>✓ FERPA</li><li>✓ CDSA</li><li>✓ MPAA</li><li>✓ FACT (UK)</li><li>✓ DPP (UK)</li></ul>
Regional	<ul style="list-style-type: none"><li>✓ Argentina PDPA</li><li>✓ Australia IRAP Unclassified</li><li>✓ Australia IRAP Protected</li><li>✓ Canada Privacy Laws</li><li>✓ China GB 18030:2005</li><li>✓ China DJCP (MLPS) Level 3</li></ul>	<ul style="list-style-type: none"><li>✓ China TRUCS / CCCPPF</li><li>✓ EN 301 549</li><li>✓ EU ENISA IAF</li><li>✓ EU Model Clauses</li><li>✓ EU – US Privacy Shield</li><li>✓ GDPR</li><li>✓ Germany C5</li></ul>	<ul style="list-style-type: none"><li>✓ Germany IT-Grundschutz workbook</li><li>✓ India MeitY</li><li>✓ Japan CS Mark Gold</li><li>✓ Japan My Number Act</li><li>✓ Netherlands BIR 2012</li><li>✓ New Zealand Gov CIO Fwk</li></ul>	<ul style="list-style-type: none"><li>✓ Singapore MTCS Level 3</li><li>✓ Spain ENS</li><li>✓ Spain DPA</li><li>✓ UK Cyber Essentials Plus</li><li>✓ UK G-Cloud</li><li>✓ UK PASF</li></ul>

<https://aka.ms/AzureCompliance>

# Appendix

## Azure products

# Azure products

AI + Machine Learning

Analytics

Compute

Containers

Databases

Developer Tools

DevOps

Identity

Integration

Internet of Things

Management Tools

Media

Microsoft Azure Stack

Migration

Mobile

Networking

Security

Storage

Web

Analytics

Gather, store, process, analyze, and visualize data of any variety, volume, or velocity

SQL Data Warehouse

Elastic data warehouse as a service with enterprise-class features

HDInsight

Provision cloud Hadoop, Spark, R Server, Hbase, and Storm clusters

Machine Learning

Open and elastic AI development spanning the cloud and the edge

Data Lake Analytics

Distributed analytics service that makes big data easy

Event Hubs

Receive telemetry from millions of devices

Azure Databricks

Fast, easy, and collaborative Apache Spark-based analytics platform

Data Factory


Hybrid data integration at enterprise scale, made easy

Stream Analytics

Real-time data stream processing from millions of IoT devices

Azure Analysis Services

Enterprise-grade analytics engine as a service



# Azure SQL Data Warehouse

GA  
Released @ //BUILD  
May '18

Compute Optimized Gen 2 is now  
Generally Available

**5 times** the performance of our Gen1 offer

**4 times** the concurrency up to 128 concurrent  
queries – the highest of any cloud data  
warehousing service

**5 times** the compute headroom (over 4000  
compute cores)

**Infinite** storage of columnar data

The fast, flexible, and secure hub for all your data



Fast

Unlimited scale &  
performance



Flexible

Fits your needs

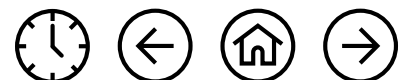


Secure

Trusted. Compliant.  
Reliable.

Seamlessly compatible across Microsoft and  
other leading BI & Data Integration services

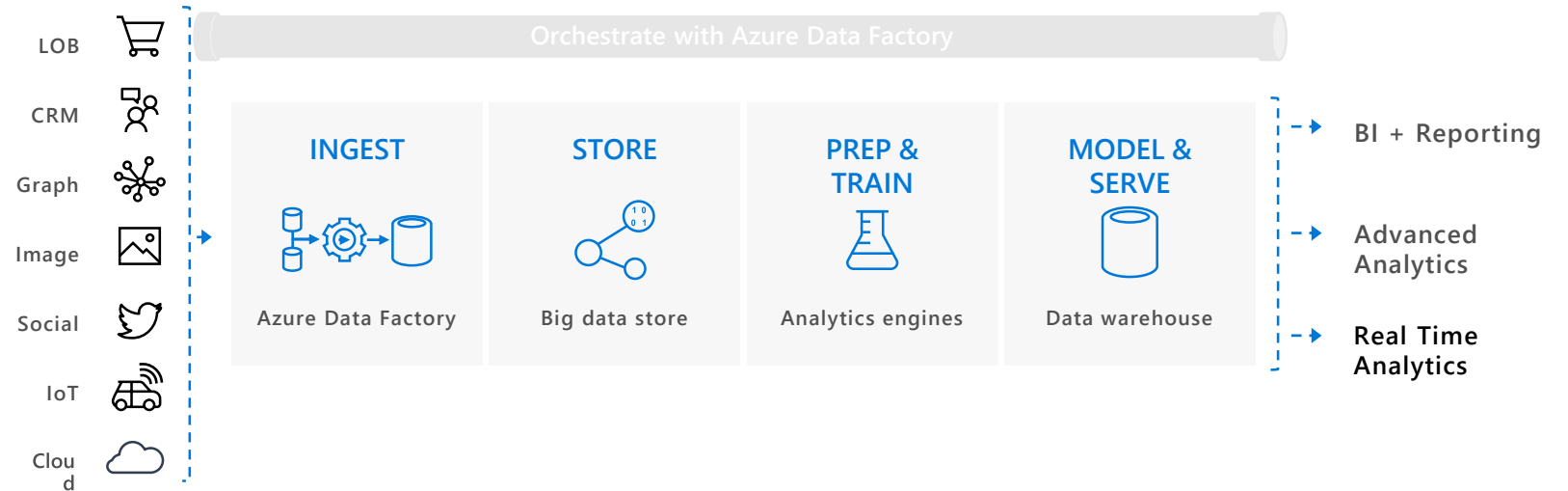
<https://azure.microsoft.com/en-us/blog/turbocharge-cloud-analytics-with-azure-sql-data-warehouse/>



# Azure Data Factory

GA  
Released  
June '18

- Visual drag-&-drop UI
- Multiple Language Support
- SSIS package execution in Azure
- Code-free data movement from over 65 data sources
- Comprehensive control flow capabilities



<https://azure.microsoft.com/en-us/services/data-factory/>

# Enterprise Security Package for HDInsight

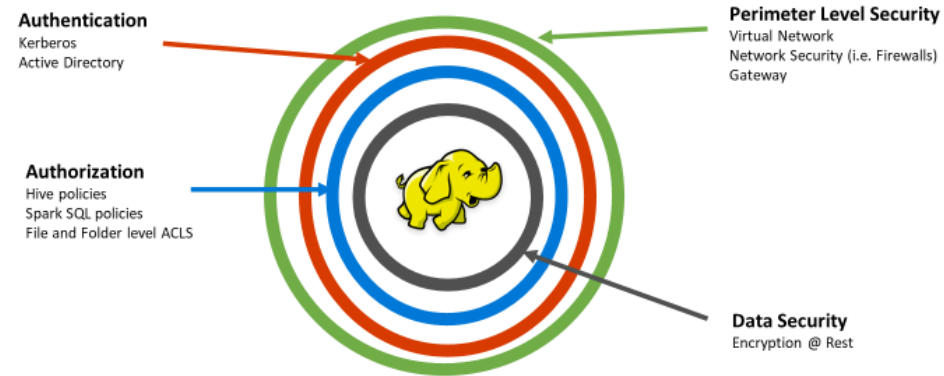
## Enterprise grade security for Hadoop and Spark workloads

- Multi-user authentication using Active Directory or Azure Active Directory.
- Multi-user Zeppelin notebook with collaborative data science experience.
- Role based access control for Ambari operations.
- Fine grained role based access control for Hive SQL and Spark SQL using Apache Ranger.
- Data masking of sensitive data using Apache Ranger.
- Seamless integration with file and folder level ACLs in Azure Data Lake Store.
- Audit all access to sensitive data as well as changes to access policies.
- Transparent server side encryption at rest as well as encryption in transit.

<https://docs.microsoft.com/en-us/azure/hdinsight/hdinsight-domain-joined-introduction>

GA  
ETA  
Q3 CY18

## HDInsight security - Rings of defense



The screenshot shows the Apache Ranger web interface. The top navigation bar includes 'Ranger', 'Access Manager', 'Audit', and 'Settings'. The main content area displays a list of policies for the 'common\_repo' service. The table below represents the data shown in the screenshot.

Policy ID	Policy Name	Status	Audit Logging	Groups	Users	Action
33	all - url	Enabled	Enabled	--	hduser, rangerlookup, ambari-qa	[Edit] [Delete]
34	all - database, table, column	Enabled	Enabled	--	hduser, rangerlookup, ambari-qa	[Edit] [Delete]
35	all - database, udf	Enabled	Enabled	--	hduser, rangerlookup, ambari-qa	[Edit] [Delete]
107	Access to srrendemo	Enabled	Enabled	hadoopusers	admin, hduser	[Edit] [Delete]
108	SupplierTable	Enabled	Enabled	hadoopusers	--	[Edit] [Delete]
151	devicemodel	Enabled	Enabled	hadoopusers	--	[Edit] [Delete]

# Azure products

AI + Machine Learning

Analytics

Compute

Containers

Databases

Developer Tools

DevOps

Identity

Integration

Internet of Things

Management Tools

Media

Microsoft Azure Stack

Migration

Mobile

Networking

Security

Storage

Web

Compute

Access cloud compute capacity and scale on demand—and only pay for the resources you use

Virtual Machines

Provision Windows and Linux virtual machines in seconds

Azure Kubernetes Service (AKS)

Simplify the deployment, management, and operations of Kubernetes

Service Fabric

Develop microservices and orchestrate containers on Windows or Linux

Container Instances

Easily run containers with a single command

Azure Batch AI

Easily experiment and train your deep learning and AI models in parallel at scale

Virtual Machine Scale Sets

Manage and scale up to thousands of Linux and Windows virtual machines

Functions


Process events with serverless code

App Service

Quickly create powerful cloud apps for web and mobile

Batch

Cloud-scale job scheduling and compute management



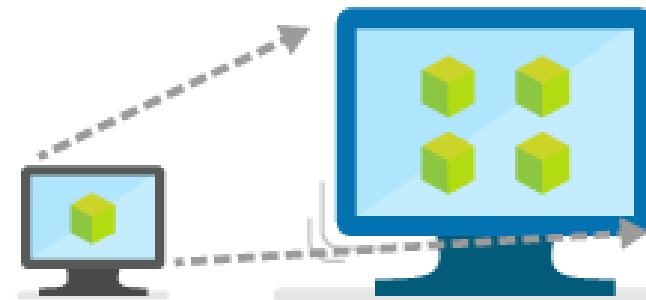
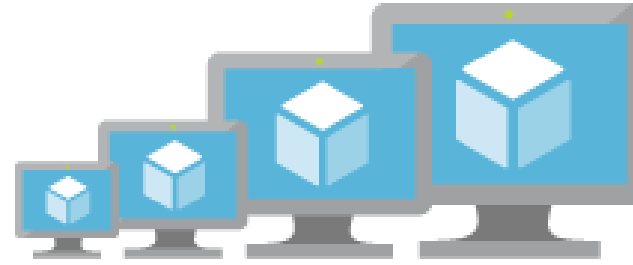
# New VM Scale Sets enhancements

With VM Scale Sets, you can confidently deploy thousands of identical Virtual Machines in minutes and focus on what matters: your application.

- Provides auto scale-out and scale-in based on health checks
- Enables easy integration with Azure SLB or App Gateway
- Auto-OS image update for guest images
- Deploy low-priority VMs and realize cost savings
- Support for cross-zone deployment

<https://azure.microsoft.com/en-us/updates/public-preview-low-priority-vm-scale-sets/>

