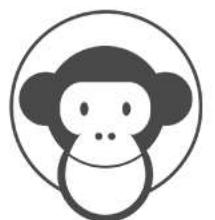




**TRA POCO INIZIA IL LIVE**



CloudGen





TOPIC

# Cloud is a journey, not a master move

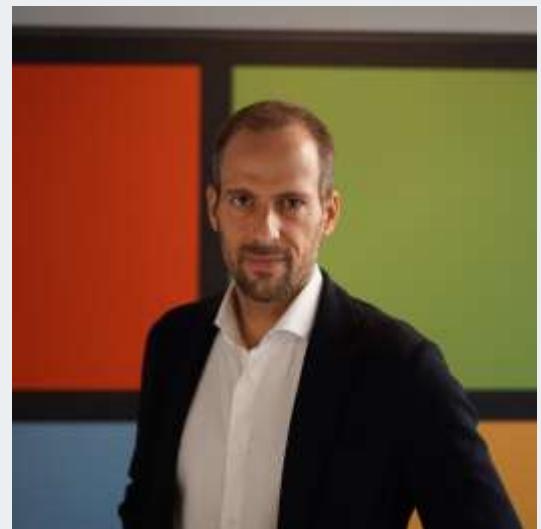
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Andrea Benedetti

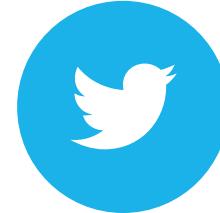
Sr. Cloud Architect, Data Strategist

Microsoft Italia

# Who I am



Andrea Benedetti



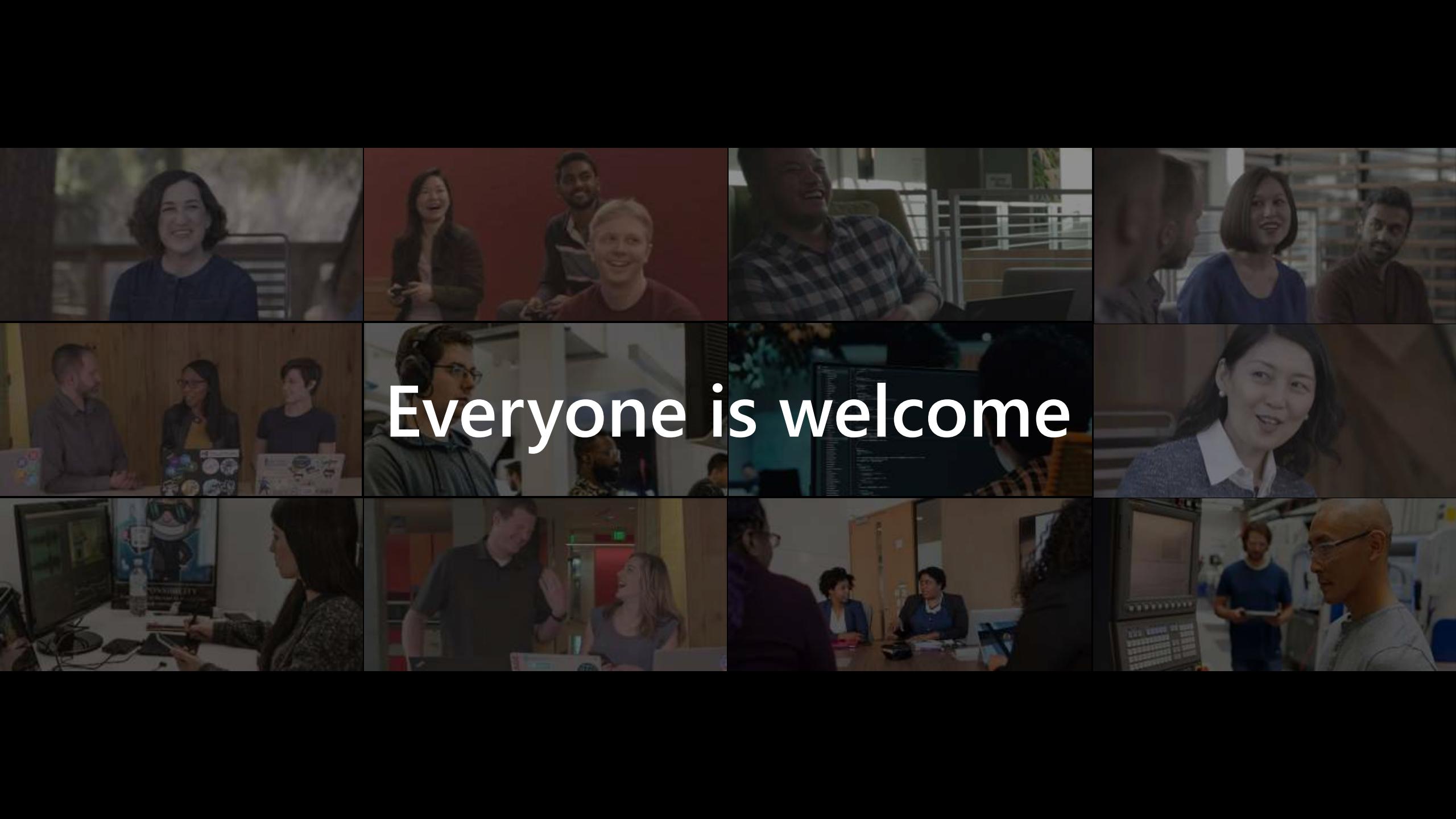
<https://twitter.com/anBenedetti>



<https://github.com/anbened>



<https://www.linkedin.com/in/abenedetti/>



Everyone is welcome

Who led the digital transformation of  
your company?

- A) CEO
- B) CTO
- C) COVID-19

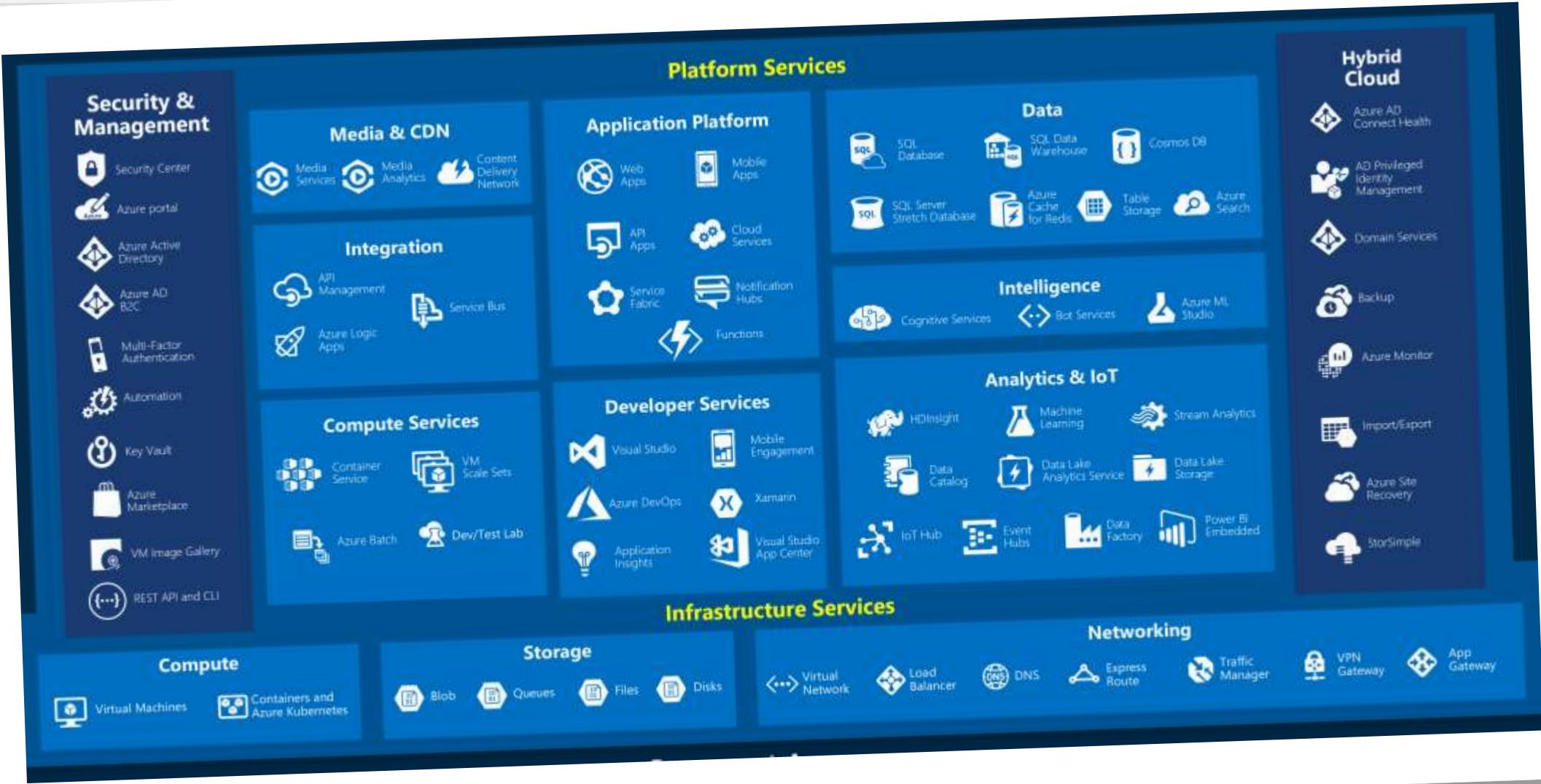
# Cloud for real



We've seen a new daily record of **2.7 billion meeting minutes in one day**, a 200 percent increase from 900 million on March 16.

And as students and teachers turn to Teams for distance learning, there are **183,000 tenants in 175 countries using Teams for Education**.

The number of **weekly Teams mobile users grew more than 300 percent from early February to March 31**





A journey,  
not a master move

Let's recap what's new...

