Azure

Your vision, your results, your cloud

Microsoft

Engage your customers

Transform your products

Digital transformation

Empower your employees

Optimize your operations
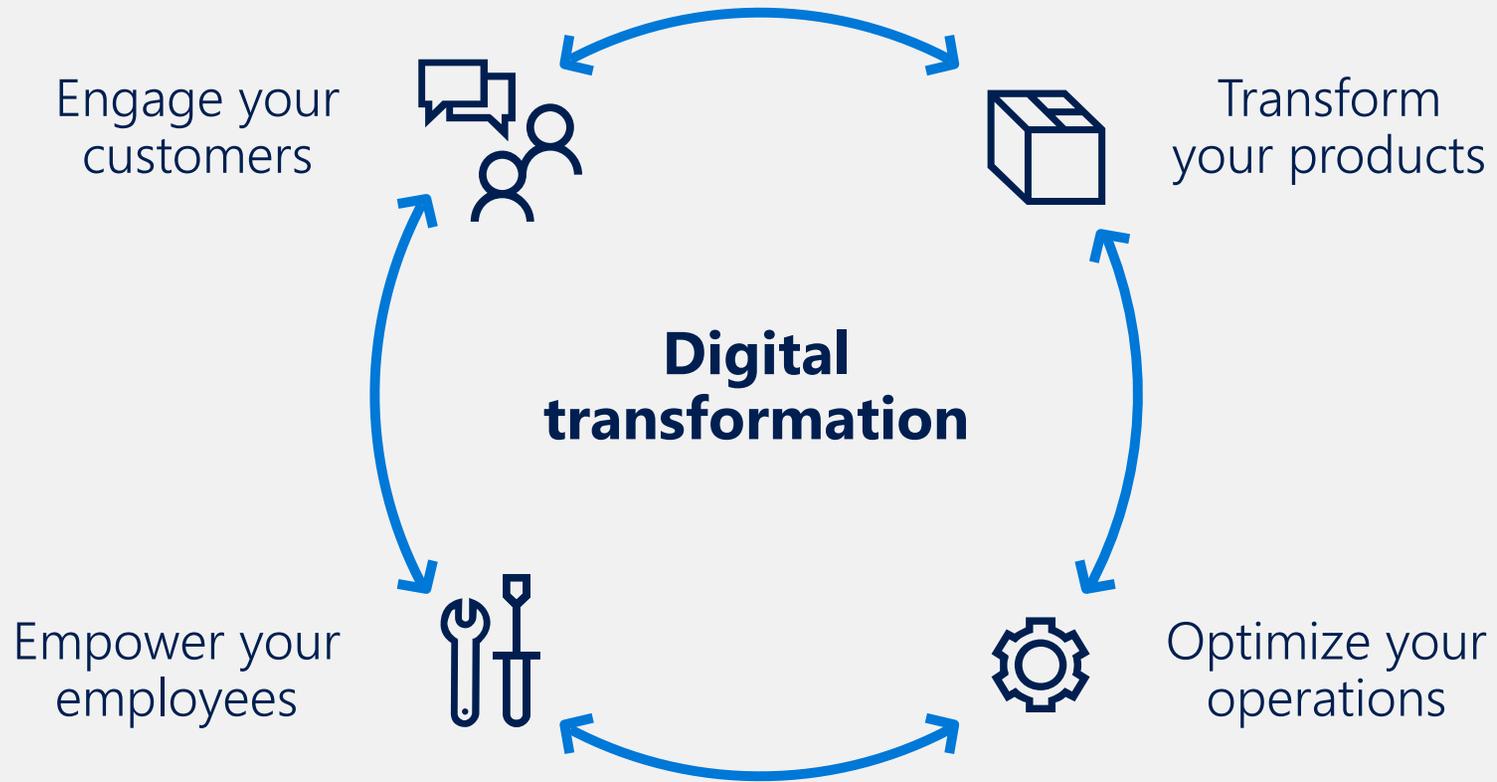
Going digital

1 million/hour
new devices coming
online by 2020

12 years average