Public Preview  
Released  
Apr '18

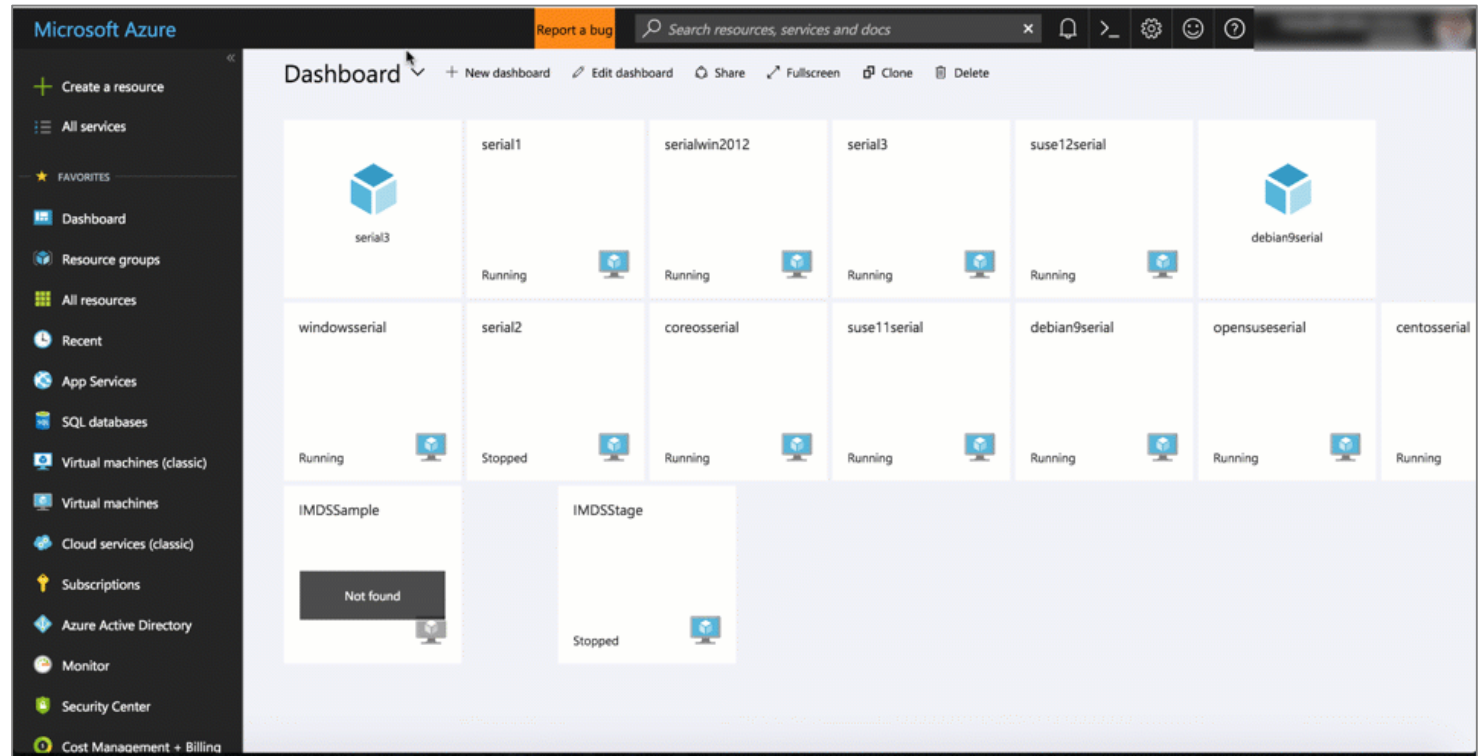


# Serial Console

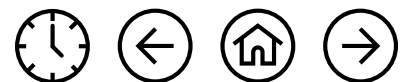
Public Preview  
Released  
Apr '18

With Serial Console in the Azure portal, developers get a full view of the machine's boot process, making managing and securing your VMs easier.

- Supports DevOps: Ansible, Chef, & Puppet
- Works with Windows and Linux
- Easier troubleshooting
- Convenient and secure access
- Faster time to value



<https://azure.microsoft.com/en-us/blog/virtual-machine-serial-console-access/>



# VM services recently introduced

GA/Preview  
Updates  
May '18

[SAP HANA on Azure](#): new M-series VM certification.

- Largest memory-optimized VM to date.

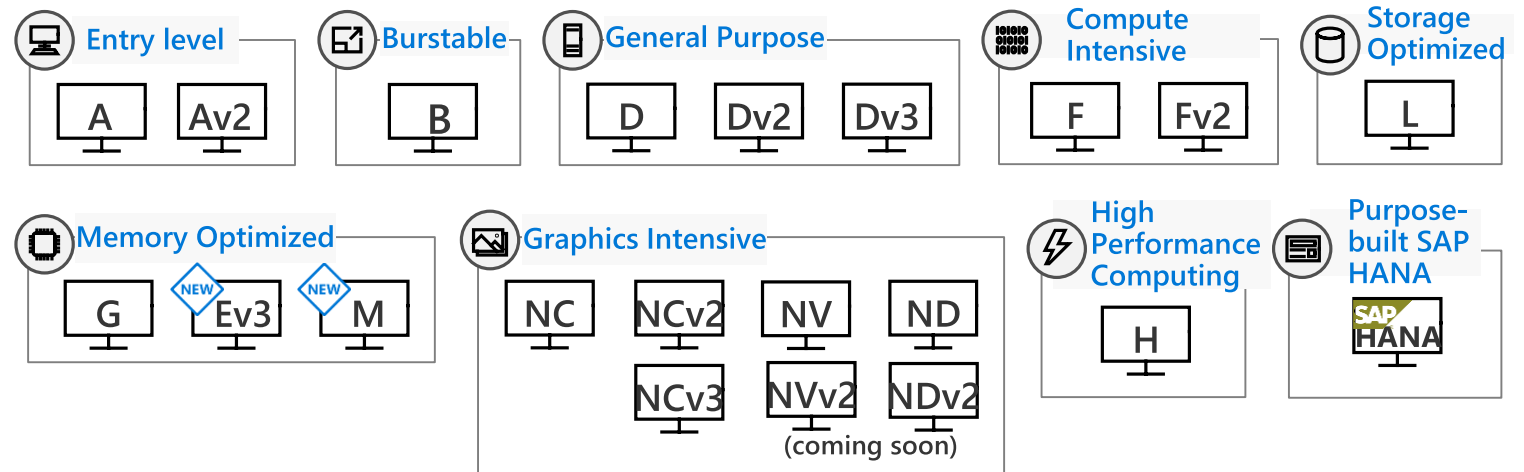
**New E-series VMs to meet compliance and regulatory requirements**

- The new E64i\_v3 and E64is\_v3 VMs are isolated to hardware and dedicated to a single customer.

**Continued expansion of the N-series VM portfolio**

- NCv3 VMs bring NVIDIA's latest GPU to our best-in-class HPC, machine learning, and AI products.
- Additional NVv2 (for graphic intensive applications) and NDv2 (to accelerate machine training and HPC) VMs are on the roadmap.

<https://azure.microsoft.com/en-us/services/virtual-machines/>



# M-Series Virtual Machines

Bringing Massive Memory, CPU, Storage and Scale for demanding workloads and many now certified for SAP HANA

## Featuring

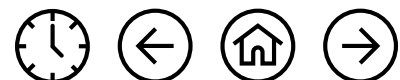
- Hyper-Threaded support
- Premium Storage support
- Based on Intel® Xeon® Processor E7-8890 v3
- High Performance DDR4 memory
- Support Nested Virtualization with Windows Server 2016
- SAP Certified for HANA and NetWeaver on AnyDB
- High performance Write-Accelerator

<https://docs.microsoft.com/en-us/azure/virtual-machines/workloads/sap/sap-certifications>

HANA Cert  
Released  
May '18

VM Size	vCPUs	RAM (TB)	Local SSD (TB)	Persistent Data Disks-Max	Networking Bandwidth	General Availability	SAP HANA Certified
M8ms	8	.219	.250	4	Extremely High	US/EU/ASIA**	No
M16ms	16	.438	.500	8	Extremely High	US/EU/ASIA**	No
M32ts	32	.192	1	16	Extremely High	US/EU/ASIA**	Yes
M32ls	32	.256	1	16	Extremely High	US/EU/ASIA**	Yes
M32ms	32	.875	1	16	Extremely High	US/EU/ASIA**	No
M64ls	64	.512	2	32	Extremely High	US/EU/ASIA**	Yes
M64s	64	1.0	2	32	Extremely High	US/EU/ASIA**	Yes
M64ms	64	1.75	2	32	Extremely High	US/EU/ASIA**	Yes
M128s	128	2.0	4	64	Extremely High	US/EU/ASIA**	Yes
M128ms	128	4.0	4	64	Extremely High	US/EU/ASIA**	Yes

\*\* For the latest details on M-series VM region availability roadmap, and the planned 6TB and 12TB M-Series VMs, see the current [C+E Field Alert](#)



# Azure Service Fabric

Private Preview  
Launched @ //BUILD  
May '18

## Introducing Service Fabric mesh available in Private Preview

- Build business-critical microservice applications
- Deploy and run applications securely using a fully-managed platform
- Experience low latency and high throughput at scale

Public Preview ETA – July '18

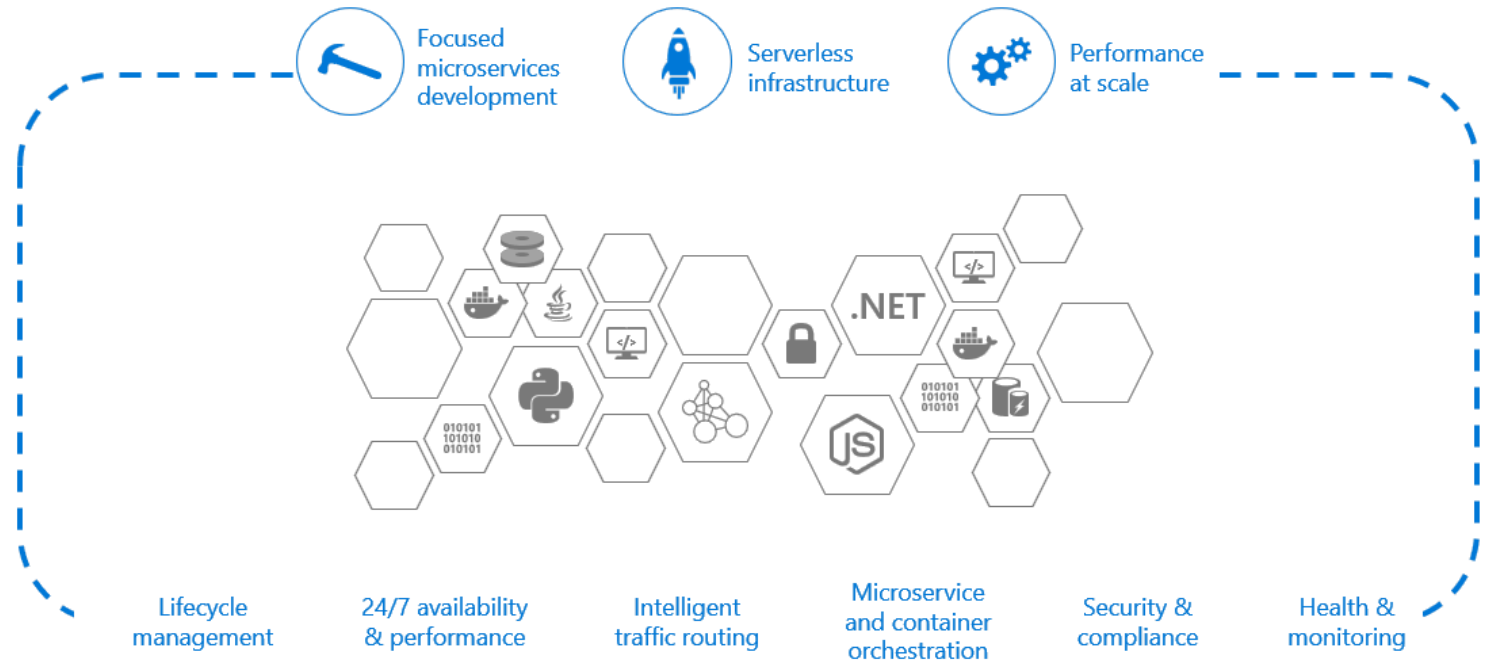
[Read the //Build Announcement](#)

[Sign up for the preview](#)



## Azure Service Fabric Mesh

A fully managed microservices platform for business critical applications



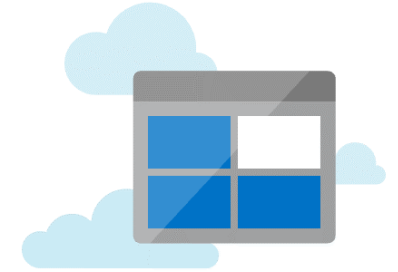
# New Azure Standard SSD Offering

Public Preview  
Released  
Jun '18

Standard SSD is a low-cost Azure Managed Disk solution optimized for entry-level production workloads requiring consistent latency.

- Delivers better availability and latency compared to HDD Disks.
- Consistent performance for low IOPS workloads.
- Works with all Azure VMs.
- Use cases: Web servers, low IOPS application servers, entry-level enterprise applications and Dev/Test scenarios.