NEW CAPABILITIES



# Visual Studio

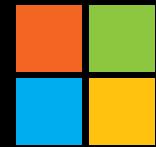
Visual Studio Online — Cloud-powered dev environments

IntelliCode — AI-assisted development

Live Share — Real-time collaboration

Azure tools — One-click deploy to the cloud

NEW CAPABILITIES



# Microsoft Azure

Kubernetes

Dev Spaces connect, Azure Security Center Integration

Functions

.NET Core 3.0, PowerShell, Premium Plan

App Service

App Service Managed Certificates

Java

Azure Spring Cloud

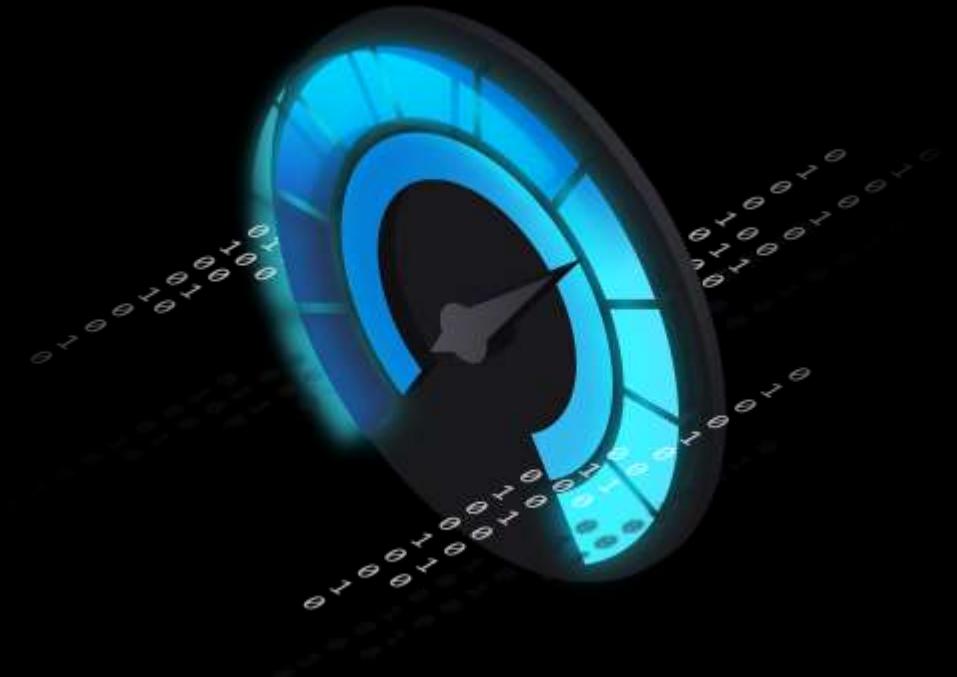
# Ultra Disk Storage

Highest performance disks in the cloud

Supports up to 160,000 IOPs + 2GB/sec per disk

4GB to 64TB in size

<1ms read/write latency



# Windows Virtual Desktop

GENERALLY AVAILABLE

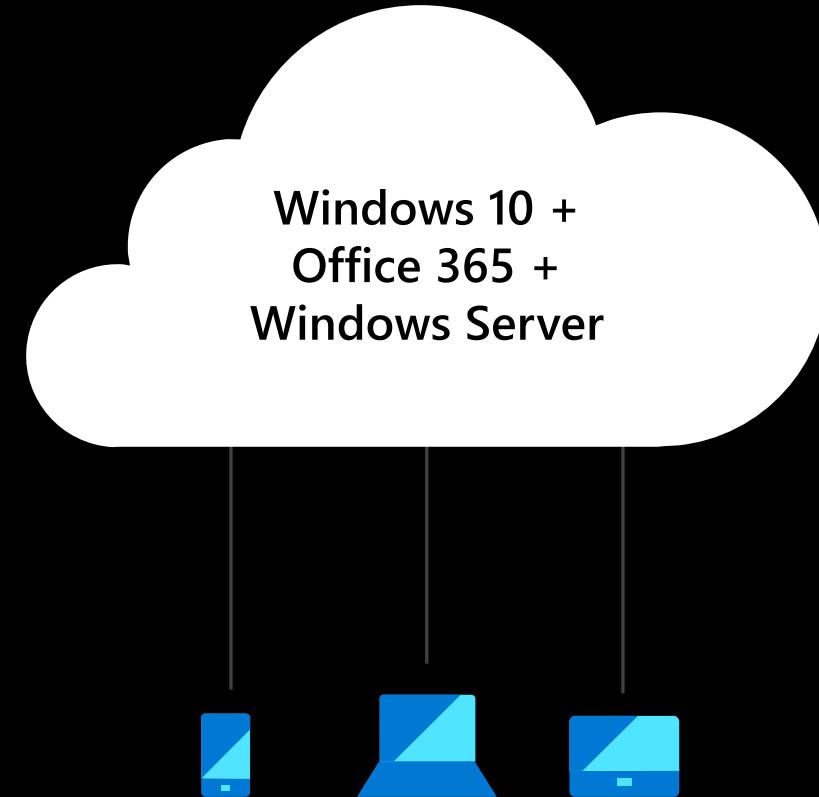
Only multi-user Windows 10 experience

Optimized for Office 365 ProPlus

Deploy and scale in minutes

Virtualize desktops and apps

Pay for usage only

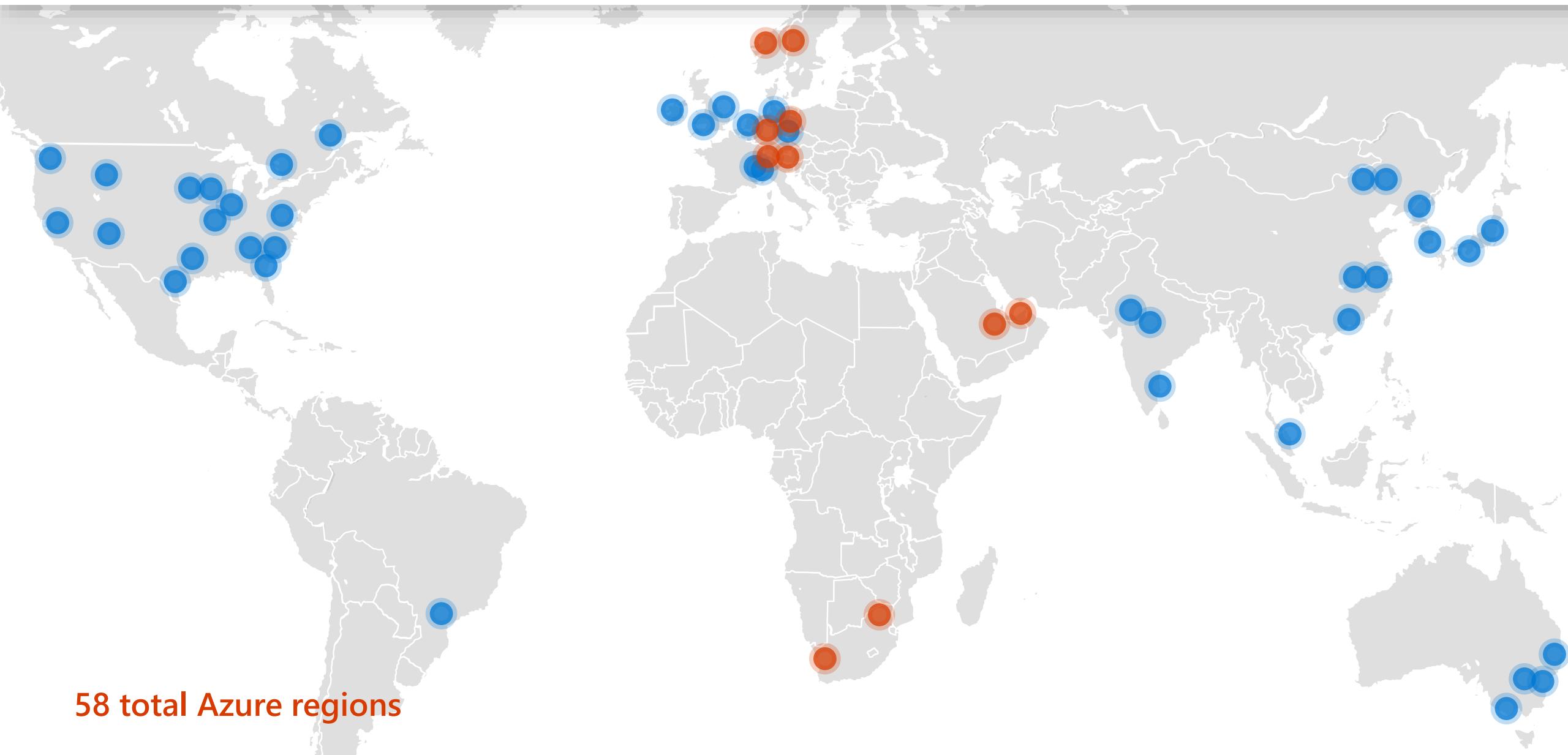


Tech intensity = (Tech adoption  $\times$  Tech capability) $^{\wedge}$  Trust

Azure

The world's computer

# Azure Global Infrastructure



# Growth

## Eight new Azure regions launched in 2019

First regions from a global cloud provider on the African continent and in UAE

## Expanding at a rapid rate

Actively working on regions in Norway with more to come

## Azure Availability Zones

Available in Asia, Europe, and the United States with a total of 30 Availability Zones in 10 regions across the globe