age of S&P 500
corporations by 2020

60% computing
in the public cloud
by 2025
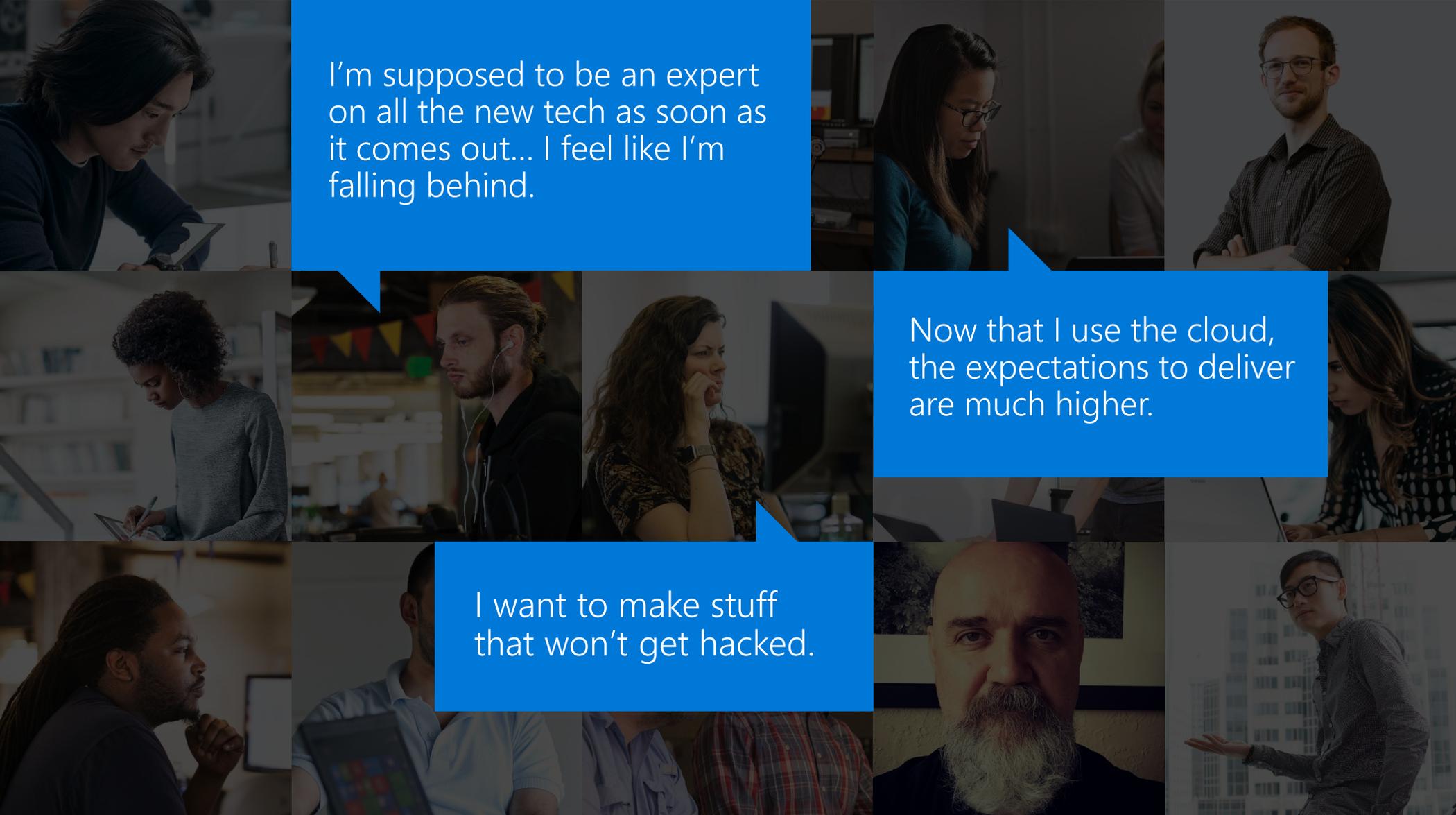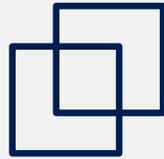
Productive   Hybrid   Intelligent   Trusted

Azure. Cloud for all.
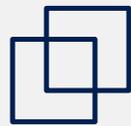
Productive   Hybrid   Intelligent   Trusted