<https://azure.microsoft.com/en-us/blog/preview-standard-ssd-disks-for-azure-virtual-machine-workloads/>



# Azure Functions

Preview/GA  
Update ETA  
Sep/Oct '18

## Functions on Linux – Preview ETA Sept '18

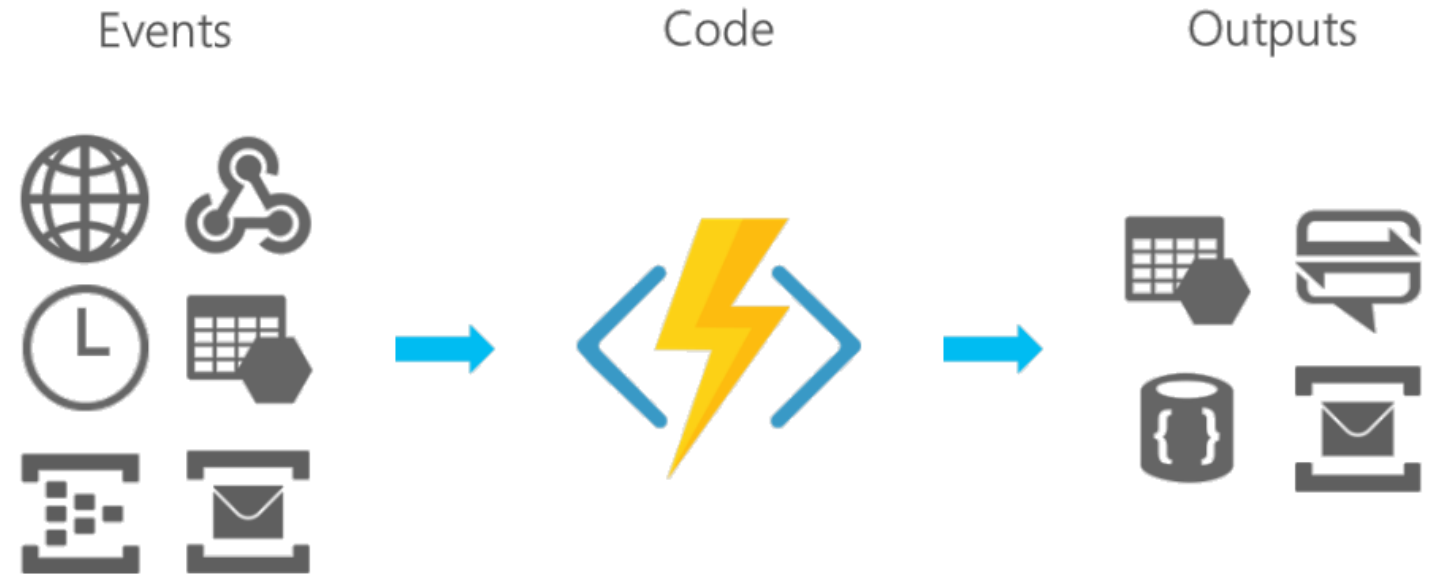
Run Functions code on Linux in addition to already supported Windows  
Utilize newer application stacks which are optimized for the Linux operating system (e.g. **Python support**)

## .NET Core 2.0 support – GA ETA Sept '18

Customers will be able to use their cross platform .NET core assets within their Functions apps. This will also allow developers to develop Azure Functions locally on all major platforms - Windows, Mac and Linux

## Java support – GA ETA Oct '18

Azure Functions will now provide a viable option for open source developers who want to build serverless apps using Java



<https://azure.microsoft.com/en-us/services/functions/>

# Azure Batch improvements

GA  
ETA  
Jul '18

Easy to use popular compute frameworks on Batch without writing code

Support for the new GPU VMs for rendering, compute, and deep learning

Support for Virtual Machine Extensions

Docker Support

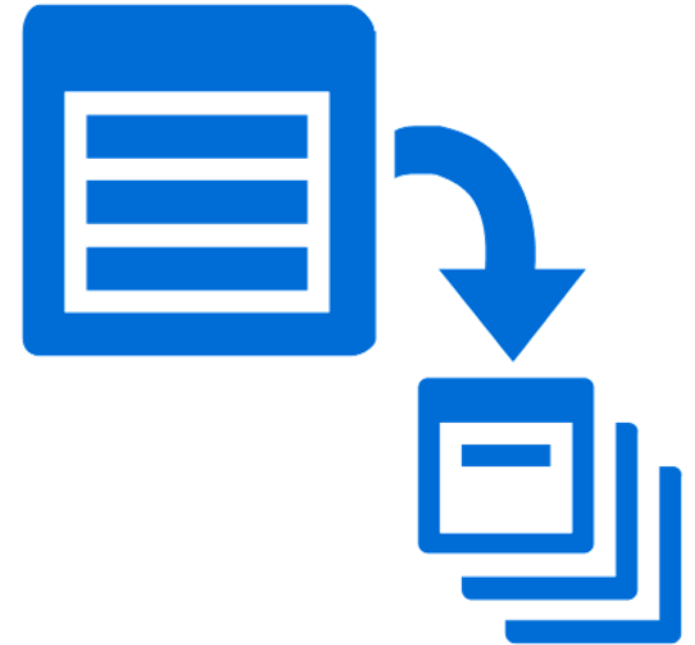
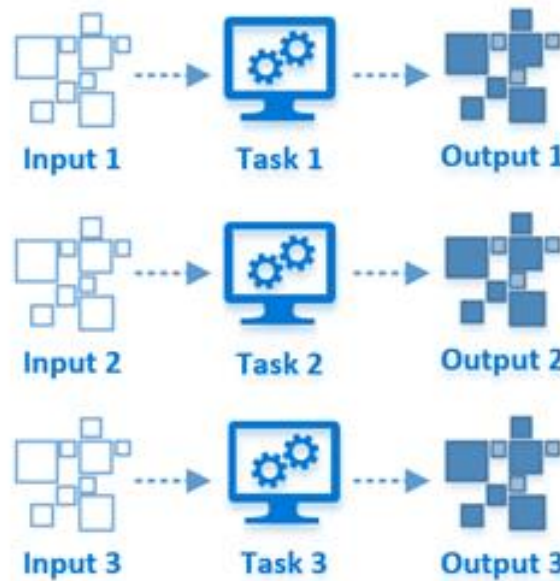
Azure Alerts support to better integrate with Azure monitoring and notification services

## Recent updates:

[Azure Batch Rendering V-Ray](#) – GA – Mar '18

## Coming soon:

[Batch AI](#) – GA ETA – July '18



<https://azure.microsoft.com/en-us/services/batch/>

# Azure products

AI + Machine Learning	Management Tools
Analytics	Media
Compute	Microsoft Azure Stack
Containers	Migration
Databases	Mobile
Developer Tools	Networking
DevOps	Security
Identity	Storage
Integration	Web
Internet of Things	

## Containers

Develop and manage your containerized applications faster with integrated tools

### Azure Kubernetes Service (AKS)

Simplify the deployment, management, and operations of Kubernetes

### Container Instance

Easily run containers with a single command

### Service Fabric

Develop microservices and orchestrate containers on Windows or Linux

### Container Registry

Store and manage container images across all types of Azure deployments

### App Service


Quickly create powerful cloud apps for web and mobile

### Web App for Containers

Easily deploy and run containerized web apps that scale with your business

### Batch

Cloud-scale job scheduling and compute management



# Azure products

AI + Machine Learning

Analytics

Compute

Containers

Databases

Developer Tools

DevOps

Identity

Integration

Internet of Things

Management Tools

Media

Microsoft Azure Stack

Migration

Mobile

Networking

Security

Storage

Web

Databases

Support rapid growth and innovate faster with secure, enterprise-grade, and fully managed database services

Azure Cosmos DB

Globally distributed, multi-model database for any scale

Azure SQL Database

Managed relational SQL Database as a service

Azure Database for MySQL

Managed MySQL database service for app developers

Azure Database for PostgreSQL

Manage PostgreSQL database service for app developers

SQL Server on Virtual Machines

Host enterprise SQL Server apps in the cloud

SQL Data Warehouse

Elastic data warehouse as a service with enterprise-class features

Azure Database Migration Service


Simplify on-premises database migration to the cloud

Redis Cache

Power applications with high-throughput, low latency data access

SQL Server Stretch Database

Dynamically stretch on-premises SQL Server databases to Azure



# Azure Cosmos DB



GA  
Updates  
H2 CY18/H1 CY19

Azure Cosmos DB is Microsoft's globally distributed, multi-model database. With the click of a button, Azure Cosmos DB enables you to elastically and independently scale throughput and storage across any number of Azure's geographic regions.

## Released:

- Data Explorer – GA April '18
- Storage Explorer – GA April '18
- VNET- GA May '18
- Provision throughput for a set of containers collectively – Preview May '18
- Azure Cosmos DB BulkExecutor library – Preview May '18

## Upcoming:

- New SQL API query functionality (better performance and new geospatial functionality) – H2 CY18
- Mongo DB aggregation pipeline GA - H1 CY19



<https://azure.microsoft.com/en-us/services/Cosmos DB/>

# Azure SQL Database improvements

Public Preview/GA  
Updates/ETA  
Q1 CY18 – Q3 CY18

## Released:

[Additional Standard tier performance levels](#) – GA Apr '18

[Read scale-out support](#) – Public Preview Apr '18

[Vulnerability Assessment](#) / SQL Advanced Threat Protection – GA May '18

[Transparent Data Encryption with Azure Key Vault](#) – GA May '18

[Storage add-ons](#) – GA Jun '18

[Zone Redundancy](#) – GA Jun '18

[Data Sync](#) – GA Jun '18

[Auto-failover](#) – GA Jul '18

[New vCore-based purchasing model](#) – GA Jul '18

[Long term backup retention](#) – GA Jul '18

## Upcoming:

Always Encrypted with TEE - Public Preview ETA Q3 CY18

Adaptive Query Processing Updates – Public Preview ETA Q3 CY18

[SQL Database Managed Instance General Purpose](#) – GA ETA Q3 CY18

SQL Database Reserved Instances – ETA Aug '18

[SQL Database Managed Instance Business Critical](#) - Public Preview ETA Q3 CY18

SQL Database with Machine Learning Services - Public Preview ETA Q3 CY18

## SQL Database Managed Instance Business Critical Preview – Jul '18

The business critical performance tier is now available to [Azure SQL Database Managed Instance](#). Designed for mission-critical business apps with high I/O requirements, business critical supports high availability with the highest level of storage and compute redundancy. Additionally, save more during this preview with [Azure Hybrid Benefit for SQL Server](#), which provides up to 55 percent off the license-included full price when you apply it.



<https://azure.microsoft.com/en-us/services/sql-database/>

# Vulnerability Assessment

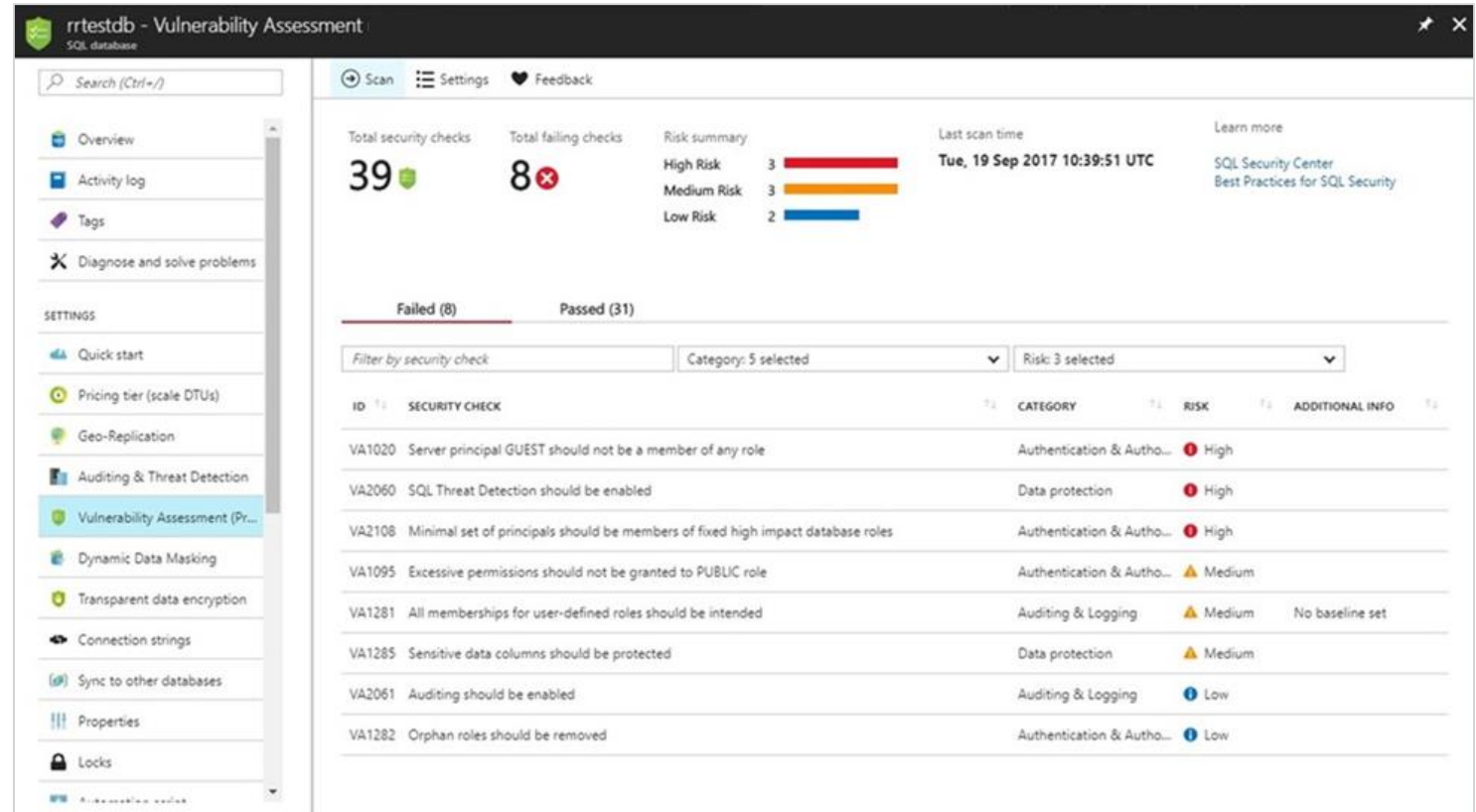
GA  
Released  
May '18

A one-stop-shop to identify and resolve potential SQL security vulnerabilities

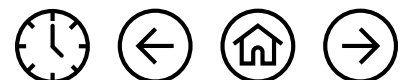
Scan for vulnerabilities and security-related settings that deviate from security best practices

Receive an easy-to-understand report which can be used for internal and external audits and help meet compliance requirements

New SQL Advanced Threat Protection experience provides a unified security package including Threat Detection, Vulnerability Assessment and Information Protection



<https://docs.microsoft.com/en-us/azure/sql-database/sql-vulnerability-assessment>