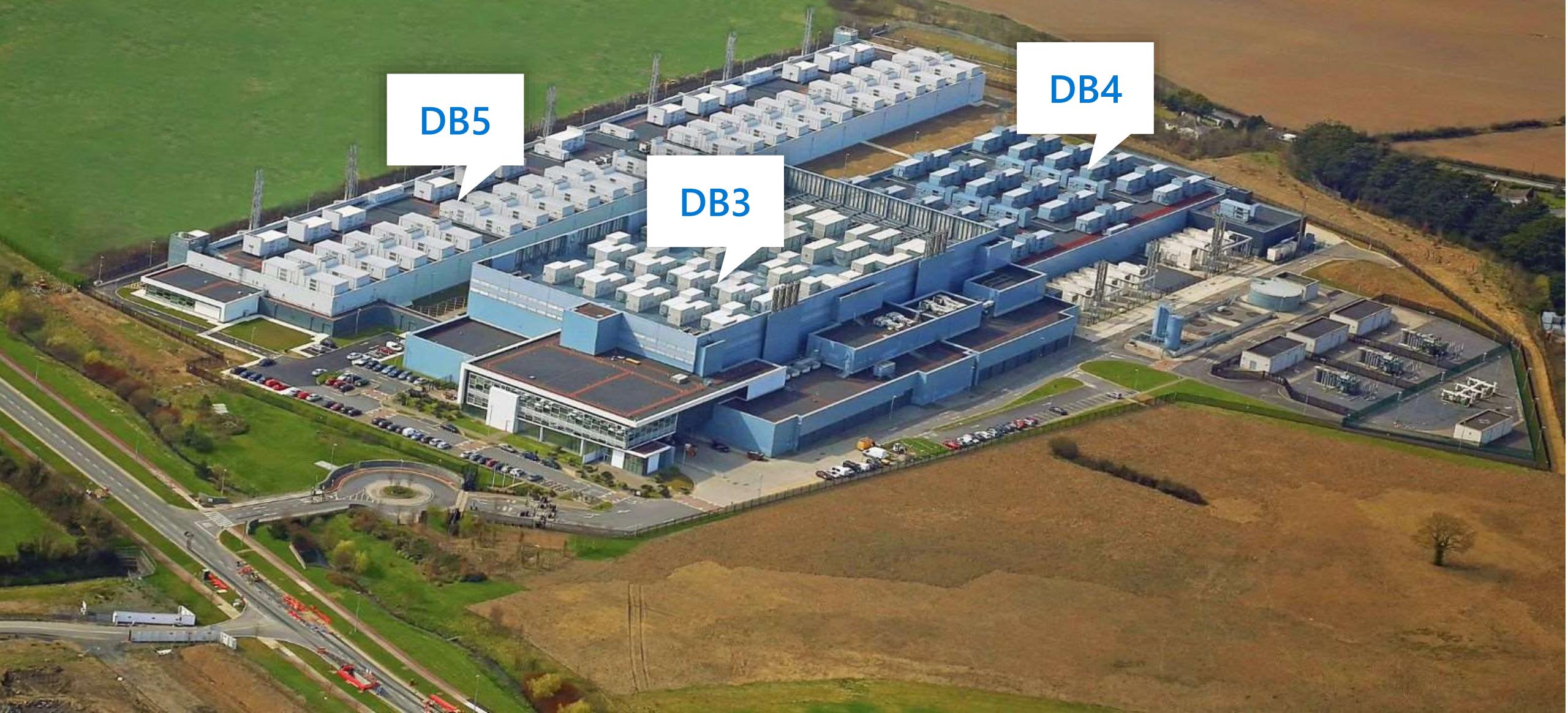


Dublin

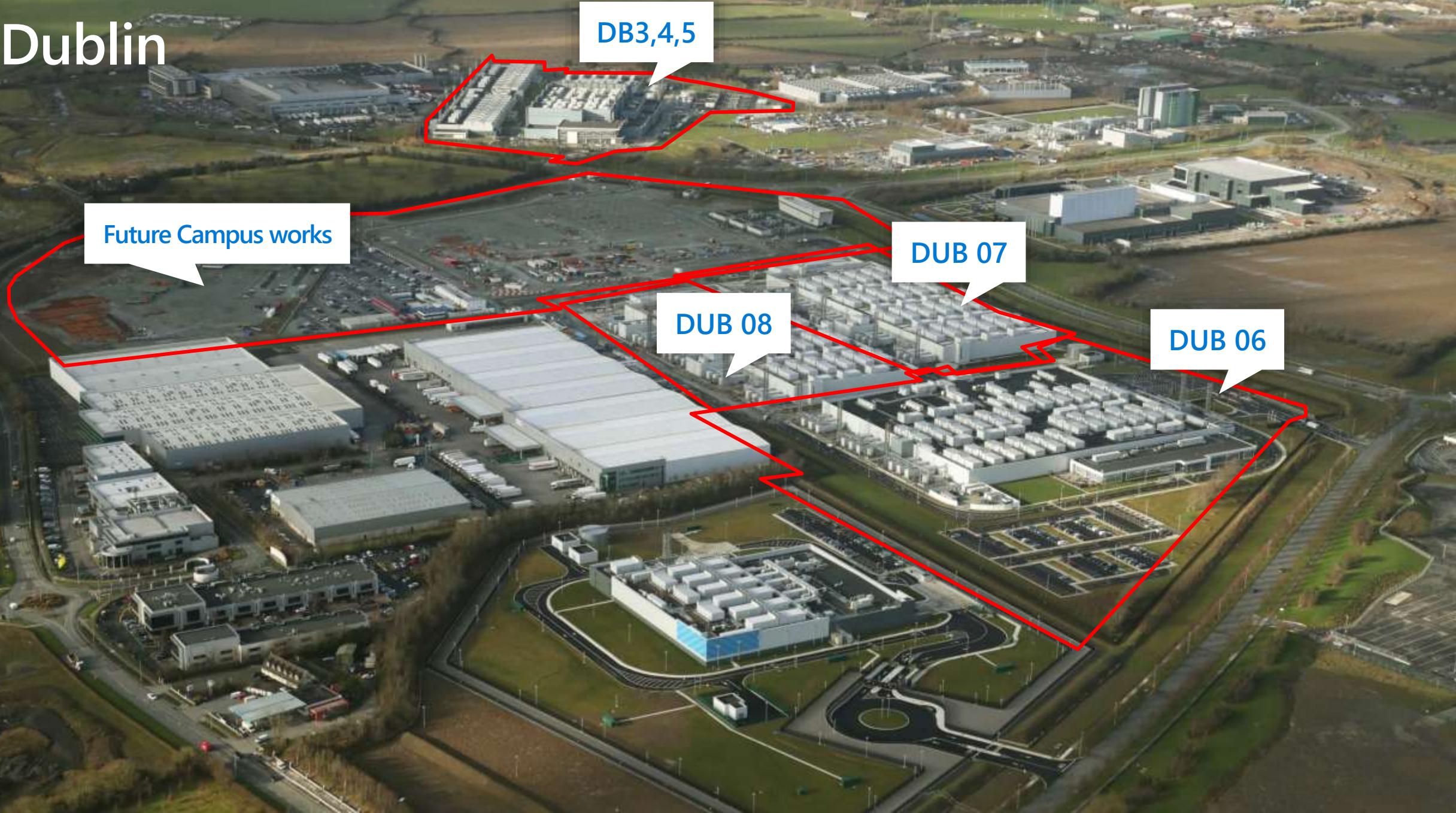
DB3

DB4

# Dublin



# Dublin



# Azure data center reliability

**>99.999%**

Datacenter availability across our fleet of more than 100 datacenters and millions of servers.

**2.6B**

Datacenter Power & Cooling IoT points per day

**55%**

Reduction in Human-Caused datacenter power and cooling incidents

**2800**

Average monthly datacenter events correlated against Azure customer experience

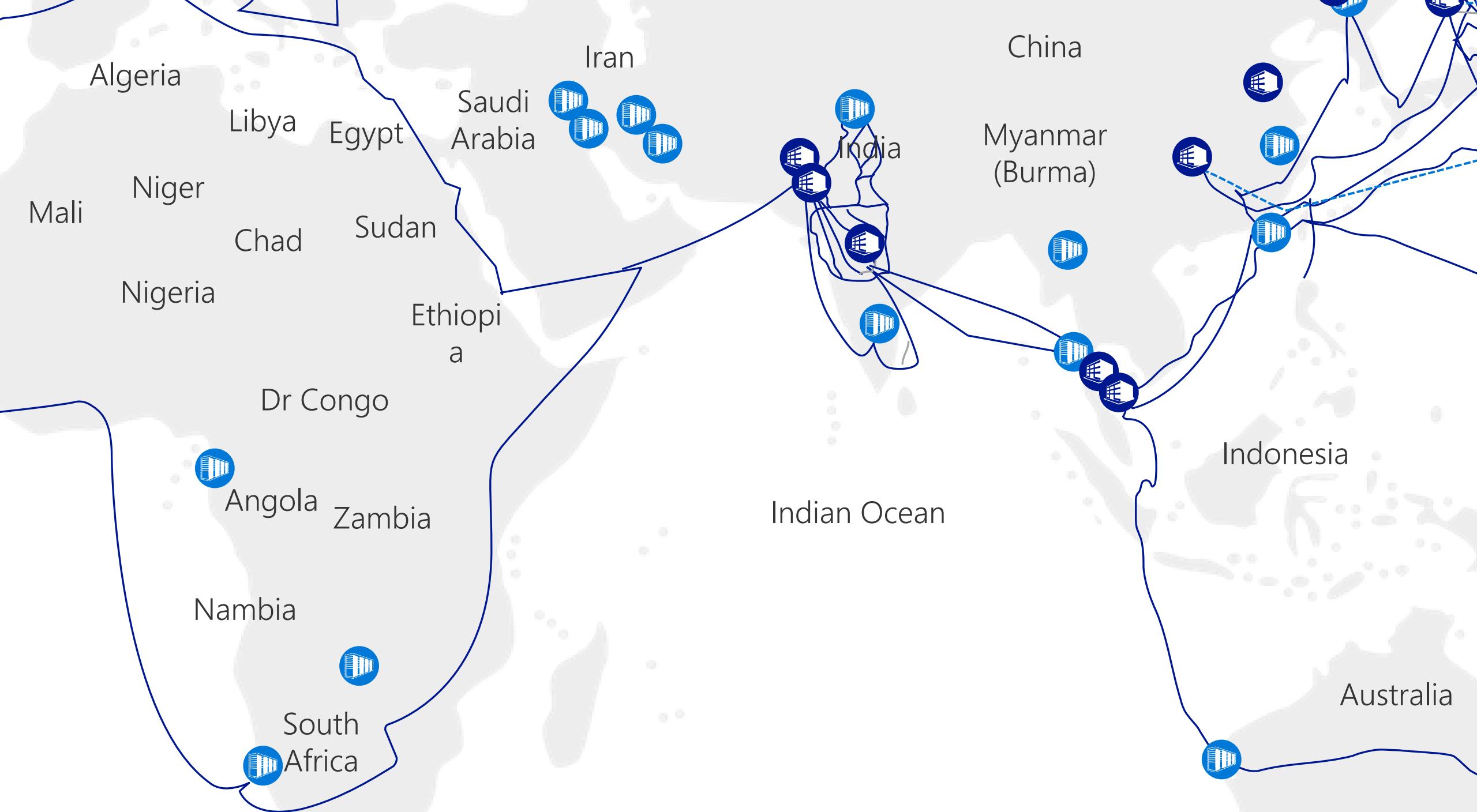


# Most reliable network

More than 160 Edge sites and 20,000 peering connections

30 billion packets per second over WAN

On-premises to on-premises connectivity  
with Azure Global WAN



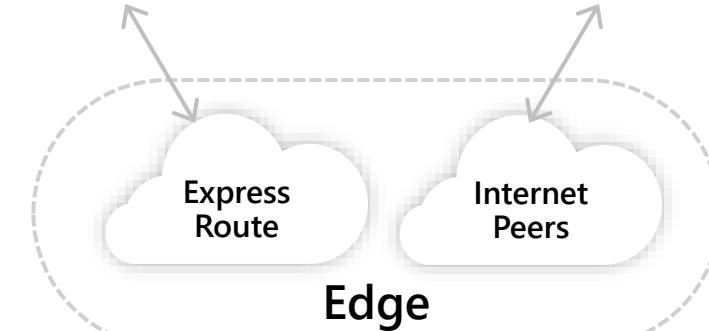
# Azure Regional Networks

## Edge

Connects Region to Internet and Enterprise peers

Enterprise Peering (Private) 

Internet Peering (Public) 