Productive

Hybrid

Intelligent

Trusted

Visual Studio + Microsoft Azure
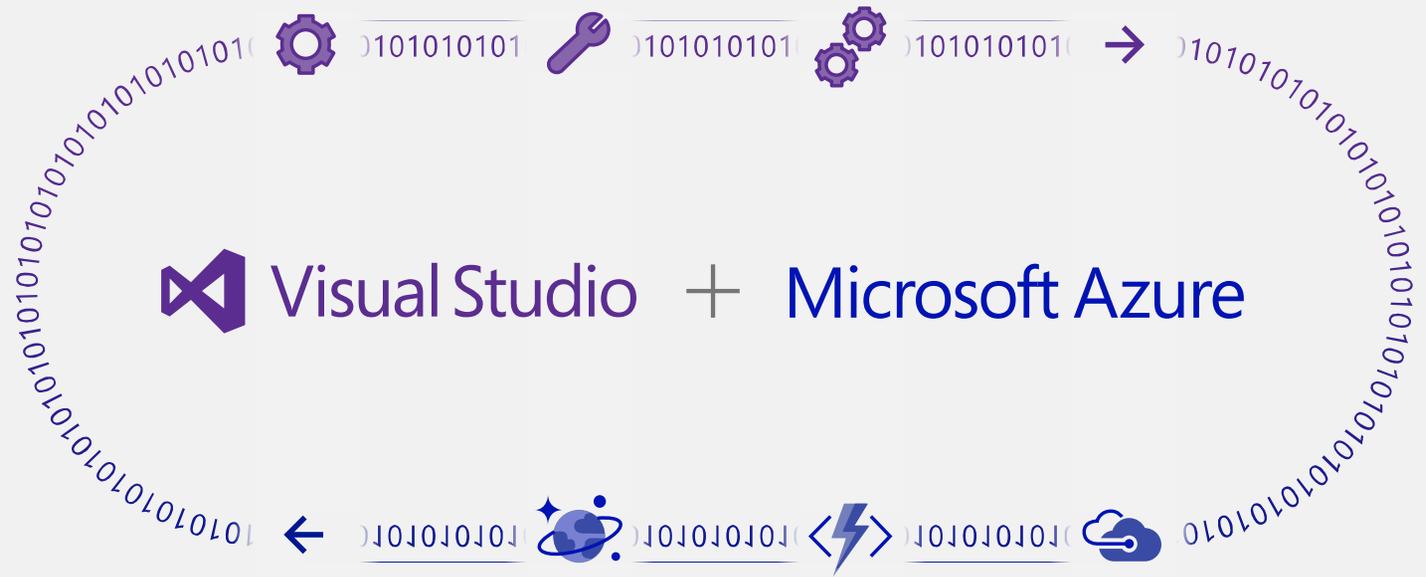
Productive
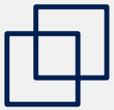
Hybrid

Intelligent

Trusted

Azure Active Directory	Azure Data Services	Azure Services	Azure Security & Management
↑	↑	↑	↑
Common Identity	Data Platform	Unified Development	Security & Management
↓	↓	↓	↓
Active Directory	SQL Server	Azure Stack	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
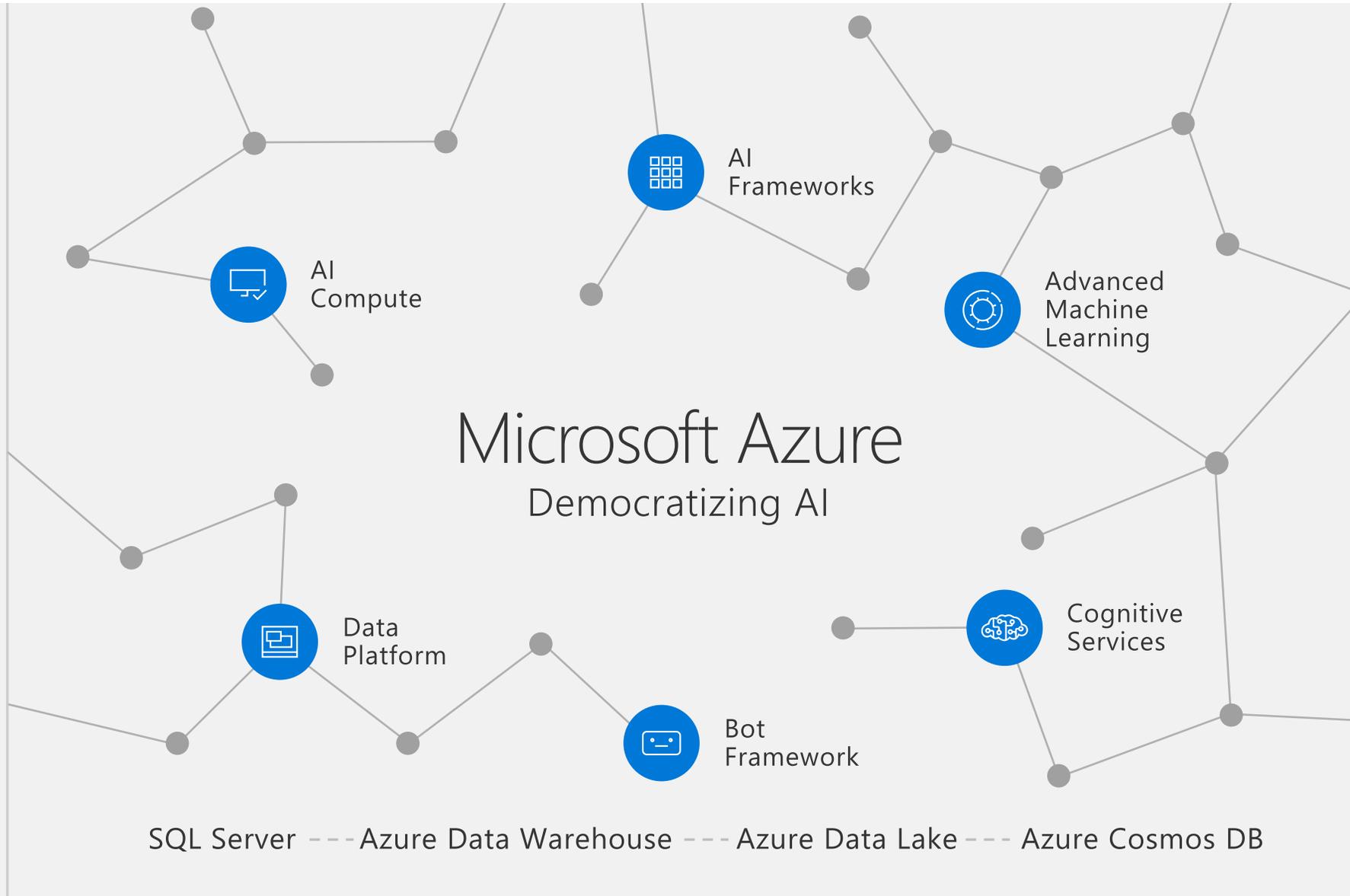
Intelligent