# TDE with Azure Key Vault

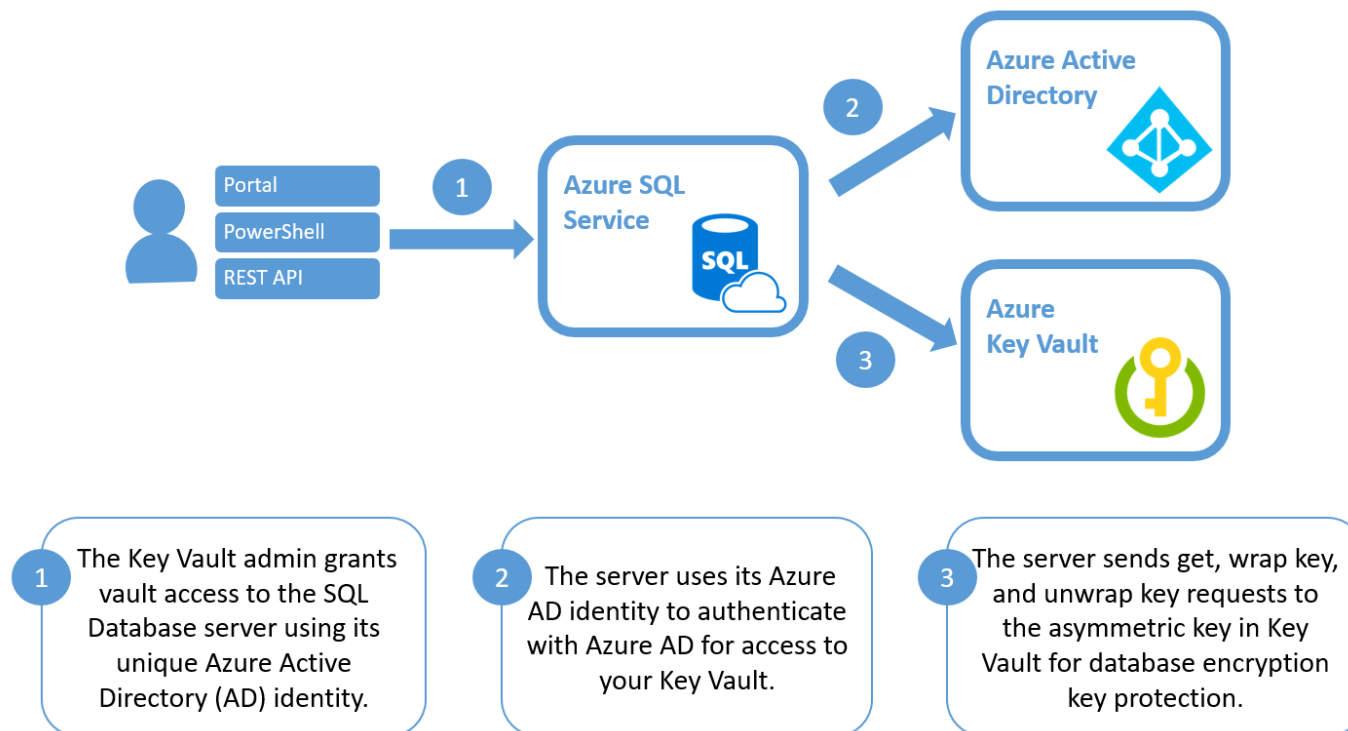
Assume more control over who has access to your data and when

Highly available and scalable cloud-based key store

Central key management that allows separation of key management and data

Enabled via Azure Portal, PowerShell and REST API

GA  
Released  
May '18



<https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/transparent-data-encryption-byok-azure-sql>

# Azure Database Migration Service

Confidently migrate databases with Azure Database Migration Service

- **Seamless, end-to-end solution** for moving relational databases to the cloud.
- **Near-zero** downtime as you migrate your business-critical apps.
- Migrate **at scale** from multiple sources to your target database.

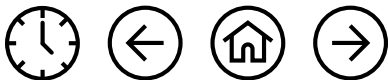
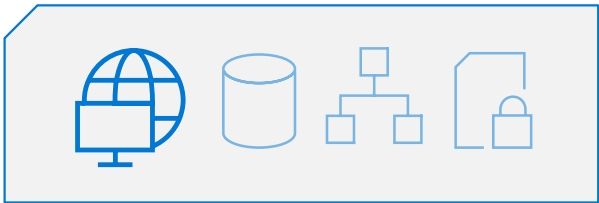
<https://azure.microsoft.com/en-us/services/database-migration/>

GA  
Released @ //BUILD  
May '18

## Scenarios



Source	Target	Status
SQL Server	Azure SQL Database (single/elastic)	In preview
<b>SQL Server</b>	<b>Azure SQL Database Managed Instance</b>	<b>GA</b>
SQL Server	SQL Server in Azure VMs	In preview
MySQL	Azure Database for MySQL	In preview
PostgreSQL	Azure Database for PostgreSQL	In preview
MongoDB, Cassandra	Cosmos DB	In preview
Oracle	SQL Server in Azure VMs Azure SQL Database	In preview



# Zone Redundancy in SQL Database Premium tier databases and pools

Promote greater fault resiliency with replicas across different availability zones

Create multiple redundant replicas for each database within a region

Use Azure portal, PowerShell or REST API for easy configuration

Initially available in East US2, Central US, West Europe and France Central regions, with additional regions added over time

<https://azure.microsoft.com/en-us/blog/azure-sql-database-now-offers-zone-redundant-premium-databases-and-elastic-pools/>

GA  
Released  
Jun '18

The screenshot shows the 'Configure performance' page for an Azure SQL Database. The left sidebar contains configuration options: Database name (ZRTTest), Subscription (sashan-zrtest), Resource group (Use existing), Select source (Blank database), Server (sashan-zrtest (Central US)), Want to use SQL elastic pool? (Not now), Pricing tier (Standard S3: 100 DTU, 250 GB), and Collation (SQL\_Latin1\_General\_CP1\_CI\_AS). The main panel shows three pricing tiers: Basic, Standard, and Premium. The Premium tier is selected, showing 125-4000 DTU and a monthly cost of 465.00 USD. Below this, there are sliders for DTU and Storage, and a checkbox for 'Would you like to make this database zone redundant?'. The 'Yes' radio button is selected, indicated by a red arrow. At the bottom, there is a 'Create' button and a link to 'Automation options'.

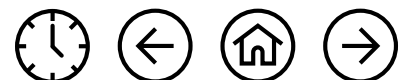
Tier	DTU Range	Starting Price (USD/month)
Basic	5 DTU	4.99
Standard	10-3000 DTU	15.00
Premium	125-4000 DTU	465.00

Would you like to make this database zone redundant?

☒ Yes ☐ No

Monthly cost: 465.00 USD

Preview terms: Please accept preview terms to use the Zone Redundant Azure SQL Database.



# Data Sync

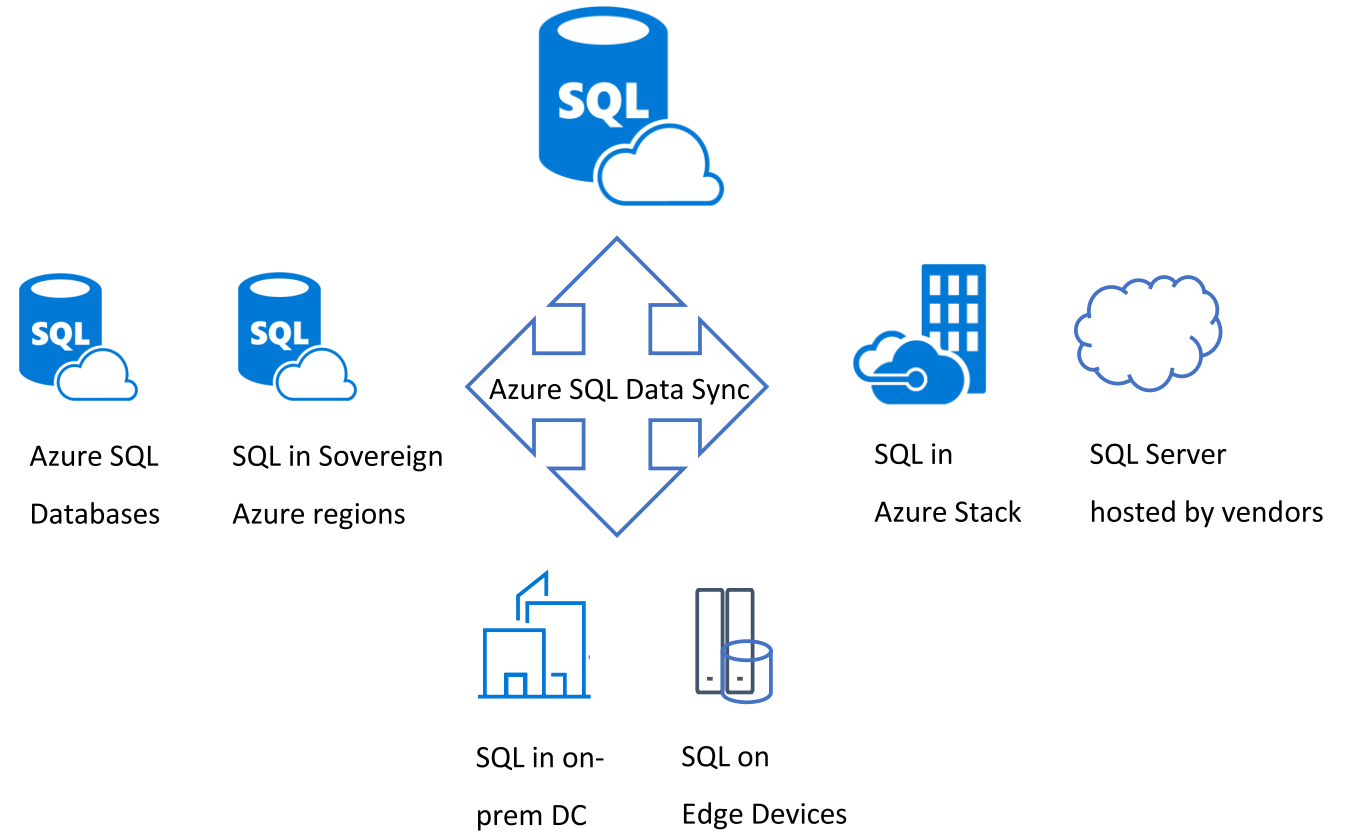
GA  
Released  
Jun '18

Sync data across multiple cloud and on-premises databases

Enable bi-directional syncing between Azure SQL Databases and SQL Server instances

Gain better privacy and security with your own sync database

Create and update sync groups with PowerShell and REST APIs



<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-sync-data>

# Long term backup retention

More flexibility and protection for your backups

Supported in all Azure regions

Customizable backup frequency with flexible retention policies

Higher data protection with RA-GRS storage

Individually-managed database backups

GA  
Released @ INSPIRE  
Jul '18

The screenshot displays the Azure portal interface for configuring long-term backup retention on a SQL server named 'testserver1'. The left sidebar shows the navigation menu with 'Long-term retention' selected. The main pane is titled 'testserver1 - Long-term retention' and contains a table of databases with checkboxes for retention. The 'Configure retention' dialog is open on the right, showing settings for weekly, monthly, and yearly backups.

NAME	WEEKLY BACKUPS	MONTHLY BACKUPS
<input checked="" type="checkbox"/> testdb1	--	--
<input checked="" type="checkbox"/> testdb2	--	--
<input type="checkbox"/> testdb3	--	--
<input type="checkbox"/> testdb4	--	--
<input type="checkbox"/> testdb5	--	--
<input type="checkbox"/> testdb6	--	--
<input type="checkbox"/> testdb7	--	--
<input type="checkbox"/> testdb8	--	--
<input type="checkbox"/> testdb1	--	--
<input type="checkbox"/> testdb2	--	--
<input type="checkbox"/> testdb3	--	--
<input type="checkbox"/> testdb4	--	--
<input type="checkbox"/> testdb5	--	--

**Configure retention**  
Long-term backup retention

These settings will only apply to newly created backups. Click here to learn more about retention settings.