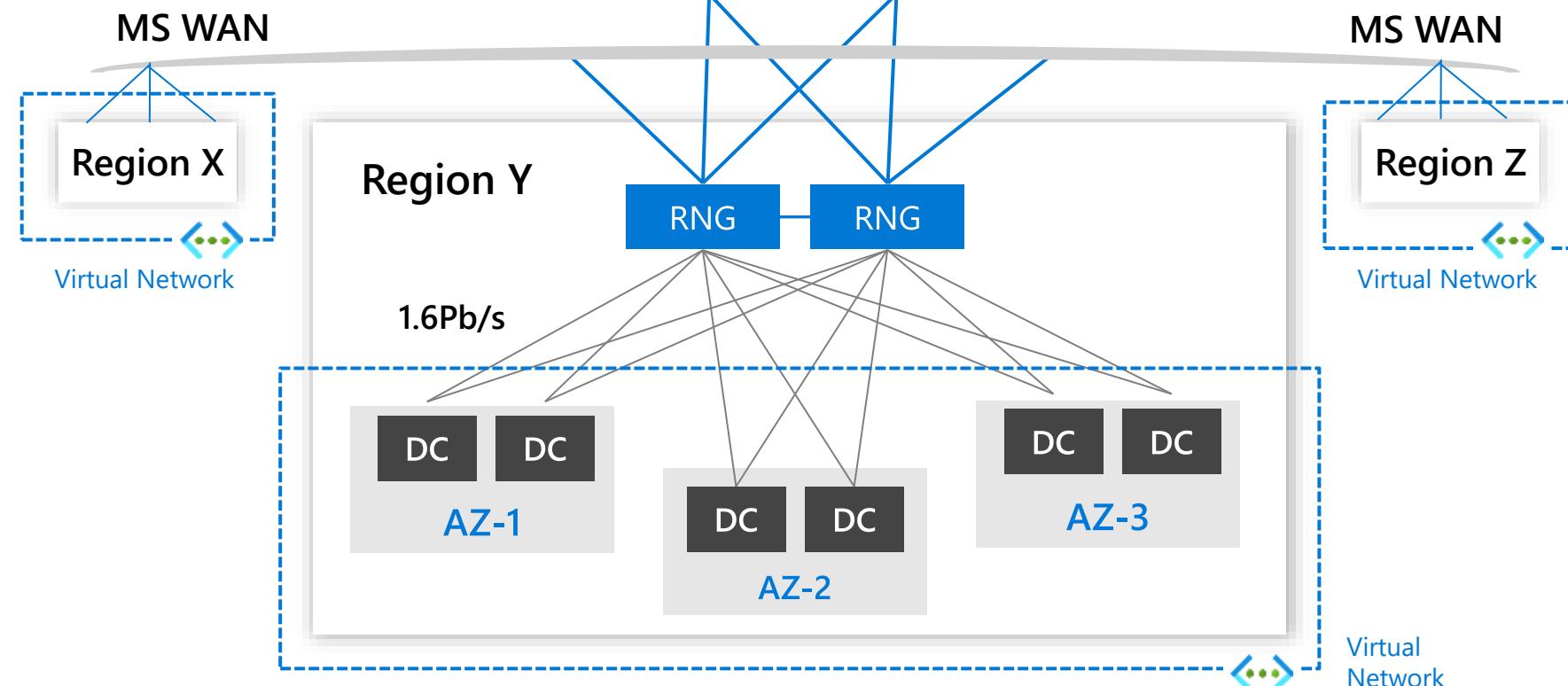


## Regional Network Gateway

Connects Regions to Regions, DC to DC

Contiguous geographical area  
~100km in diameter

T-shirt sized (28 to 528MW)