Trusted

ISO 27018

ISO 27001

ITAR

Cloud Controls Matrix

FedRAMP

DISA Level 2

CJIS

HIPAA/HITECH

EU Safe Harbor

European Union
Model Clauses

United Kingdom
G-Cloud

China Multi-Layer
Protection Scheme

Productive

Hybrid

Intelligent
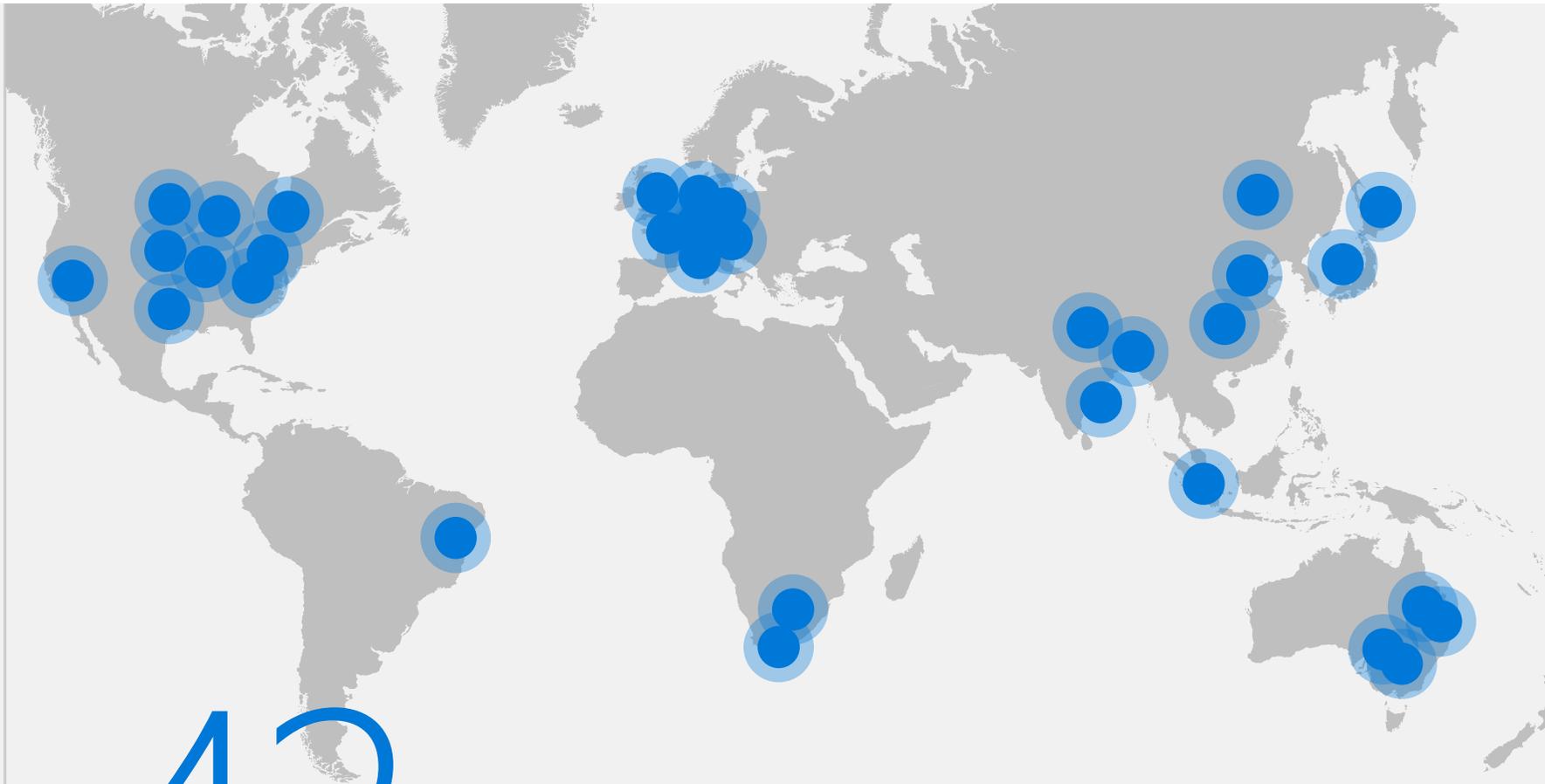
Trusted

42 Azure regions

Productive

Hybrid

Intelligent

Trusted