☒ **Weekly backups**

How long would you like weekly backups to be kept?  
1 Week(s)

☐ **Monthly backups**

How long should the first backup of each month be kept?  
0 Week(s)

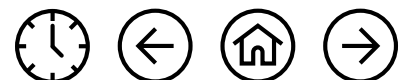
☐ **Yearly backups**

Which weekly backup would you like to retain?  
1st week

How long should this annual backup be kept?  
0 Week(s)

Apply Cancel

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-long-term-retention>



# Auto-failover groups

Automatically manage geo-replication relationships, connectivity and failover at scale

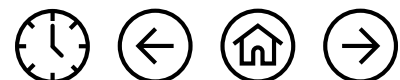
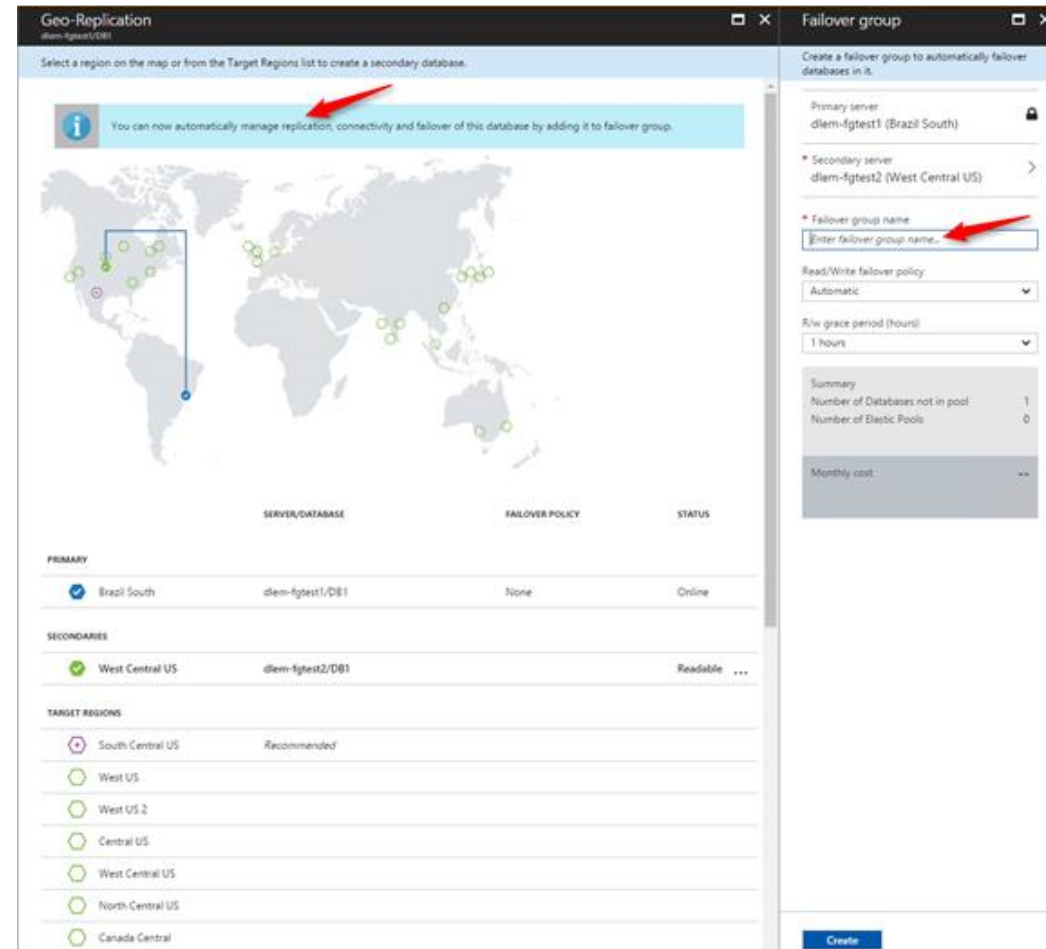
Geo-replicate a group of databases within a logical server

Select between manual or automatic failover for a group of databases

Maintain connectivity with two connection endpoints (read-write, read only) that remain unchanged during failovers

GA  
Released @ INSPIRE  
Jul '18

<https://docs.microsoft.com/en-us/azure/sql-database/sql-database-geo-replication-overview>



# New vCore-based purchasing model

New flexibility and control over performance and storage configurations

Independently scale compute and storage for more flexibility and control

Easily match performance requirements of your existing on-premises workloads in the cloud

Familiar vCore used as a measure of compute capacity

Easy to understand, transparent pricing model

<https://azure.microsoft.com/en-us/blog/a-flexible-new-way-to-purchase-azure-sql-database/>

<https://azure.microsoft.com/en-us/pricing/details/sql-database/>

GA  
Released @ INSPIRE  
Jul '18

**SQL Database**

\* Database name: TestVcoreDB ✓

\* Subscription: [dropdown]

\* Resource group: [dropdown]

\* Select source: Blank database

\* Server: [dropdown]

Want to use SQL elastic pool? ☐ Yes ☒ Not now

\* Pricing tier: Standard S0: 10 DTUs, 250 GB

\* Collation: SQL\_Latin1\_General\_CP1\_CI\_AS

**Resource Configuration & Pricing**

Feedback

Looking for basic, standard, premium?

**General Purpose**  
Scalable compute and storage options for budget-oriented applications  
1-16 vCores  
Starting at 211.17 USD / month

**Business Critical**  
For applications with high transaction rate and highly resilient to failures  
1-16 vCores  
Starting at 552.75 USD / month

**Compute Generation**

**Gen4** ✓  
up to 16 vCores  
up to 112 GB memory  
210.27 / vCore

**Save money**  
Save up to 30% with a license you already own. Already have a SQL Server license? ☐ Yes ☒ No

**vCores** How do vCores compare with DTUs? [vCores](#)

1 2 4 vCores 8 16 4 vCores

**Max data size**

5 GB 1 TB 1.5 TB 1 TB

**ALLOCATED LOG STORAGE** 307.2 GB

**7 days of backup retention**  
Enjoy a free trial of our point-in-time restore capability within the public preview time period

**Preview terms**  
Please accept preview terms to use the VCore Model option. [1 >](#)

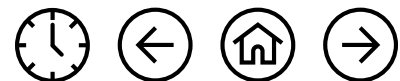
**Cost Summary**

Gen4 - General Purpose (GP_Gen4_4)	
Cost per vCore (in USD)	210.27
vCores selected	x 4
Cost per GB (in USD)	0.14
Max storage selected (in GB)	x 1331.2
<b>EST. COST PER MONTH</b>	<b>1024.80 USD</b>

☐ Pin to dashboard

**Create** Automation options

**Apply**



# Reserved Instances for SQL Database

Public Preview  
ETA  
Aug '18

Reserve Azure SQL Database resources in advance and save up to 33%<sup>1</sup>

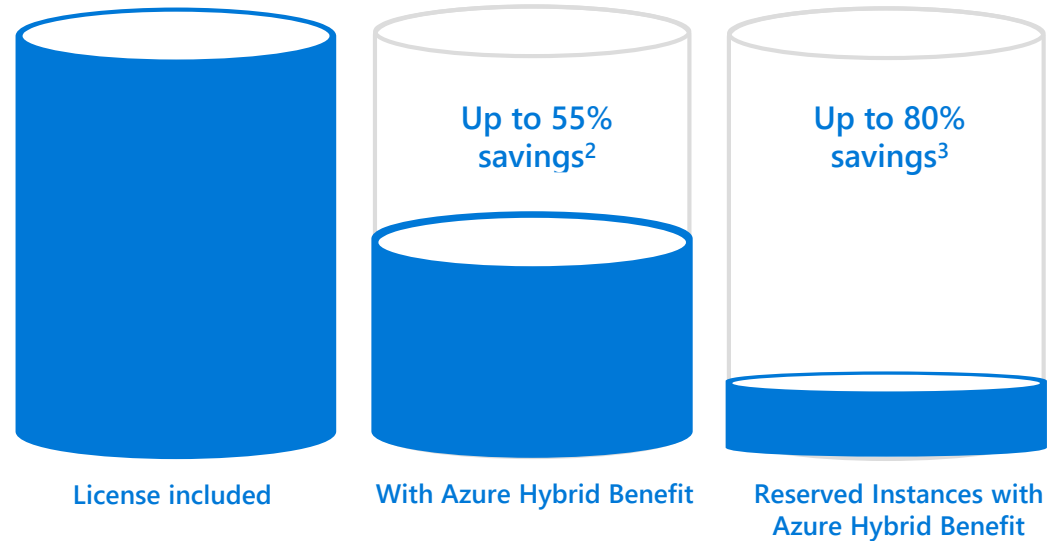
Budget and forecast better with upfront payment for one-year or three-year terms

Get prioritized compute capacity in Azure regions

Exchange or cancel reservations as your needs evolve

Scale up or down within a performance tier and region with auto-fit

Move SaaS apps between elastic pools and single databases and keep your reserved instance benefit



<https://azure.microsoft.com/en-us/pricing/reserved-vm-instances/>

# Azure SQL Database Managed Instance

A new deployment option that brings native VNET support and expanded instance-level surface area compatible with existing SQL Server

Exposes Server Instance and provides instance-scoped capabilities

Streamlines 'lift and shift' to SQL Database

Supports VNET isolation with private IPs

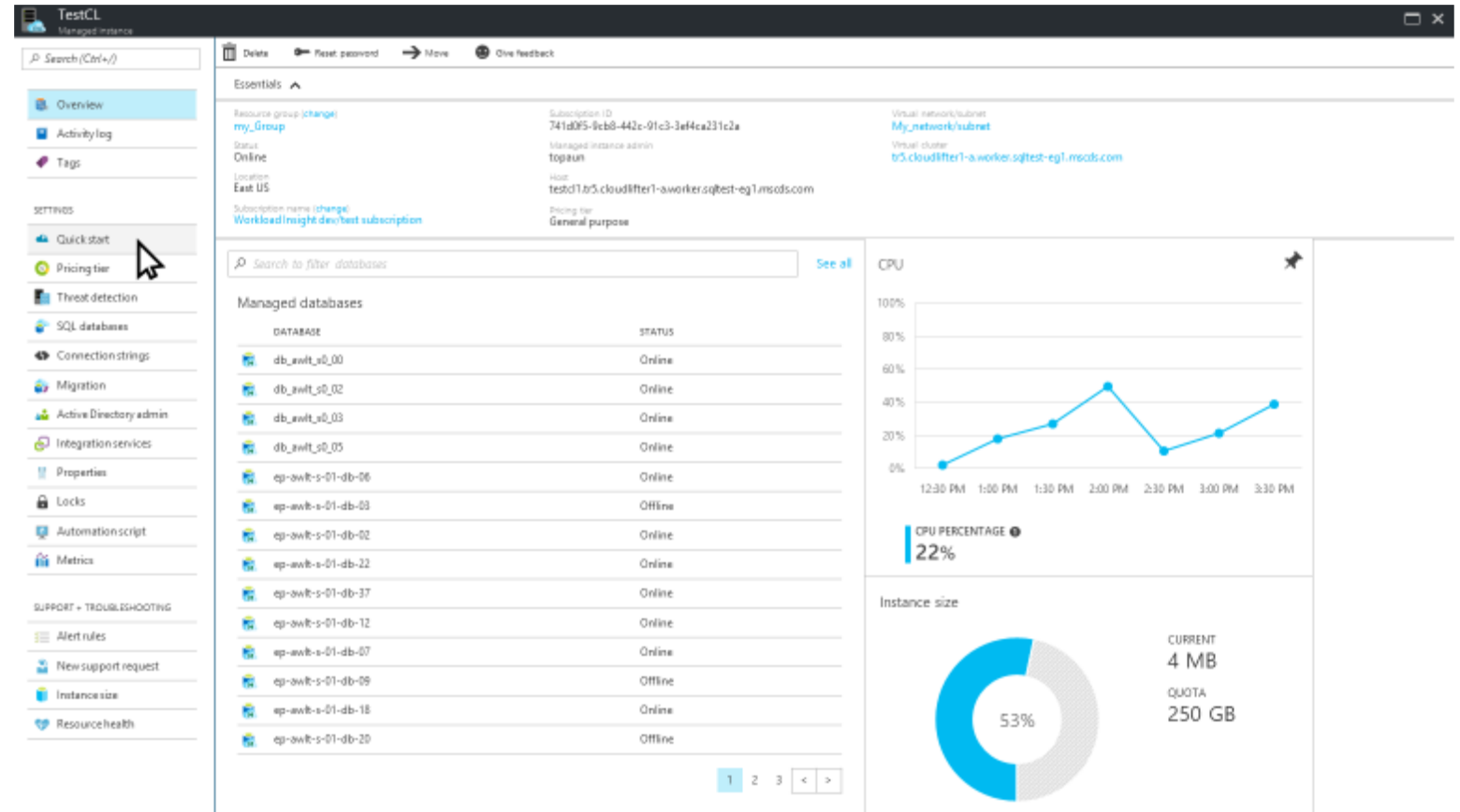
Use your existing SQL licenses with the Azure Hybrid Benefit for SQL Server

Delivers all the benefits of SQL Database - HA built-in, failover, Geo-DR, intelligence

Works with new Azure Database Migration Service

<https://azure.microsoft.com/en-us/blog/migrate-your-databases-to-a-fully-managed-service-with-azure-sql-database-managed-instance/>

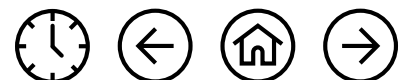
GA\*  
ETA  
Q3 CY18



\*Managed Instance available with two options: General Purpose and Business Critical.

- General Purpose is in public preview. **GA ETA Q3 CY2018\***
- Business Critical **Public Preview ETA Q3 CY2018.**

Managed Instance will be initially available in the following regions: Canada Central, Canada East, Central US, East Asia, East US, East US 2, Japan East, Korea Central, Korea South, North Central US, North Europe, South Central US, South India, Southeast Asia, UK South, West Central US, West Europe, West India, West US, West US 2. By GA, the list will be expanded to all public regions where SQL Database is available, with availability in sovereign clouds as well.