## Data Centers

DC to DC latency – 1.8ms

AZ to AZ latency – 1.0ms

Within DC – 100 microseconds

Project Natick → <https://natick.research.microsoft.com/>







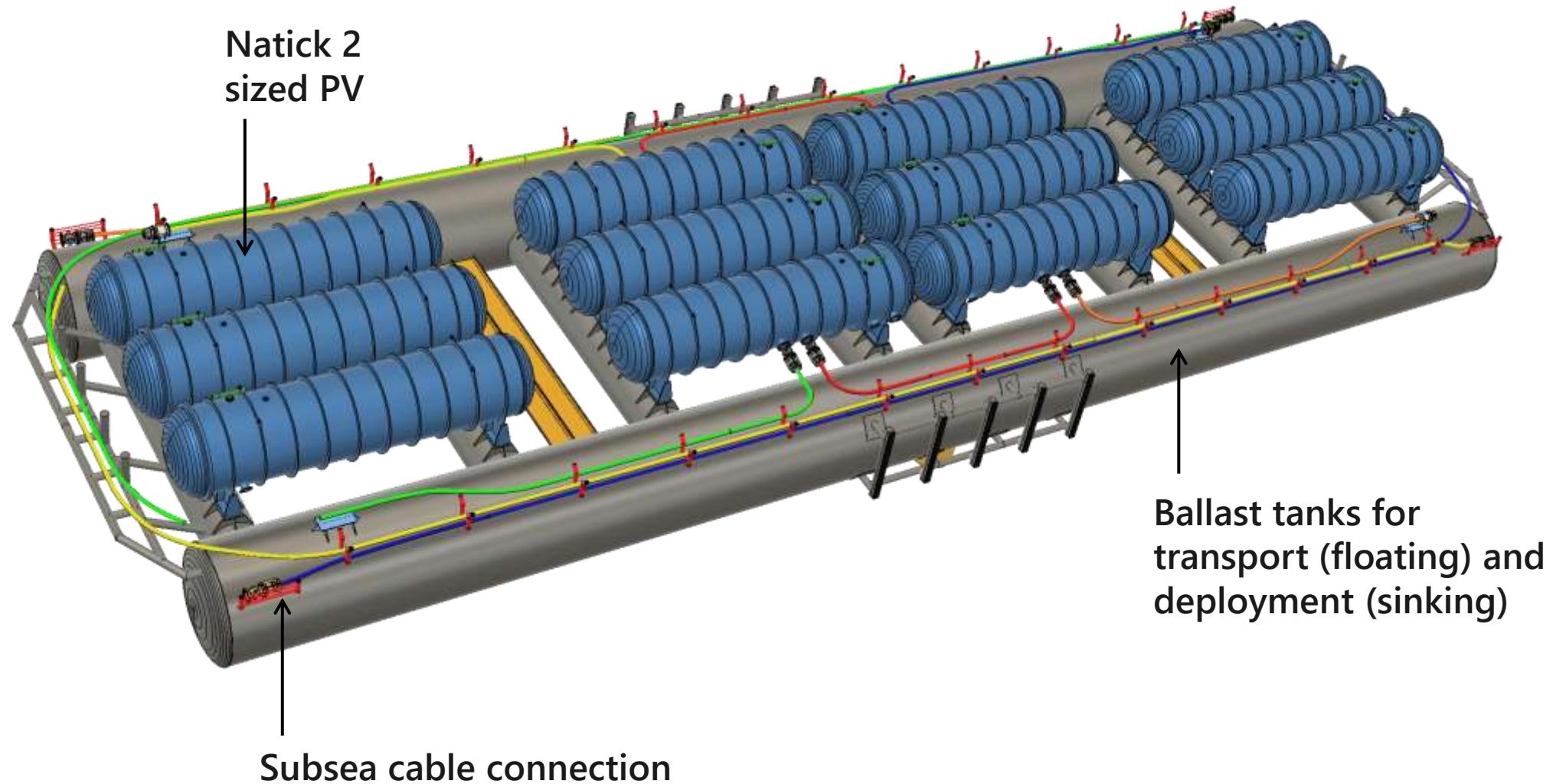
6M  
GREEN MARINE

6M  
GREEN MARINE  
ENERGY SUPPORT SERVICES

4

2 1

050





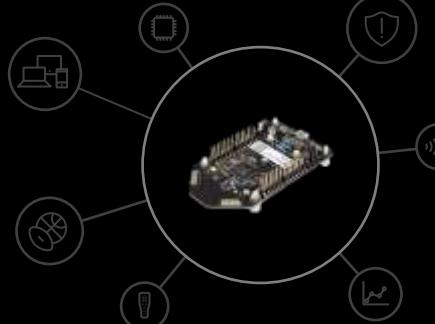


58

Azure regions  
worldwide



Operating models



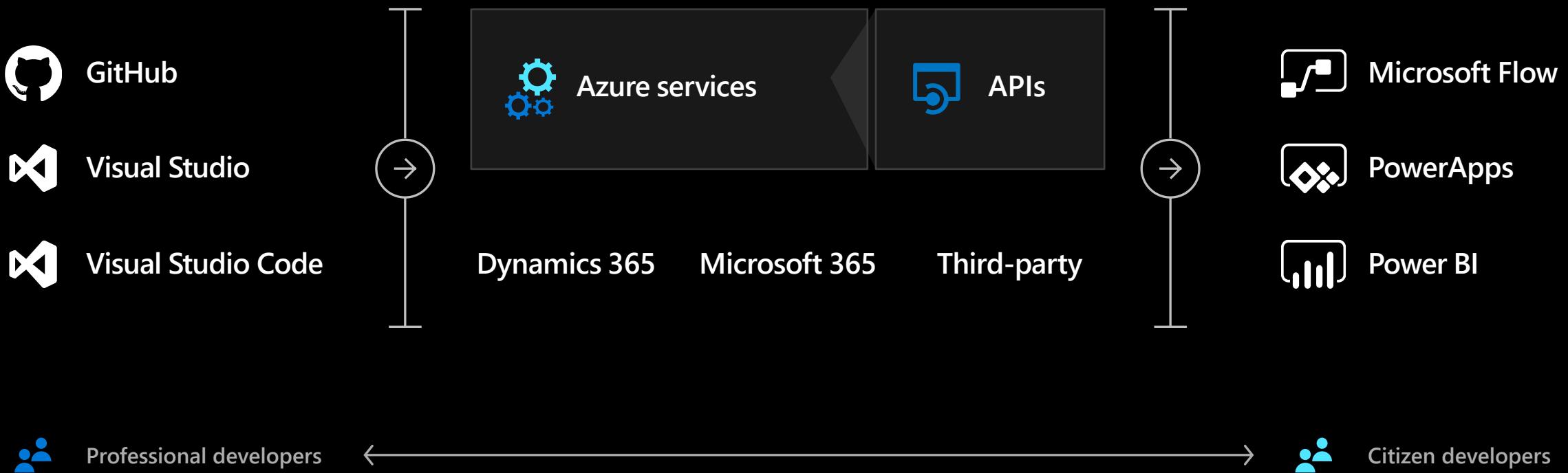
Development environments



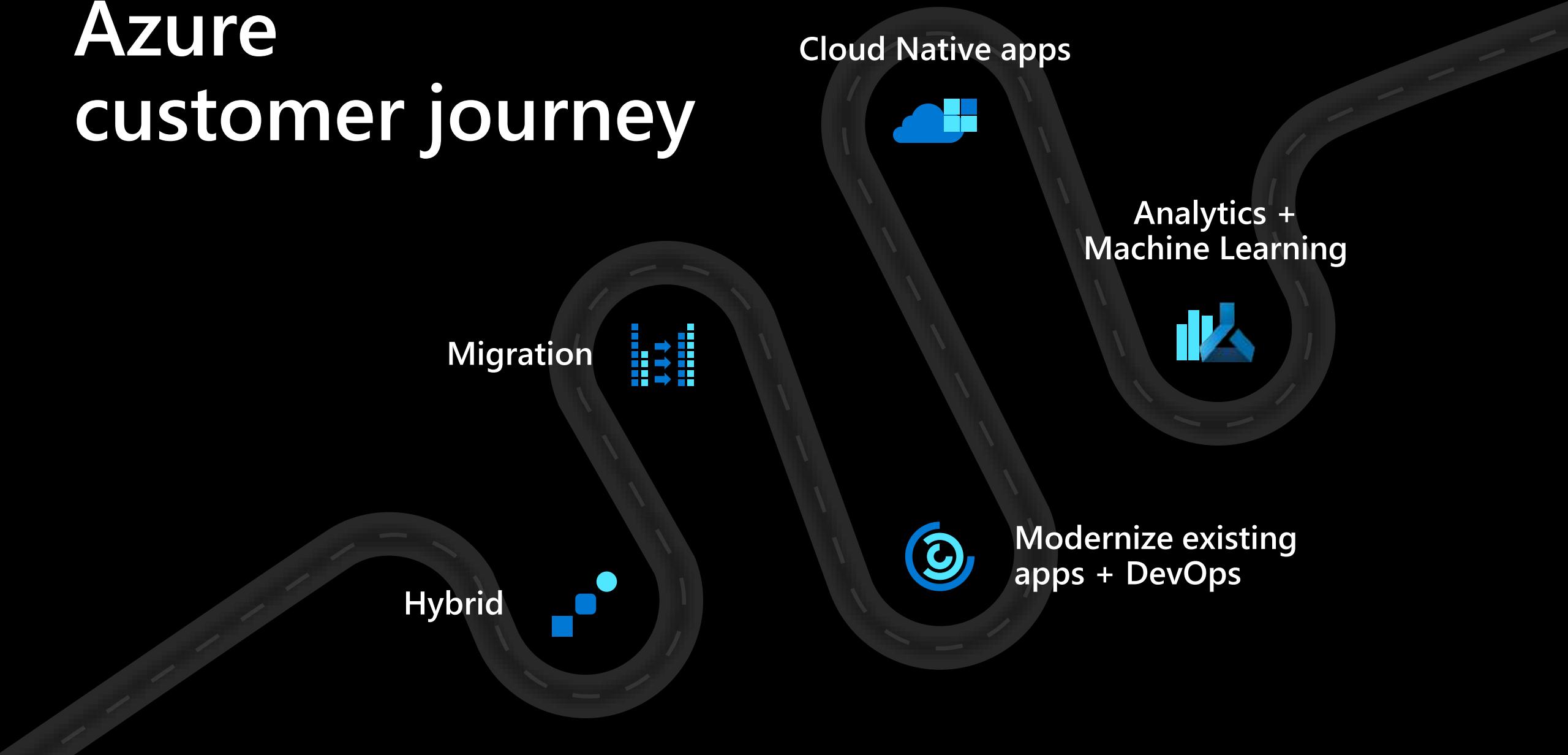
Infrastructure stack



# Microsoft Advantage

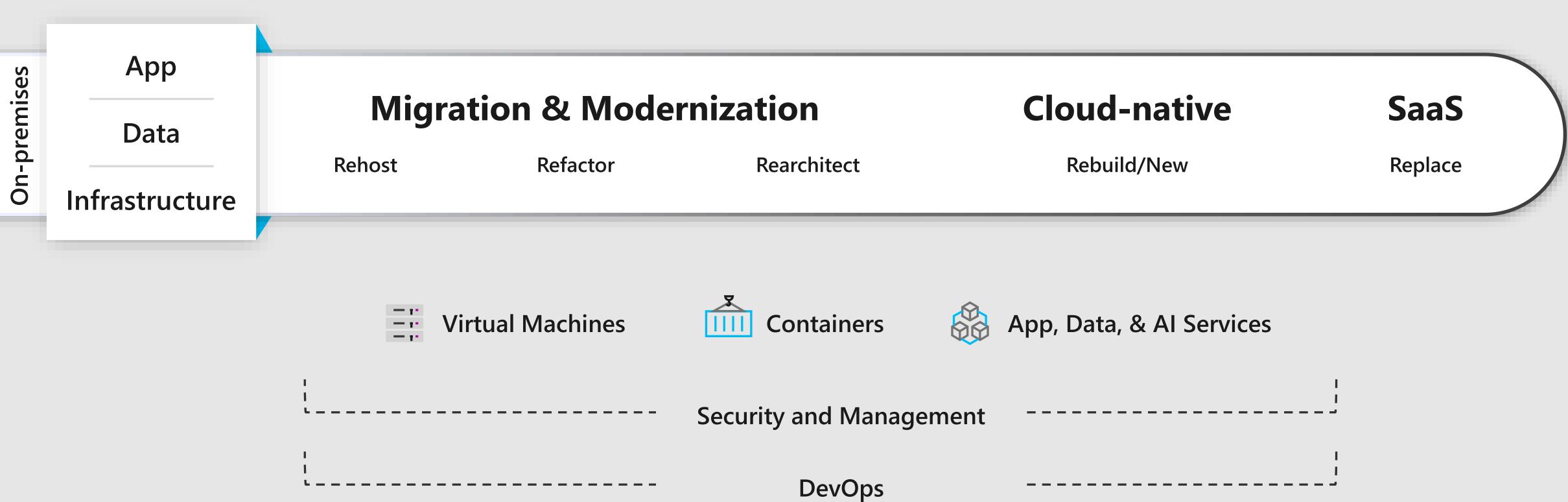


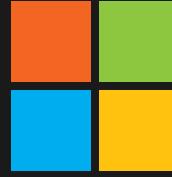
# Azure customer journey





# Customer cloud journey





# Microsoft Azure

---

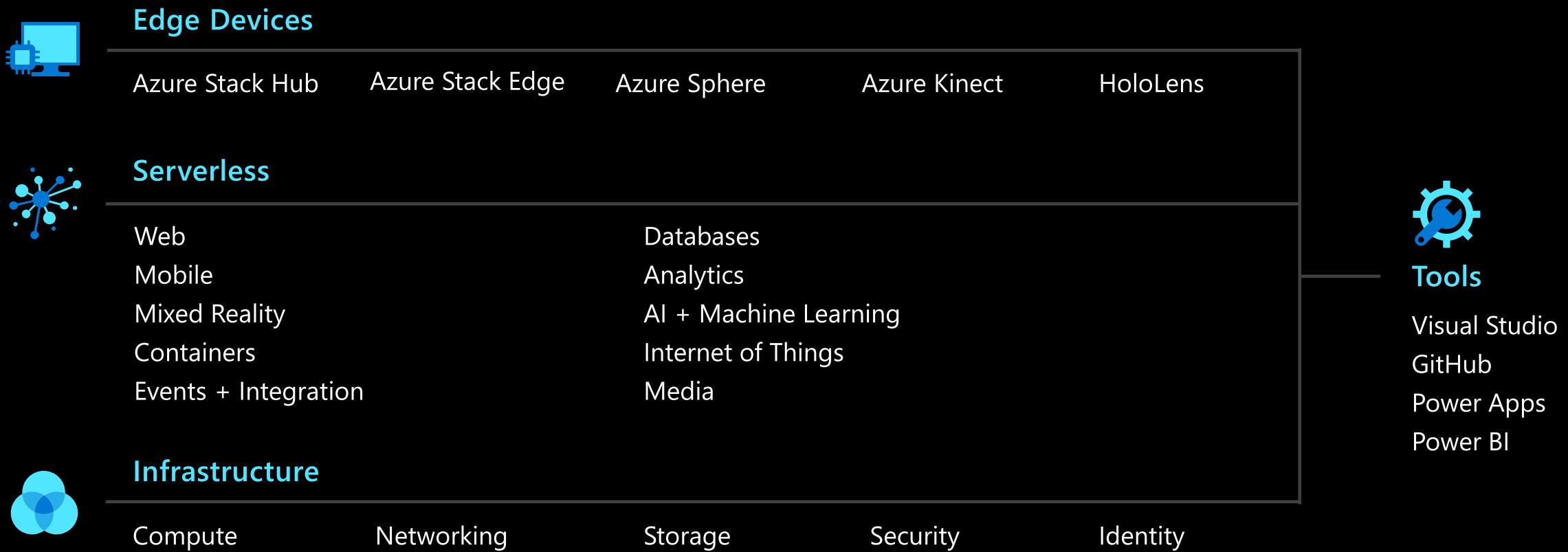
Be future  
ready

Build on  
your terms

Operate hybrid  
seamlessly

Trust  
your cloud

# What is Azure?



1,000 +

new capabilities

# Works with popular tools and frameworks

## Management



## Databases & middleware



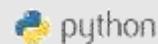
## Applications



## Infrastructure



## App frameworks



>95% of Fortune 500  
use Microsoft Azure





## Global



**58** Azure regions

Largest geographical footprint of any cloud provider with more than **58** Azure regions



## Secure



### Microsoft Cyber Defense Operations Center

>**3,500** full-time security professionals

**6.5 trillion** global signals daily

**\$1 billion** annual cybersecurity investment



## Compliant

**92**

Compliance offerings

### GLOBAL

- ISO 27001:2013
- ISO 27017:2015
- ISO 27018:2014
- ISO 22301:2012
- ISO/IEC 27701:2019
- ISO 9001:2015
- ISO 20000-1:2011
- SOC 1 Type 2
- SOC 2 Type 2
- SOC 3
- CIS Benchmark
- CSA STAR Certification
- CSA STAR Attestation
- CSA STAR Self-Assessment
- WCAG 2.0 (ISO 40500:2012)

### U.S. GOVT

- FedRAMP High
- FedRAMP Moderate
- EAR
- ITAR
- DoD DISA SRG Level 5
- DoD DISA SRG Level 4
- DoD DISA SRG Level 2
- DFARS
- DoE 10 CFR Part 810
- NIST SP 800-171
- NIST CSF
- Section 508 VPATs
- FIPS 140-2
- CJIS
- IRS 1075
- CNSSI 1253

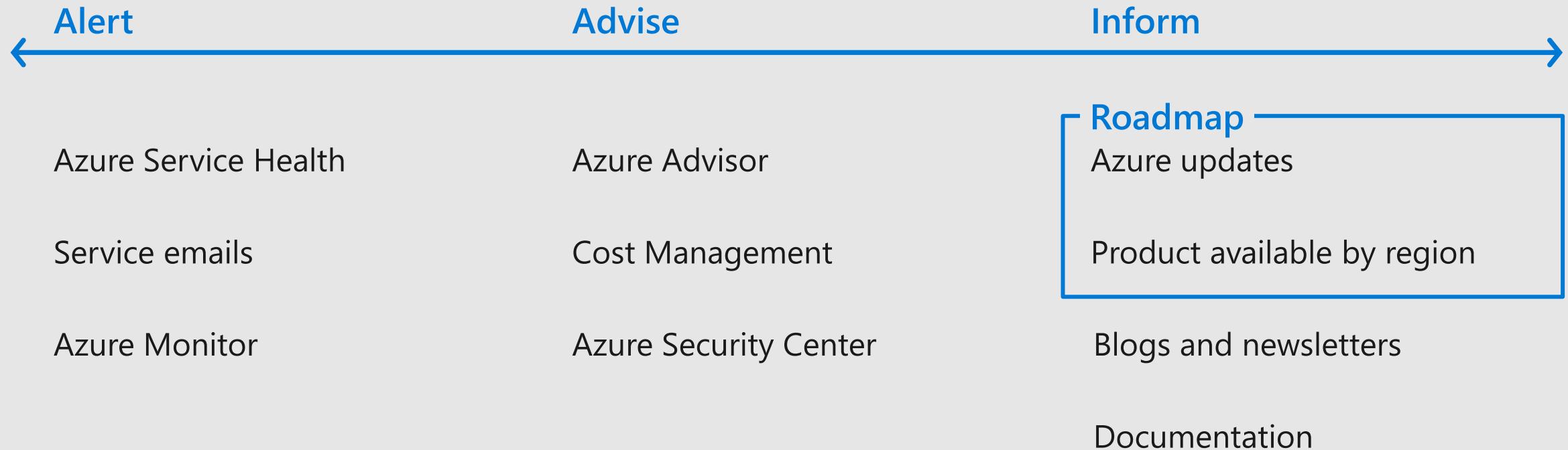
### INDUSTRY

- PCI DSS Level 1
- GLBA (US)
- FFIEC (US)
- Shared Assessments (US)
- SEC 17a-4 (US)
- CFTC 1.31 (US)
- FINRA 4511 (US)
- SOX (US)
- 23 NYCCR 500 (US)
- OSFI (Canada)
- FCA + PRA (UK)
- APRA (Australia)
- FINMA (Switzerland)
- FSA (Denmark)
- RBI + IRDAI (India)
- MAS + ABS (Singapore)
- NBB + FSMA (Belgium)
- AFM + DNB (Netherlands)
- AMF + ACPR (France)
- KNF (Poland)
- European Banking Authority (EBA)
- FISC (Japan)
- HIPAA BAA (US)
- HITRUST Certification
- GxP (FDA 21 CFR Part 11)
- MARS-E (US)
- NHS IG Toolkit (UK)
- NEN 7510:2011 (Netherlands)
- FERPA (US)
- CDSA
- MPAA (US)
- FACT (UK)
- DPP (UK)

### REGIONAL

- Argentina PDPA
- Australia IRAP Unclassified
- Australia IRAP PROTECTED
- Canada Privacy Laws
- China GB 18030:2005
- China DJCP (MLPS) Level 3
- China TRUCS / CCCPPF
- EU EN 301 549
- EU ENISA IAF
- EU Model Clauses
- EU – US Privacy Shield
- GDPR
- Germany C5
- Germany IT-Grundschutz workbook
- India MeitY
- Japan CS Mark Gold
- Japan My Number Act
- Netherlands BIR 2012
- New Zealand Gov CIO Framework
- Singapore MTCS Level 3
- Spain ENS High
- Spain DPA
- UK Cyber Essentials Plus
- UK G-Cloud
- UK PASF

# How does Azure communicate at scale?



## How we listen at scale:

Service telemetry      Support requests      User voice      Research      Events      Community

# Staying informed of changes in Azure

## [Azure.com/updates](#)

Azure updates is where you go for product updates and roadmap changes

Filter by products and the types of updates of interest

Subscribe to customized RSS Feed to stay informed on updates you care about

Includes packaging, licensing and region availability changes

## Azure updates quarterly retrospective

Azure updates quarterly retrospective is available on [Azure.com/Updates](#) to help make sense of the changes made in Azure each quarter.