Microsoft.com/datacenter
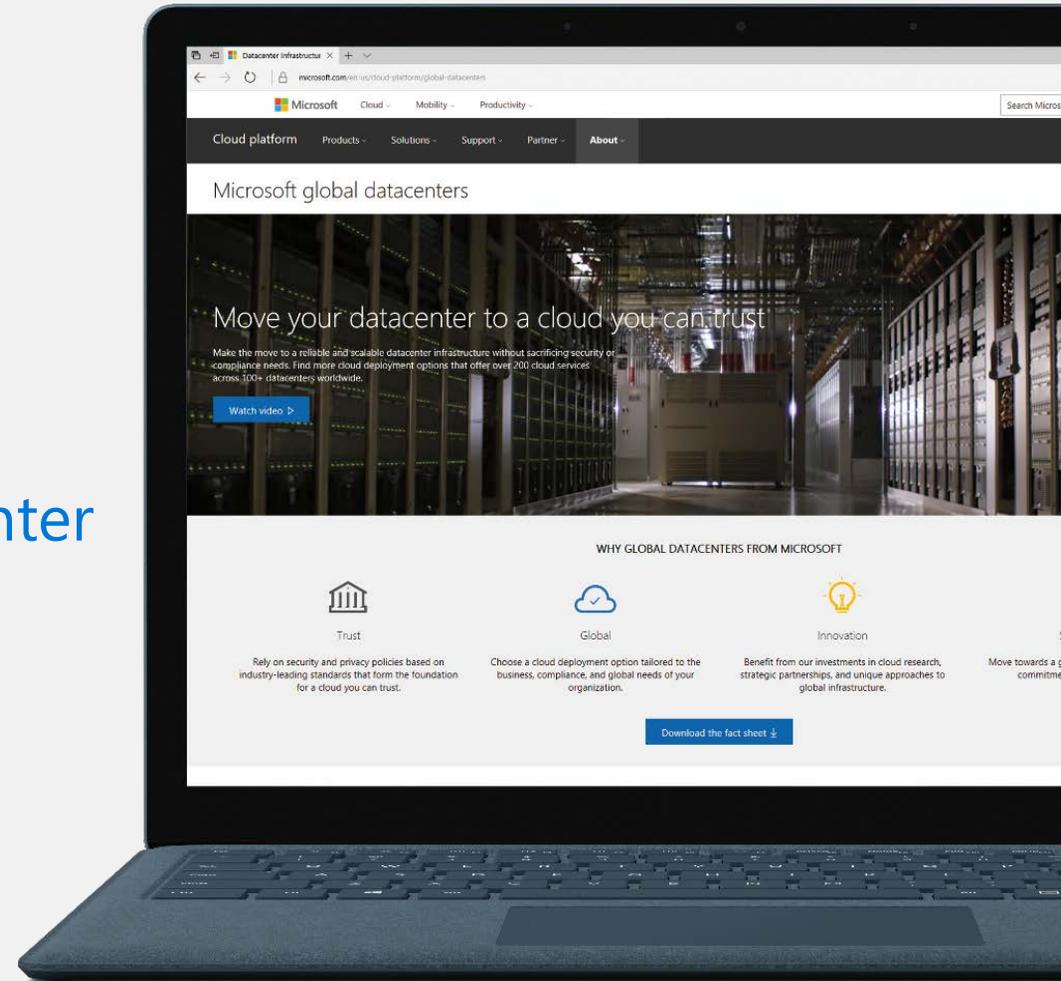
Azure. Cloud for all.
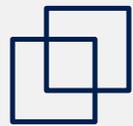
Productive   Hybrid   Intelligent   Trusted

Azure

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

Web + Mobile	Identity Management
Internet of Things	Data + Analytics
Microservices	Cognitive Services
Serverless	High Performance Compute