# SQL Database with Machine Learning services

R integration enables end to end machine learning in Azure SQL Database – without moving data

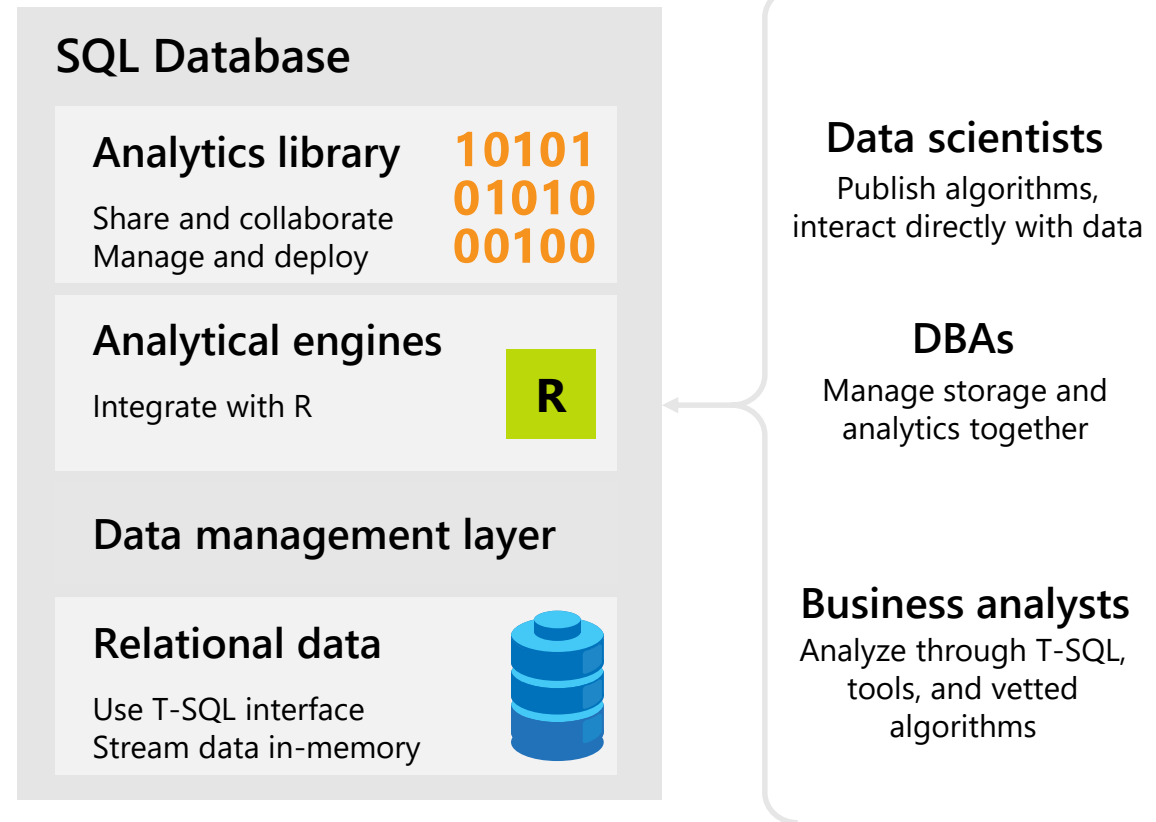
Operationalize your machine learning scripts and models directly in a fully managed database in the cloud.

Expose predictions to any application using your database, easily and seamlessly.

Take advantage of predictions via simple stored procedures for apps connecting to SQL Database.

<https://docs.microsoft.com/en-us/sql/advanced-analytics/r/r-services>

Public Preview  
ETA  
Q4 CY18



# Azure products

AI + Machine Learning

Analytics

Compute

Containers

Databases

Developer Tools

DevOps

Identity

Integration

Internet of Things

Management Tools

Media

Microsoft Azure Stack

Migration

Mobile

Networking

Security

Storage

Web

Integration

Seamlessly integrate on-premises and cloud-based applications, data, and processes across your enterprise

Logic Apps

Automate the access and use of data across clouds without writing code

API Management


Publish APIs to developers, partners, and employees securely and at scale

Service Bus

Connect across private and public cloud environments

Event Grid

Get reliable event delivery at massive scale



# Azure Logic Apps

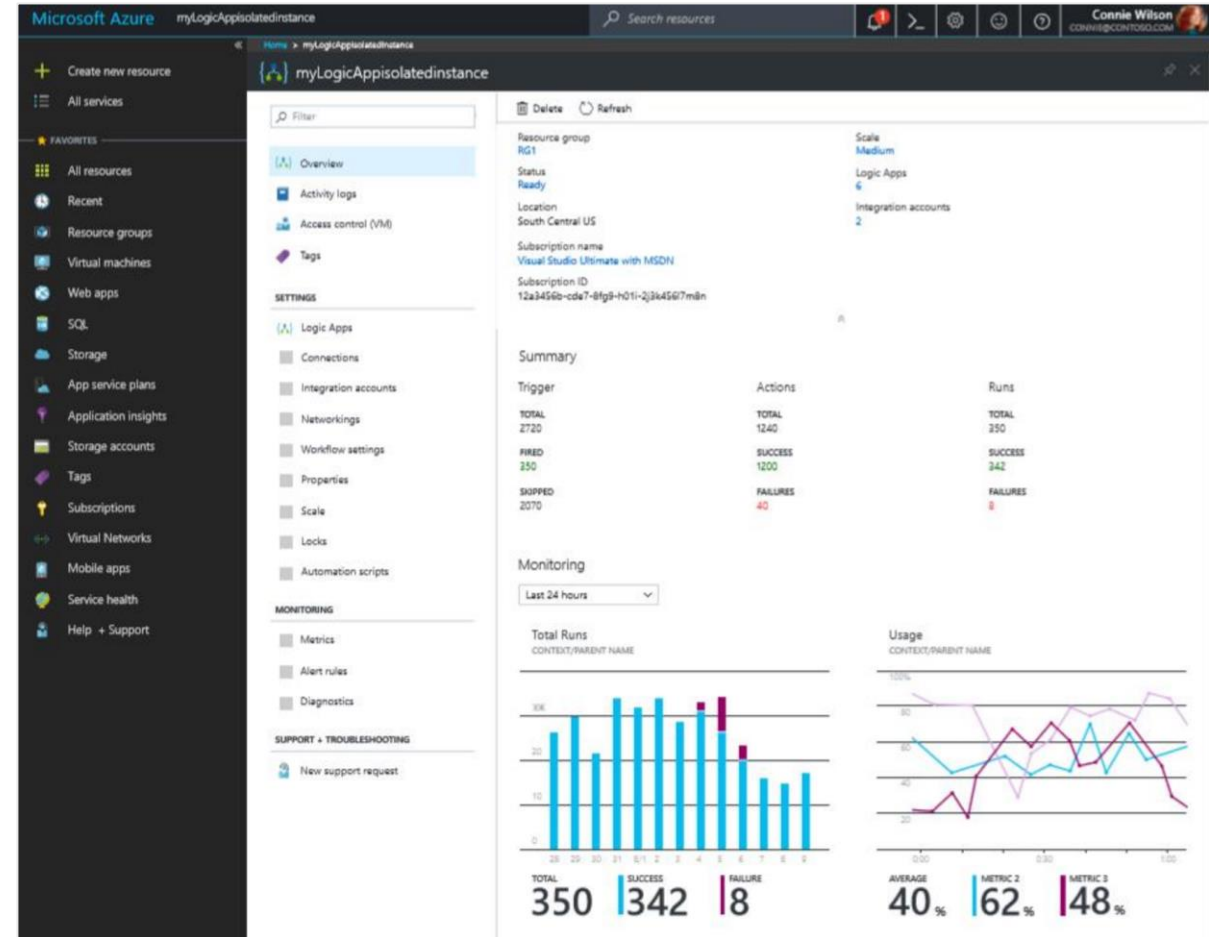
## Integration Services Environment

Public Preview  
ETA  
Q3 CY18

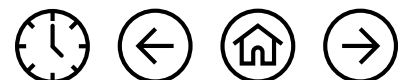
The new Integration Services Environment introduces unique capabilities, providing a fully isolated and dedicated environment for all enterprise-scale integration needs.

Key advantages of Integration Services Environment provides:

- Direct connection to on-premises resources (VNET, Express Route connectivity)
- Consistent performance with dedicate capacity, isolated storage
- Predictable pricing with Premium Integration Account and Enterprise Connections included



<https://azure.microsoft.com/en-us/services/logic-apps/>



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### Internet of Things

Bring IoT to any device and any platform, without changing your infrastructure

#### IoT Hub

Connect, monitor and manage billions of IoT assets

#### IoT Central

Experience the simplicity of SaaS for IoT, with no cloud expertise required

#### Azure Sphere

Securely connect MCU-powered devices from the silicon to the cloud

#### Azure Maps

Simple and secure location APIs provide geospatial context to data

#### Event Grid

Get reliable event delivery at massive scale

#### IoT Edge

Extend cloud intelligence and analytics to edge devices

#### IoT solution accelerators


Create fully customizable solutions with template for common IoT scenarios

#### Time Series Insights

Explore and analyze time-series data from IoT devices

#### Functions

Process events with serverless code



# Azure IoT – remote monitoring

GA  
Update  
May '18

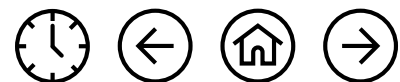
Updates to this solution accelerator that is fully operational out of box. New features include:

- redesigned UI
- Enhanced operator scenarios;
- Easier device connectivity
- Better maps integration options

This announcement also includes the renaming and repositioning of Azure IoT Suite to reflect IoT portfolio development and evolution without the need to tie to a volume licensing SKU; now called Azure IoT solution accelerators, the name change better represents their strong value to our customers.



<https://www.microsoft.com/en-us/internet-of-things/azure-iot-suite>



# Azure IoT Edge

GA  
Released  
Jun '18

Extend cloud services to IoT devices via containers

- Cognitive services (Custom Vision)
- Azure Stream Analytics
- Azure Machine Learning
- Azure Functions
- SQL Server

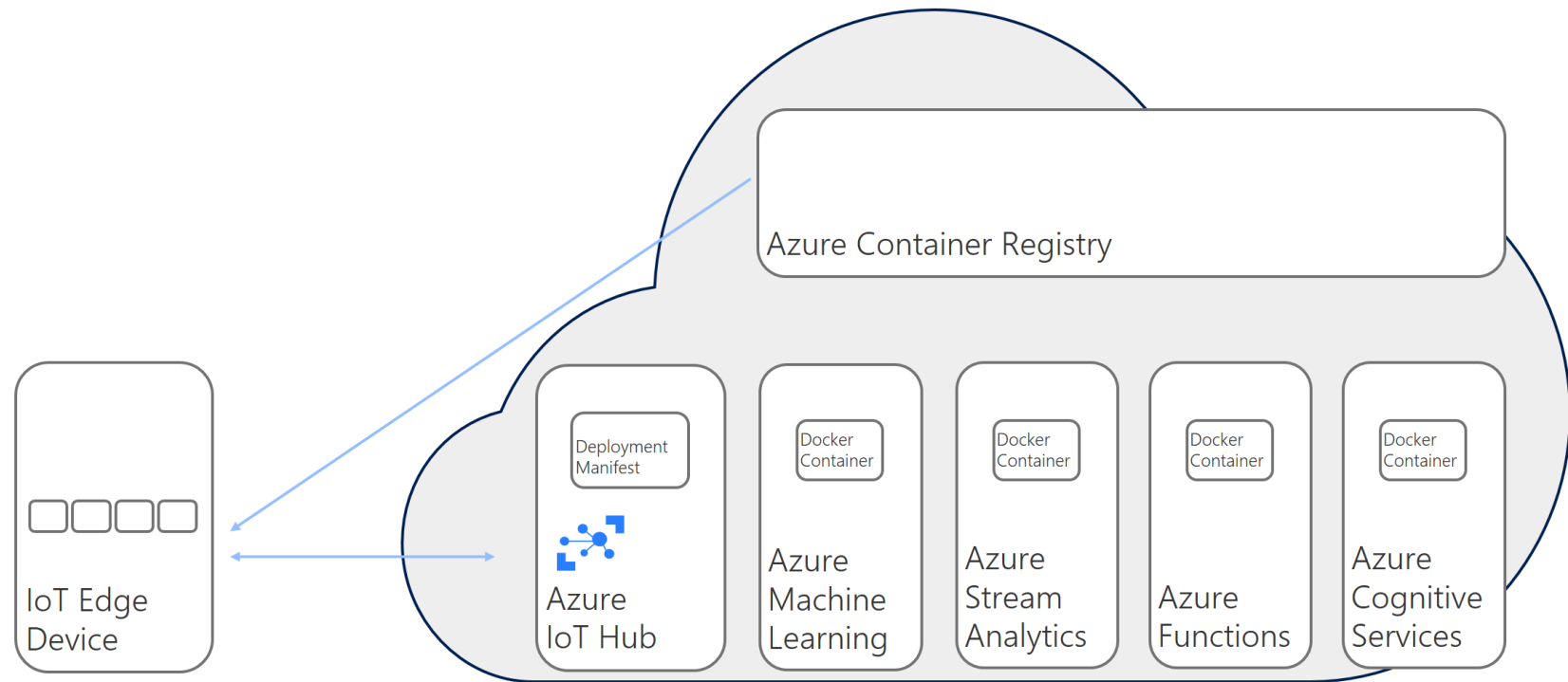
Browse and monetize your own edge modules (containers) through Azure Marketplace

Certification for IoT Edge hardware

1<sup>st</sup> and 3<sup>rd</sup> party dev kits – [Project Kinect for Azure](#), [Qualcomm vision AI kit](#), [Seeed kit](#)

AI at the edge: [Project Brainwave](#)

Azure IoT Edge runtime will be open sourced at GA



<https://azure.microsoft.com/services/iot-edge/>

# Azure IoT Central

GA  
ETA  
Q3 CY18

Reduces the complexity of IoT solutions.

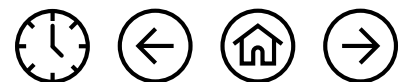
Fully managed SaaS offering for customers and partners that enables powerful IoT scenarios without requiring cloud solution expertise.

Simplifies the development process and makes it easy and fast for customers to get started, making digital transformation more accessible to everyone.

Available along with our existing platform-as-a-service (PaaS) solution, Azure IoT Suite, which enables deep customization and full control.