The retrospective contains summary content around product updates (organized by product category) for each calendar year quarter, as well as global availability and compliance.

The screenshot shows the Azure Updates website. At the top left is the Microsoft logo. On the right, there's a sidebar titled "Product Updates" under "AI + Machine Learning". Below it is a section for "Azure Bot Service" with a brief description and a table of recent updates. The main content area features a large graphic with blue and white abstract shapes on a black background, with the text "Azure updates: Quarterly retrospective" and "April to June 2019".

Date	Status	Title
May 6, 2019	Available	Microsoft Bot Framework enhancements
May 6, 2019	In preview	QnA Maker now supports multi-turn dialogs
May 6, 2019	In preview	Language Understanding now has analytics dashboard
May 6, 2019	In preview	New series of Azure Bot Framework enhancements now available

[Back to table of contents](#)

**Azure Cognitive Services**

All of these new services and capabilities cater to the evolving needs of applying artificial intelligence (AI) to solve business problems.

In the Vision category, we added the Form Recognizer service for data entry automation and the Ink Recognizer service which enables developers to enhance productivity workflows from content by recognizing digitally inked content.

In the Decision category, we added the Personalizer service, the first reinforcement-learning-based AI service, that creates relevant experiences for each user to drive user

# Staying informed of changes in Azure

## [Azure.com/ProductsByRegion](#)

**Products available by region** shows what features/services are available and where

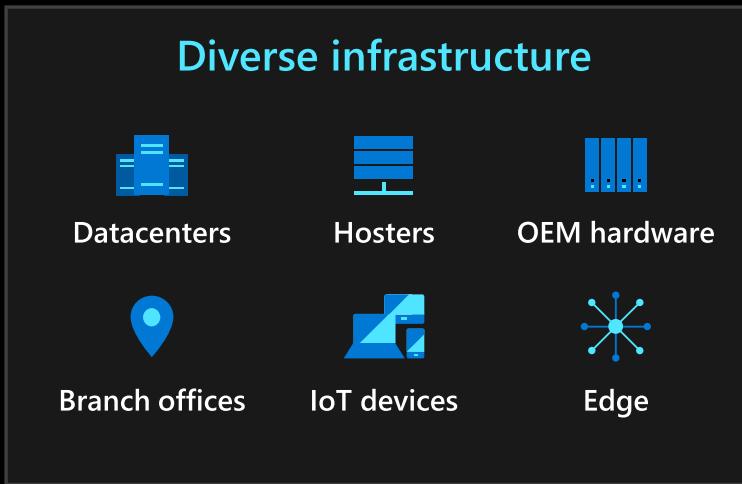
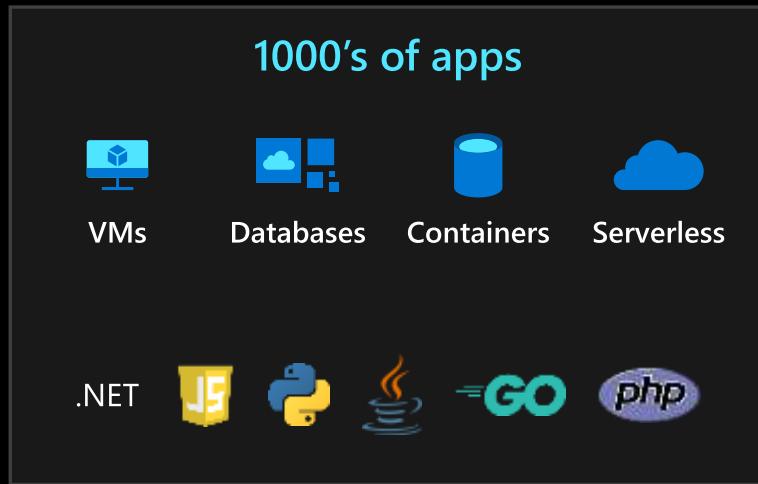
Source of truth—integrated with engineering roadmap tools to deliver future release timeframes for services in Preview or Future Availability

The screenshot shows the Microsoft Azure 'Products available by region' page. At the top, there's a navigation bar with links like Overview, Solutions, Products, Documentation, Pricing, Training, Marketplace, Partners, Support, Blog, More, and a 'Free account' button. Below the navigation is a breadcrumb trail: Azure global infrastructure / Products by region. The main title is 'Products available by region' with a subtitle: 'With 55 announced regions, more than any other cloud provider, Azure makes it easy to choose the datacenter and regions that's right for you and your customers.' A search bar at the top right contains the text 'sql'. Below the search bar, there are two tabs: 'Products' and 'Regions'. Under 'Products', there's a dropdown menu set to 'Browse' and a search input field with 'sql' typed into it. Below the search bar are three filter buttons: 'Azure SQL Database', 'Storage Accounts', and 'Azure Machine Learning'. To the right of the search bar, it says '56 of 56 selected'. The main content area is a table titled 'TABLE 10E'. The table has columns for 'Products' and regions: BRAZIL, CANADA, CHINA, and EUROPE. The 'Products' column lists services: Azure SQL Database, SQL Data Sync, Managed Instance, Storage Accounts, Archive Storage, Disk Storage, Hot/Cool Blob Storage Tiers, Import/Export, and Azure Data Lake Storage Gen2. The 'BRAZIL' column has checkmarks for all services except Managed Instance. The 'CANADA' column has checkmarks for all services except Managed Instance. The 'CHINA' column has checkmarks for all services except Managed Instance. The 'EUROPE' column has checkmarks for all services except Managed Instance. In the 'Managed Instance' row under the 'BRAZIL' column, there is a tooltip 'GA expected Q4 2019'.

# Azure works with what you use



# Customer environments are increasingly complex



How to best enable innovation and developer agility?

How to govern and operate disparate environments at scale?

How to ensure integrated security across the entire organization?