CORE INFRASTRUCTURE

Compute   Storage   Networking   Security

Azure Stack + Hybrid

Tools

Modernize DevOps solutions with Visual Studio

Mobile DevOps

Code Repository → Build + Deploy → Test Cloud → User Beta Testing

Backlog ← Monitor/Analytics ← (User Beta Testing)
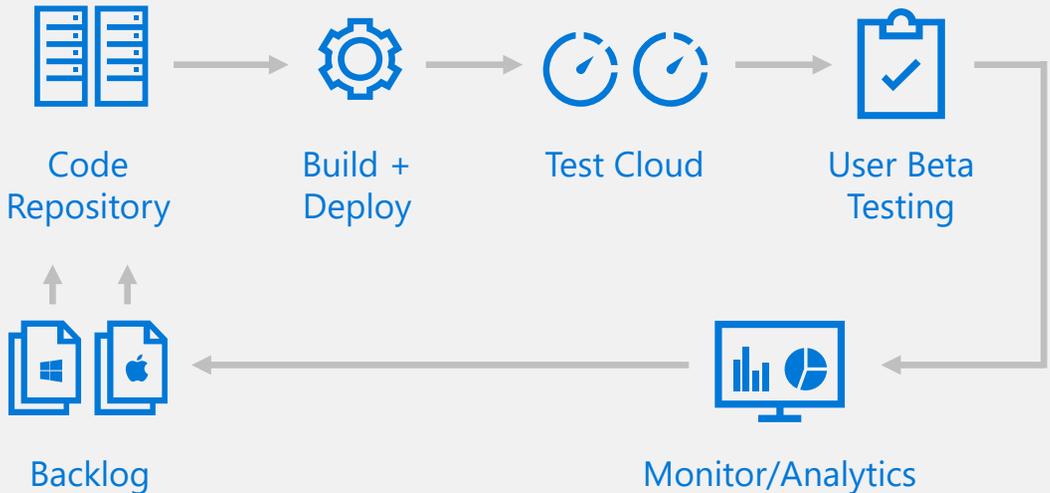
Mobile back-end services

Cloud and offline data

User authentication

Push notifications

Build and innovate with choice and flexibility

DevOps	Nagios	VAGRANT		GRUNT		android		Xamarin		
Management	CHEF	puppet labs	ANSIBLE	SALTSTACK			mist.io	libcloud		SCALR CLOUD MANAGEMENT
Applications	WordPress	Joomla!	Drupal	GitHub	APPRENDA					
App frameworks & tools	php	nodeJS	Python	JS	Ruby	IJ	eclipse			
Databases & middleware	Hadoop	redis	CLEARDB	cloudera	MySQL	mongoDB		Couchbase		
Infrastructure	Linux	ubuntu	redhat	SuSE	Debian	bitnami	ORACLE LINUX	freeBSD	docker	

CARMAX®

Scenario

Deliver faster response to 16 million site visitors each month.

Move toward a Dev/Ops model in which software engineers can provision development infrastructure and accelerate the development of new digital services.

Reduce storage costs and gain scale for website images.

Solution

"Azure Storage provided effectively limitless storage with read-accessible geo-replication, so we could deliver increased capability and resilience that was cost-effective."

Generate images of different sizes on the fly, and cache them for use when needed by various consumer devices.

Modernize the site, making it 100 percent mobile-friendly, and move to a dynamic Dev/Ops development paradigm.

Impact

Tripled the number of images stored and achieved the ability to deliver the right image to the right device.

"Azure PaaS gave us access to a complete set of capabilities such as Azure Redis Cache that we didn't have to build ourselves."

"With rapid access to development resources in Azure, we can set up environments, try, fail, repeat. Our whole innovation model speeds up with Azure PaaS."

Advanced workloads

Build with a platform designed for future growth

App service

Web, mobile, and API apps

DevTest Labs

Integrate with your existing toolchain
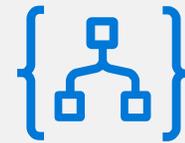
Logic apps

Workflow and integration

Cosmos DB

Globally distributed, multi-model database service

RECENT ANNOUNCEMENTS

[Scalable quantum computing](#)

[Azure Container Instances Service](#)

[Cosmos DB and Azure Functions native integration](#)

Add a natural, human touch with Cognitive Services

Vision	**Speech**	**Language**	**Knowledge**	**Search**
Computer Vision	Speech-to-text and text-to-speech service	Natural Language Processing	Knowledge Exploration Service	Bing Search
Listening... 🎤	Listening... 🎤	Listening... 🎤	Listening... 🎤	Listening... 🎤
Object recognition...	*Convert this text to speech please...*	*Play today's conference call...*	*Top publications in AI...*	*Fraud prevention results...*
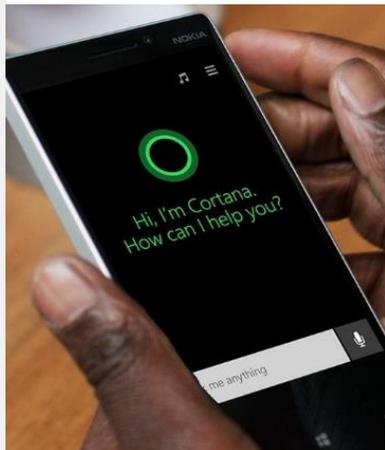
Policy violation: Jackhammer unstable orientation detected in the workshop

Hi, I'm Cortana. How can I help you?