<https://azure.microsoft.com/en-us/services/iot-central/>



# Azure products

AI + Machine Learning	Management Tools	<b>Management Tools</b> Simplify, automate, and optimize the management of your Azure services	
Analytics	Media		
Compute	Microsoft Azure Stack	<b>Microsoft Azure Portal</b> Build, manage, and monitor all Azure products in a single, unified console	<b>Cloud Shell</b> Streamline Azure administration with a browser-based shell
Containers	Migration	<b>Azure Advisor</b> Your personalized Azure best practices recommendation engine	<b>Backup</b> Simple and reliable server backup to the cloud
Databases	Mobile	<b>Cost Management</b> Optimize what you spend on the cloud, while maximizing cloud potential	<b>Azure Policy</b> Implement corporate governance and standards at scale for Azure resources
Developer Tools	Networking	<b>Azure Monitor</b> Highly granular and real-time monitoring data for any Azure resource	<b>Log Analytics</b> Collect, search, and visualize machine data from on-premises and cloud
DevOps	Security		
Identity	Storage		
Integration	Web	<b>Site Recovery</b> Orchestrate protection and recovery of private clouds	
Internet of Things			



# Azure Availability Zones

GA/Preview  
Updates  
Jun '18

Additional high availability option implemented as part of a resiliency plan with data residency

Each zone consists of one or more datacenters

Zones are physically separated and feature independent power, networking, and cooling

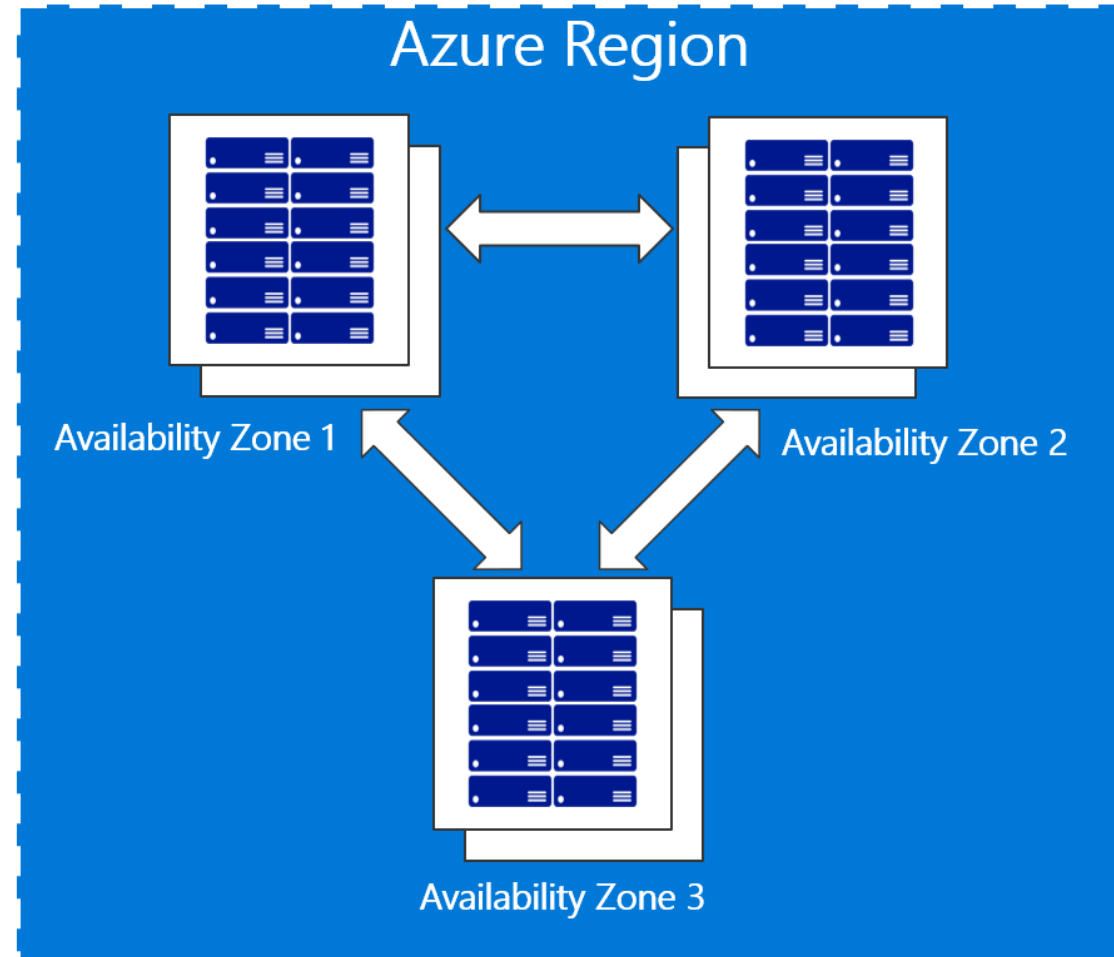
99.99% uptime SLA for virtual machines in two or more Availability Zones in one region

## Milestones on region expansion

Southeast Asia: June 18 - Preview

East US 2, West Europe, North Europe: June 29 - Preview

<http://aka.ms/azoverview>



# Current Azure Capabilities on Azure Stack



Virtual machines (VM), VM scale

Rapid deployment with scaling on demand



Containers

Linux and Windows Server containers



Networking

Virtual network, load balancer, VPN gateway



Storage

Blobs, tables, queues



Key Vault

Securely protect application keys and secrets



Azure App Service

Web and API apps



Azure Functions

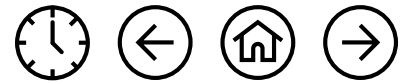
Serverless Computing



Azure Marketplace

Ready to go Apps from the Azure Marketplace

# Servicing



←

→

↻

https://adminportal.orlando.azurestack.corp.microsoft.com/#dashboard/private/747d32bd-8ab4-4914-aa81-e88c6b2fd012

📖

★

☆

🔍

🔗

⋮

Microsoft Azure Stack - Administration

🔍 Search resources

⌵

🔔

⚙️

?

justini@microsoft.com  
SELFHOST

👤

☰

+

New

🏠

Dashboard

📊

All resources

📁

Resource groups

📋

Plans

💰

Offers

🏪

Marketplace management

💻

Virtual machines

🕒

Recent

More services >

Dashboard ▾

+ New dashboard

✎ Edit dashboard

🔗 Fullscreen

📄 Clone

🗑 Delete

Region management

1 🌐

REGION	CRITICAL	WARNING
orlando	0	355

Update

📘 Update available

Version: 1.0.180103.2 🏠

Alerts

📉 355

🔴 Critical 0

🟡 Warning 355

Resource providers

NAME	HEALTH	ALERTS
Capacity	⚠ Warning	355
Compute	✅ Healthy	0
Infrastructure backup	✅ Healthy	0
Key Vault	✅ Healthy	0
Network	✅ Healthy	0
Storage	✅ Healthy	0

Quickstart tutorials

🖥

Create a virtual machine

Create a VM to validate deployment

🏪

Offering services

Make services available to your users

🏪

Populate the Azure Stack marketplace

Add apps and resources to the marketplace

🏠

Manage infrastructure

Monitor health, manage updates, and other tasks

🏠

Use the Azure Stack portal

Learn about the Azure Stack - Administration portal

# Azure products

AI + Machine Learning

Analytics

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Containers

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Identity

Integration

Internet of Things

Management Tools

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Microsoft Azure Stack

Migration

Mobile

Networking

Security

Storage

Web

### Migration

Simplify and accelerate your migration to the cloud

#### Azure Migrate

Easily discover, assess, right-size, and migrate your on-premises VMs to Azure

#### Azure Database Migration Service

Simplify on-premises database migration to the cloud

#### Cost Management


Optimize what you spend on the cloud, while maximizing cloud potential

#### Site Recovery

Orchestrate protection and recovery of private clouds

#### Data Box

Secure, ruggedized appliance for Azure data transfer



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Storage

Web

Networking

Connect cloud and on-premises infrastructure and services to provide your customers and users the best possible experience

Virtual Network

Provision private networks, optionally connect to on-premises datacenters

Application Gateway

Build secure, scalable, and highly available web front ends in Azure

Azure DNS

Host your DNS domain in Azure

Azure DDoS Protection

Protect your applications from Distributed Denial of Service (DDoS) attacks

ExpressRoute

Dedicated private network fiber connections to Azure

Load Balancer

Deliver high availability and network performance to your applications

VPN Gateway

Establish secure, cross-premises connectivity

Content Delivery Network


Ensure secure, reliable content delivery with broad global reach

Traffic Manager

Route incoming traffic for high performance and availability

Network Watcher

Network performance monitoring and diagnostics solution

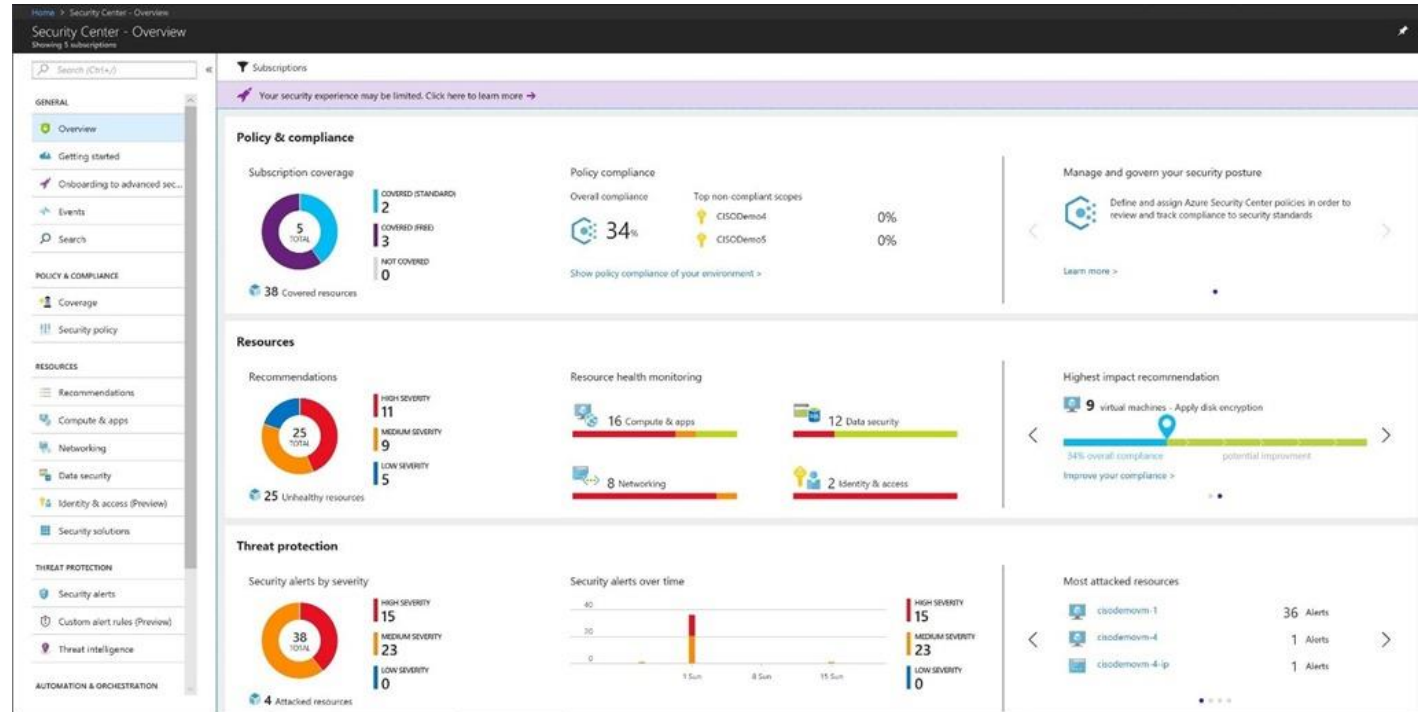


# Azure Security Center

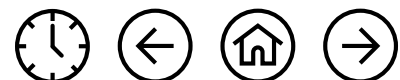
GA  
Updates  
Apr '18

## New features:

- Visibility and governance at the organizational level – **Private Preview**
- Integrated security configuration in the virtual machine experience - **GA**
- Identity & Access Management tile – **Public Preview**
- Just-in-time VM access - **GA**
- Adaptive application controls – **Public Preview**
- Interactive network security monitoring - **GA**
- File integrity monitoring (FIM) – **Public Preview**
- Extending threat protection to containers – **Private Preview**
- New secure configuration assessments for servers - **GA**
- Integration with Windows Defender Advanced Threat Protection for servers (WDATP) – **Public Preview**
- Fileless Attack Detection – **Public Preview**
- Threat analytics for admin activity - **GA**
- Integration with new partner solutions from Palo Alto and McAfee. - **GA**



<https://azure.microsoft.com/en-us/blog/announcing-new-azure-security-center-capabilities-at-rsa-2018/>



# Azure Security Center in Azure Government

Preview  
Released  
Jul '18

- Unified security management for hybrid cloud workloads
- Continuous monitoring as well as security assessments and recommendations
- Advanced threat protection to identify and mitigate risk and reduce exposure
- Enable government cloud security teams to better protect their data, networks, and IT infrastructure from cyberattack

<https://blogs.msdn.microsoft.com/azuregov/2018/07/03/azure-security-center-preview-now-available-in-azure-government/>