# Azure Hybrid

Innovation anywhere with Azure



## Azure IoT

Any edge device



## Azure Arc

Any datacenter, any cloud



## Azure Stack

Integrated systems

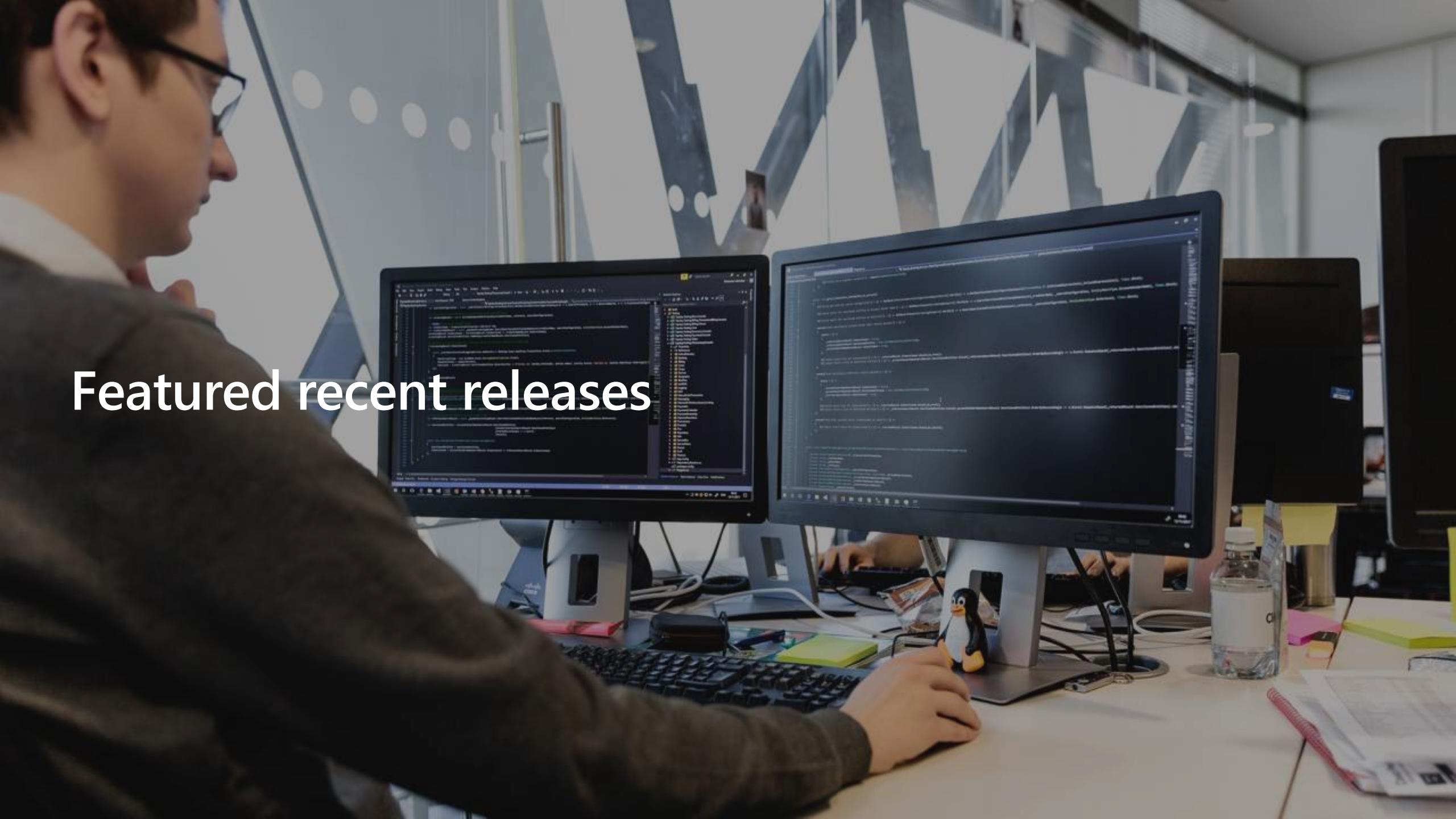


Management

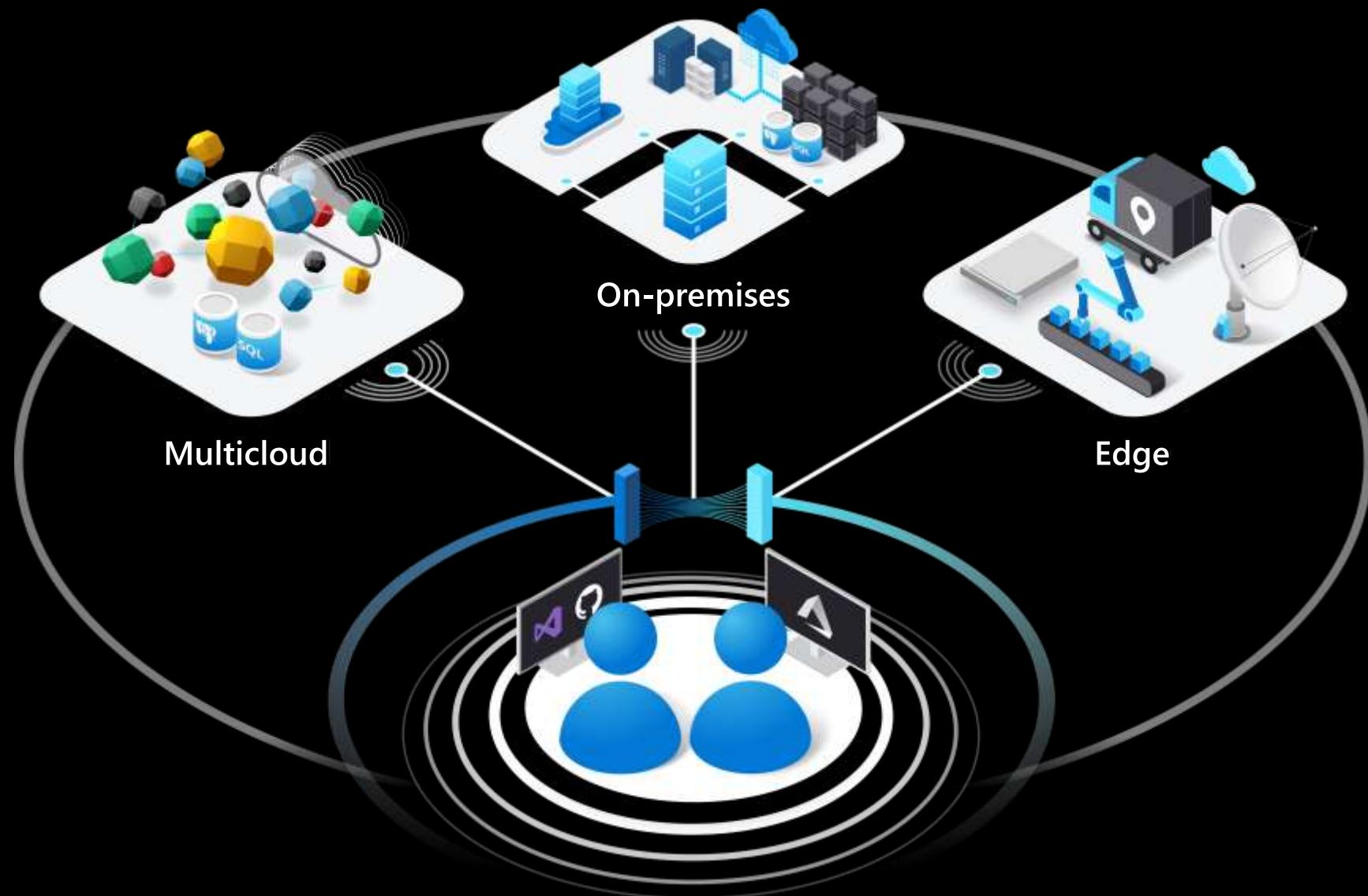
Security + Identity

App + Data Services

Dev Tools + DevOps

A photograph of a man with glasses, seen from the side and wearing a dark jacket over a white shirt, working at a desk. He is looking at two computer monitors that display code in a dark-themed IDE. The background shows a large window with a view of a modern building's glass facade.

Featured recent releases



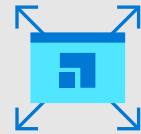
Public Preview  
Released @ Ignite  
November 2019

# Azure Arc

Bring Azure services and management to any infrastructure



Run Azure data  
services anywhere



Extend Azure management  
across your environments



Adopt cloud  
practices on-premises



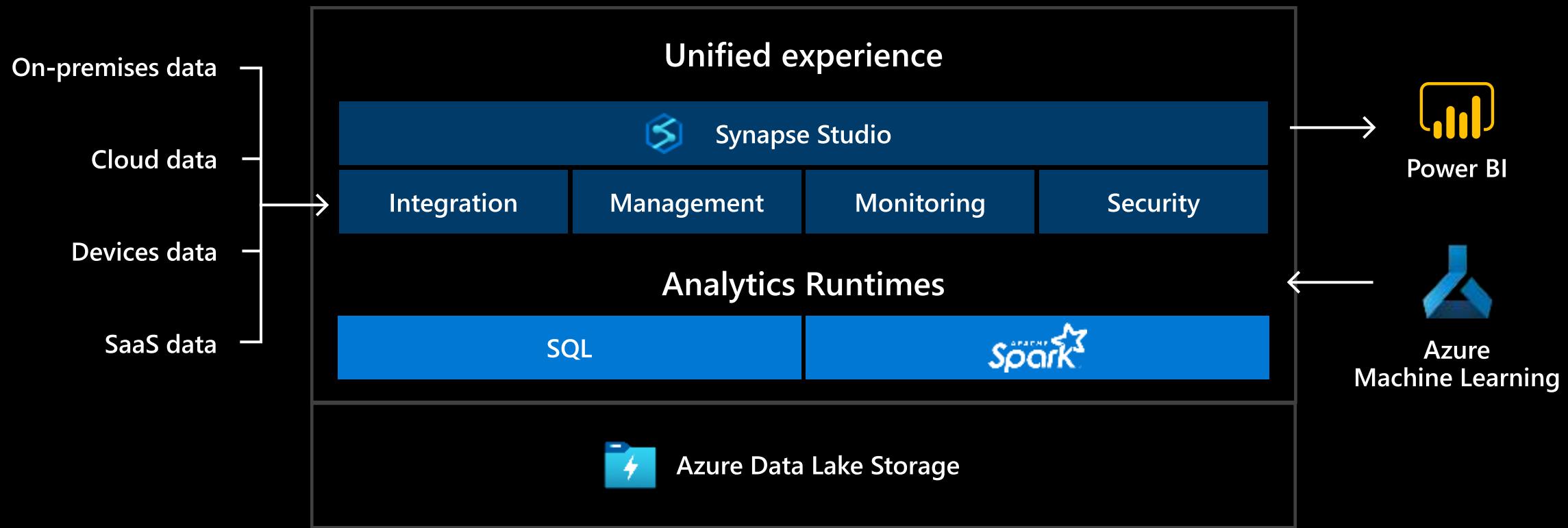
Implement Azure  
security anywhere

Azure Arc is a set of technologies that extends Azure management and enables Azure services to run across on-premises, multi-cloud, and edge.

Azure Arc server management for Windows and Linux is in Public Preview .

# Azure Synapse Analytics

Limitless data warehouse with unmatched time to insights



# Azure Synapse Analytics

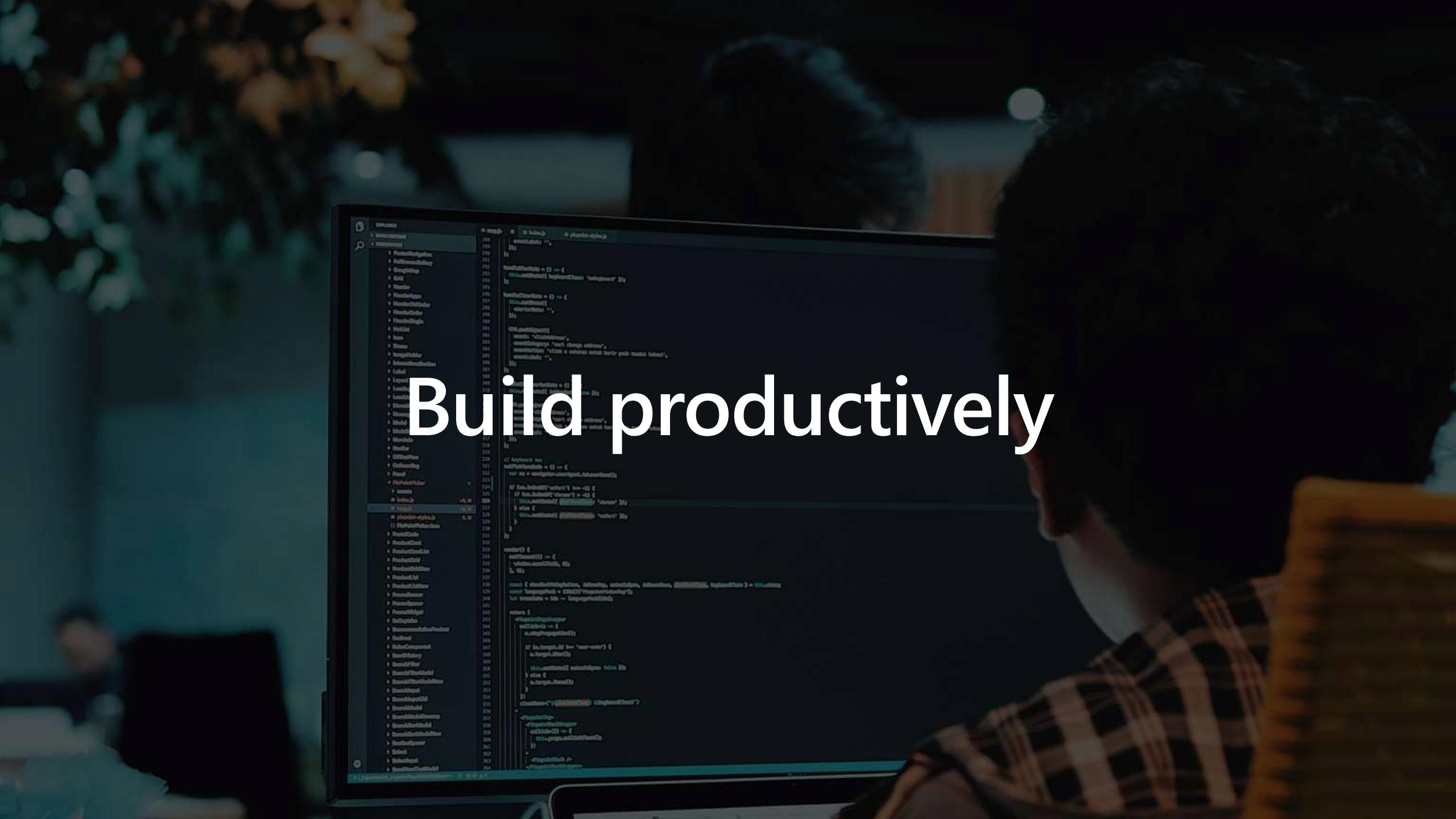
GA & preview features  
Released @ Ignite  
November 2019

**Azure Synapse is the next evolution of Azure SQL Data Warehouse.**

Azure Synapse is a limitless analytics service that brings together enterprise data warehousing and Big Data analytics. It gives you the freedom to query data on your terms, using either serverless on-demand or provisioned resources—at scale. Azure Synapse brings these two worlds together with a unified experience to ingest, prepare, manage, and serve data for immediate BI and machine learning needs.