Natural Language Processing

```
Intent: PlayCall
Content: Customer#
DateTime.date: today
```

▶

Now Playing

11/29/2016 Customer Call

Genetic Algorithms in Search, Optimization Learning
1989, David E Goldberg
Cited 18,910 times

Induction of Decision Trees
1986, Machine Learning
J R Quinlan

decision tree   expert system   machine learning   compute
Cited 4,819 times

Outline of a New Approach to the Analysis of Systems and Decision Processes
1973, IEEE Transactions on Systems, Man, and Cybernetics, iss
Lotfi A Zadeh (University Of California Berkeley)

fuzzy set   complex systems   artificial neural network   com
machine learning   artificial intelligence   computer science
Cited 2,602 times

How ID theft victims' in
nment documents or benefits
Credit card fraud
Phone or utilities fraud
Bank fraud   8.
Employment-related fraud   4.8%
Attempted identity theft   4.8%
Loan fraud   4.4%
Other
sion Consumer Sentinel Network Data Book,

Simplify IoT with preconfigured solutions

Street sweepers

Buses

Cows

Vending machines

Buildings

Postboxes

Auto

Oil equipment

Aircraft

Power plant

IoT

Electric charging stations

Factory floor

Dogs

Racing

Trucks

Power tools

Mining equipment

Medical devices

Elevators

Oil distribution

Engines

Smart meters

Surveillance

Smart grids

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)

Empower your decisions with business insights

Back-end power

Big data

Web data

Traditional data
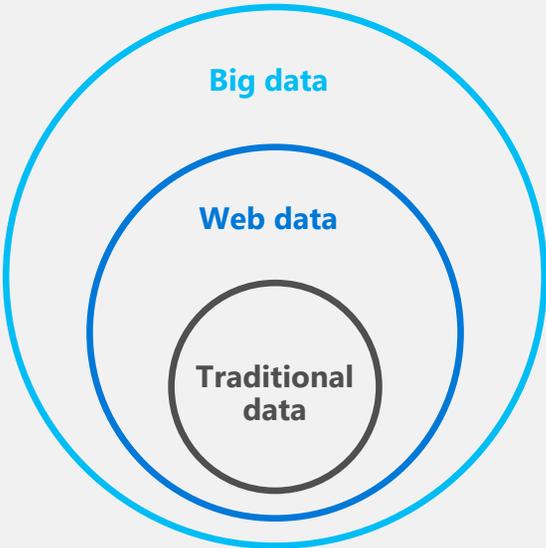
Front-end insights

Predict customer needs with powerful tools

Azure Machine Learning templates

📈 Demand forecasting

🔧 Predictive maintenance

🚗 Vehicle telemetry

Azure Machine Learning services

Data

☁️
CLOUD
↕️
Big data
Web data
Traditional data

Modeling & APIs

🖥️
ML WORKBENCH
↕️
☁️
API
↕️

Clients

↔️
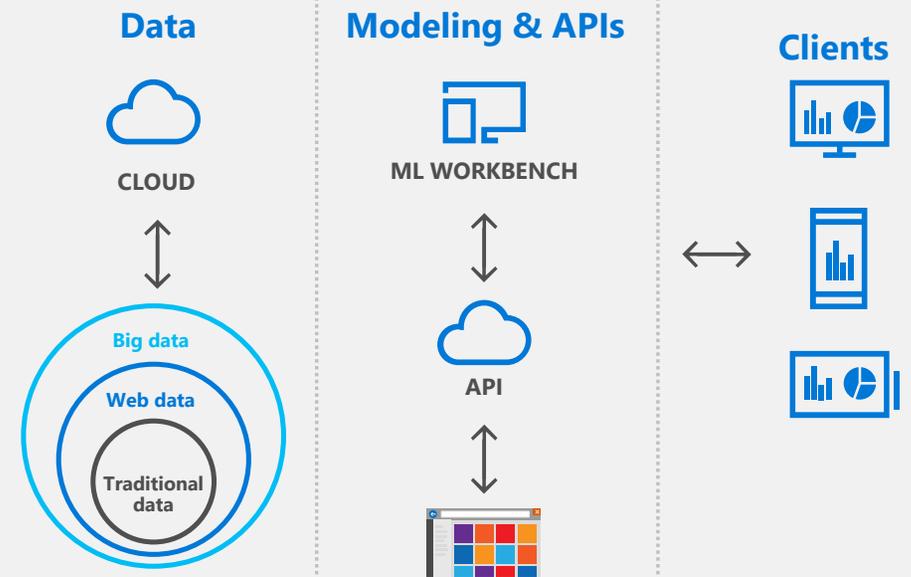
RECENT ANNOUNCEMENTS

ML workbench | ML experimentation service | ML Model Manager service

FRAME

Scenario

Need to run heavy 3D applications in the public cloud from any device, with just a browser.