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Storage

Web

### Storage

Get secure, massively-scalable cloud storage for your data, apps, and workloads

### Storage

Durable, highly available, and massively scalable cloud storage

### Archive Storage

Industry leading price point for storing rarely accessed data

### File Storage

File shares that use the standard SMB 3.0 protocol

### Data Lake Store

Hyperscale repository for big data analytics workloads

### Storage Explorer

View and interact with Azure Storage resources

### Blob Storage

REST-based object storage for unstructured data

### Queue Storage


Effectively scale apps according to traffic

### Disk Storage

Persistent, secured disk options supporting virtual machines

### Data Box

Secure, ruggedized appliance for Azure data transfer

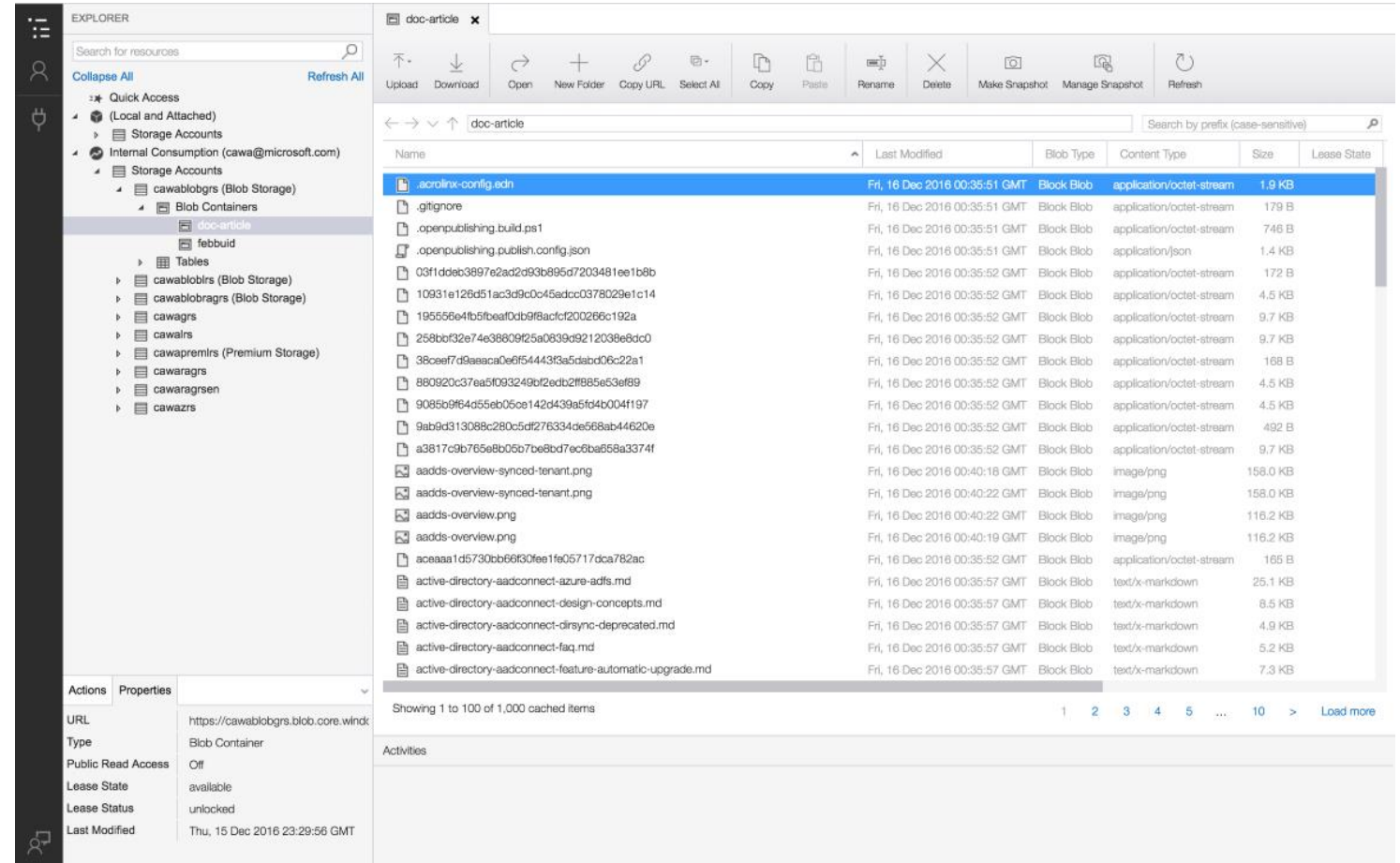


# Azure Storage Explorer

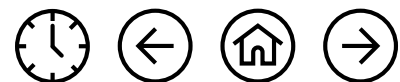
GA  
Released  
May '18

Easily manage different storage entities in one place from Linux, macOS, and Windows

- Access multiple accounts and subscriptions across Azure, Azure Stack, and the sovereign cloud.
- Create, edit, view, upload, download, and delete storage resources such as Blobs, Queues, Tables, Files, Data Lake and Cosmos DB
- Share storage resources by sharing SAS URLs or Direct links



<https://blogs.msdn.microsoft.com/visualstudio/2018/05/02/azure-storage-explorer-generally-available/>



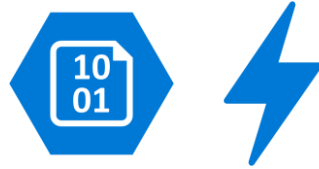
# Azure Data Lake Storage Gen2

Brings together the best of Azure Data Lake Store and Blob Storage

- Hadoop compatible file system interface for Azure Blob Storage
- Fine grained file and folder permissions (ACLs)
- Atomic file system operations
- Full support for all Blob features (AAD Integration, Zone Redundant and RA-Geo Redundant Storage)
- Pricing at Blob Storage levels
- Available in all 50 Azure regions (at GA)

<https://azure.microsoft.com/en-us/blog/announcing-azure-data-lake-storage-limited-preview/>

## Azure Data Lake Storage



Scalable, secure storage  
that speeds time to insight

Scale and  
Availability

Speed to  
Insight

Cost  
Effectiveness

Rich  
Security

Limited public preview:  
Late June/July 2018  
GA ETA Q4 CY18



Upgrade path for  
existing ADLS  
Customers



Strong Partner  
Support



Optimized for  
performance with  
Spark and Hadoop  
analytics engines



# Azure Data Box Disk

Public Preview  
Released @ INSPIRE  
July '18

- Provides simple, secure, SSD disk-based offering for offline data transfer to Azure
- Transport as much as 40TB of data into Azure by connecting the disks to a computer via USB or SATA
- Data Box Disk Preview is available in the EU and US.



[Sign up for the Data Box Preview](#)  
[ISV Partners sign up for Preview](#)

# Storage improvements

## Coming:

- Larger disk sizes – migrate workloads with larger disk size requirements from 1 TB to 4 TB and easier usage with Azure Site Recovery – Public Preview ETA Q2 CY18
- Larger file shares – from 5 TB up to 100 TB – Private Preview ETA Q3 CY18 / Public Preview ETA Q4 CY18



Max 1TB



Max 4TB



Max 5TB



Max 100TB

Preview  
ETA  
Q2/Q4 CY18

<https://azure.microsoft.com/en-us/services/storage/>

# Azure products

AI + Machine Learning	Management Tools
Analytics	Media
Compute	Microsoft Azure Stack
Containers	Migration
Databases	Mobile
Developer Tools	Networking
DevOps	Security
Identity	Storage
Integration	Web
Internet of Things	

## Web

Build, deploy, and scale powerful web applications quickly and efficiently

### Web Apps

Quickly create and deploy mission critical web apps at scale

### Content Delivery Network

Ensure secure, reliable content delivery with broad global reach

### Azure SignalR Service


Add real-time web functionalities easily

### API Management

Publish APIs to developers, partners, and employees securely and at scale

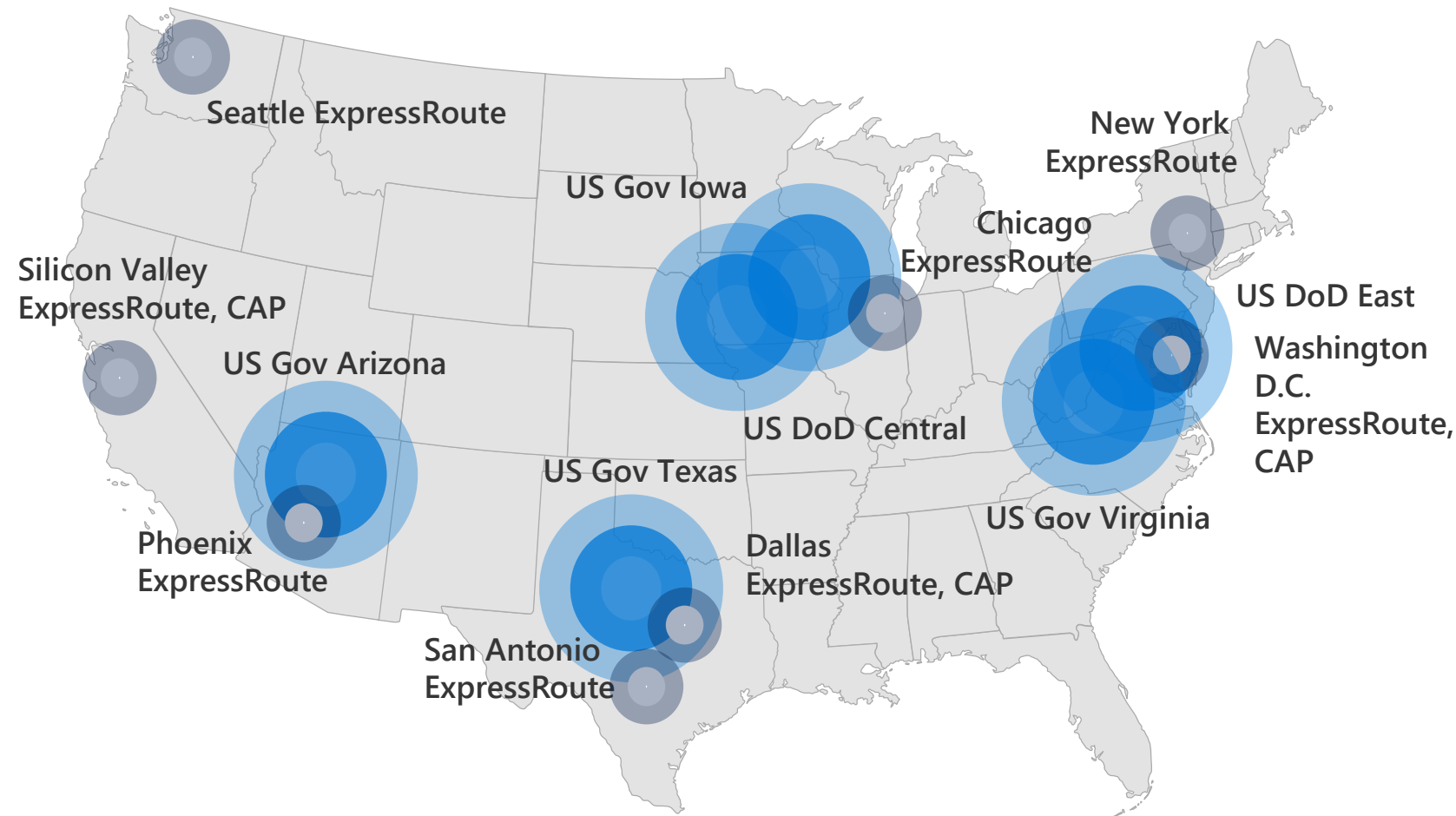
### Azure Search

Fully-managed search-as-a-service

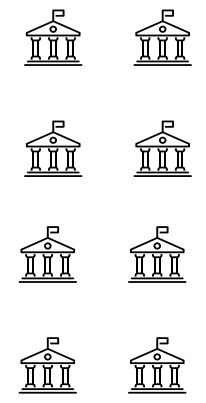


# Microsoft Azure Government Roadmap

# Azure government regions



**8**  
Gov  
Regions  
Announced



**8**  
ExpressRoute  
Locations  
Announced



[ExpressRoute Documentation](#)

# The most trusted and compliant cloud

GLOBAL	 ISO 27001	 ISO 27018	 ISO 27017	 ISO 22301	 ISO 9001	 SOC 1 Type 2	 SOC 2 Type 2	 SOC 3	 CSA STAR Self-Assessment	 CSA STAR Certification	 CSA STAR Attestation							
US GOV	 Moderate JAB P-ATO	 High JAB P-ATO	 DoD DISA SRG Level 2	 DoD DISA SRG Level 4	 DoD DISA SRG Level 5	 SP 800-171	 FIPS 140-2	 Section 508 VPAT	 ITAR	 CJIS	 IRS 1075							
INDUSTRY	 PCI DSS Level 1	 CDSA	 MPAA	 FACT UK	 Shared Assessments	 FISC Japan	 HIPAA/ HITECH Act	 HITRUST	 GxP 21 CFR Part 11	 MARS-E	 IG Toolkit UK	 FERPA	 GLBA	 FFIEC				
REGIONAL	 Argentina PDPA	 EU Model Clauses	 UK G-Cloud	 China DJCP	 China GB 18030	 China TRUCS	 Singapore MTCS	 Australia IRAP/CCSL	 New Zealand GCIO	 Japan My Number Act	 ENISA IAF	 Japan CS Mark Gold	 Spain ENS	 Spain DPA	 India MeitY	 Canada Privacy Laws	 Privacy Shield	 Germany IT Grundschutz workbook