[Learn more](#)

Azure Synapse Analytics features		
	GA	Preview
Limitless scale		
Provisioned compute (data warehouse)	✓	
Materialized views	✓	
Workload importance	✓	
Workload isolation	✓	
On-demand query	✓	
Powerful insights		
Power BI integration	✓	
Azure Machine Learning integration	✓	
Data lake exploration	✓	
Streaming analytics (data warehouse)	✓	
Apache Spark integration	✓	
Unified experience		
Hybrid data ingestion	✓	
Azure Synapse studio	✓	
Unmatched security		
Column- and row-level security	✓	
Dynamic data masking	✓	
Private endpoints	✓	

A person with dark hair and a plaid shirt is seen from the side, working at a computer. The screen displays a dark-themed code editor with Java code. The code includes imports like 'import java.util.\*' and 'import org.openqa.selenium.\*'. It features several nested if statements and switch cases, including logic for 'if (tempoId == "new-new")', 'if (tempoId == "tempoOld")', and 'if (tempoId == "tempoOldOld")'.

Build productively

# Complete toolchain for developers



Visual Studio



Azure DevOps



GitHub

## 2014

Satya "Microsoft loves Linux"

.NET foundation created

## 2015

VSCode released

HDIInsight (Hadoop/Ubuntu) announced

Microsoft jointly forms Node.js foundation

## 2016

.NET Core 1.0

PowerShell Core

SQL on Linux announced

Windows Subsystem for Linux in Windows 10

Microsoft joins Linux foundation

## 2017

Microsoft Azure Kubernetes Service launched

Draft, Brigade, Kashti projects submitted to Kubernetes community

Microsoft joins Cloud Native Computing & Cloud Foundry Foundations

Azure Database for Postgres & MySQL announced

Azure Databricks (Apache Spark) announced

## 2018

VSCode ranked #1 developer tool (Stack Overflow, 2018 language survey)

Service Fabric Open Sourced

Azure Sphere with Linux kernel

GitHub intent to acquire announced

~5,000 Microsoft employees committing to open source projects on Github

Azure trending to 50% Linux

2014

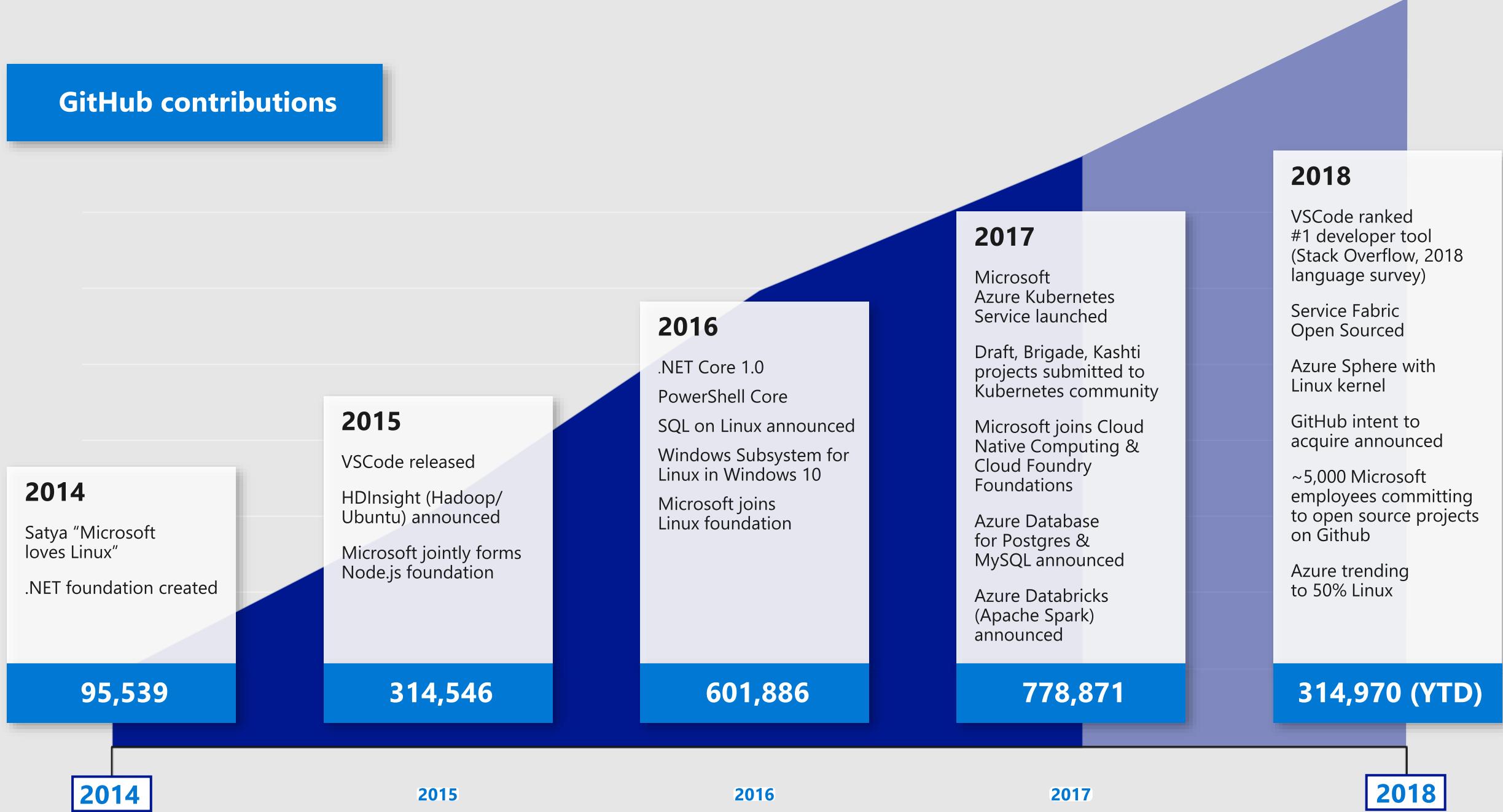
2015

2016

2017

2018

## GitHub contributions



# Top Dev Tools measured by Stack Overflow survey

Source: Stack Overflow Developer Survey Results 2019

**50.7%**

#1 Visual Studio Code

**31.5%**

#2 Visual Studio



**40M+**

developers

# GitHub

The largest developer community  
on the planet



# Microsoft Learn

Interactive step-by step tutorials

Hands-on learning & coding environments

Knowledge checks to validate learning & earn achievements



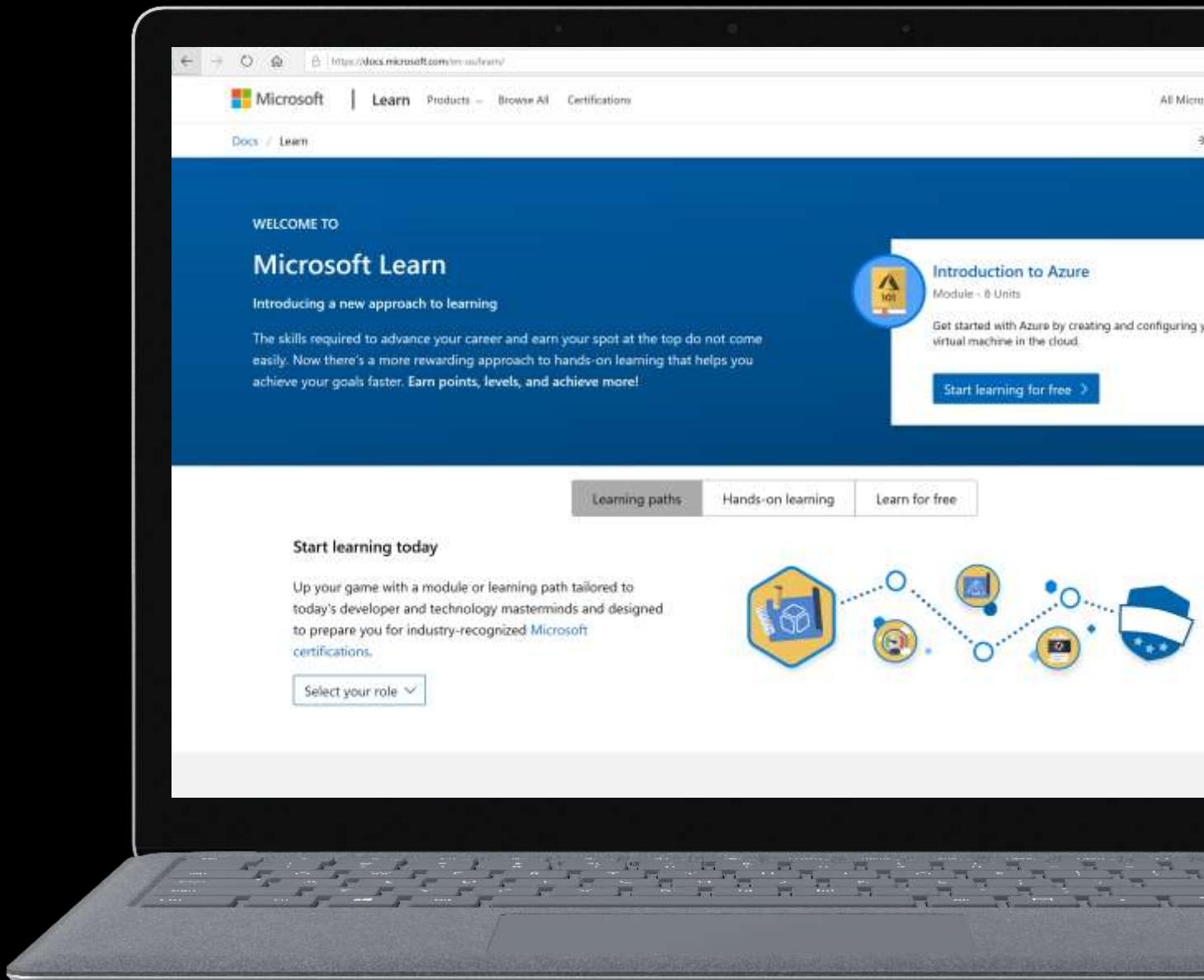
[Microsoft.com/Learn](https://Microsoft.com/Learn)

# Microsoft Learn

Hundreds of learning paths,  
completely free

Step-by-step tutorials

Browser-based interactive  
coding environments



**“As for the future, your task is not  
to foresee it, but to enable it.”**

Antoine de Saint-Exupéry



감사합니다 TEŞEKKÜRLER

DANK U WEL СПАСИБО

ευχαριστώ OBRIGADO

ଧତିଲ MULTUMESC ଧନ୍ୟତା

HVALA SALMAT PO MERCI

# Thanks

Questions?



<https://github.com/anbened>



<https://twitter.com/anBenedetti>



<https://www.linkedin.com/in/abenedetti/>