Typically costs 5-10k to run graphics applications.

VMs take months to set up.

Solution

NVIDIA Tesla graphics

Fastest performance workstation

Deliver service in minutes vs. months.

Performance that was approximately 28 percent faster than AWS G2.2xlarge VMs.

Can run Autodesk Revit, AutoCAD, and demanding Windows applications on a MacBook, iPad, Chromebook, or any low-performance device.

Impact

"Azure GPUs are faster than the AWS GPUs because Azure uses a newer-generation GPU architecture," Boitano says. *"The Azure N-Series VMs also have a larger frame buffer, so customers can host larger scene sizes."*

Deliver a massive online course with capacity for 1,000 students. With Frame, it took an hour to set up the environment, and the customer paid for it only as long as the team used it.

FRAME

High performance computing

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

Web + Mobile

Internet of Things

Microservices

Serverless

Identity Management

Data + Analytics

Cognitive Services

High Performance Compute

Azure

Azure Stack + Hybrid

CORE INFRASTRUCTURE

Compute   Storage   Networking   Security

SANDVIK
Coromant

Scenario

High quality, precision instrument manufacturing.

In-depth knowledge of machining and tooling processes.

Desire to improve efficiency, reliability and cost-effectiveness.

Empower customers to make best possible business decisions.

Solution

Convert experience to digital knowledge and apply machine learning to provide predictive maintenance.

Leverage Azure IoT Suite to collect sensor data.

Embed intelligence with Azure Machine Learning and Streaming Analytics.

Integrate into Dynamics 365 for Field Service.

Impact

Help operators and technicians make better decisions based on objective integrated production data.

Set up predictive maintenance schedules and set alarms to take machines offline before failure.

Support resource planning and ROI decisions.

KENNAMETAL®

Scenario

12,000 employees, customers in 60 countries.

Material analytics compares thousands of different existing combinations.

Uncontrolled documents becoming a potential security risk.

Solution

Already moving to Office 365 and Dynamics CRM.

Power BI for easy data analytics and visualization.

Windows 10 tablets for mobile access.

Cortana integration with natural language search.

Impact

Natural language querying and rich visualization tools make data more straightforward and accessible.

"Power BI is just way more fun"

Leverage intellectual property to introduce products up to 20% faster.

KENNAMETAL®

BI + analytics

Azure

Azure Stack + Hybrid

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

Web + Mobile   Identity Management

Internet of Things   Data + Analytics

Microservices   Cognitive Services

Serverless   High Performance Compute

CORE INFRASTRUCTURE

Compute   Storage   Networking   Security

fz = 0,03 mm
.0019 ipt

12
.4724

vf = 2865 mm/min

Scenario

Want to improve elasticity, performance and costs of datacenter assets.

7,000 employees across multiple locations and time zones.

60 manufacturing facilities.

Manufacturing siloed geographically.

SAP reports taking hours to generate, delaying business decisions.

180 SAP servers.

Solution

Mixed environment of Windows and Linux moved to the cloud.

Comprehensive Azure security capabilities.

SAP HANA on Azure:

- Four regional instances of SAP ECC

- One consolidated instance of ERP suite

Impact

Moved 75% of datacenter infrastructure to cloud, planning for 90%.

Significantly lower capital and operating costs.

Consistent levels of security, more responsive when threats identified.

Reports that took 6 hours now done in 6 minutes.

Can now adopt same day planning and rush orders.

COATS

SAP on Azure

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

Azure

ADVANCED WORKLOADS

Web + Mobile

Internet of Things

Microservices

Serverless

Identity Management

Data + Analytics

Cognitive Services

High Performance Compute

CORE INFRASTRUCTURE

Compute   Storage   Networking   Security

Azure Stack + Hybrid

Core infrastructure

Leverage a secure and well-managed infrastructure

Compute

Virtual machines
Availability sets
VM scale sets
Controlled maintenance
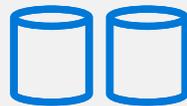
Storage

Disks
Blob storage
File sync

Networking

Virtual networks
VPN, ExpressRoute
Load Balancer
DNS, Traffic Manager
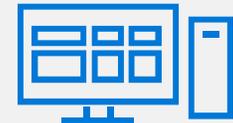
Management

Log analytics
Cloud Shell
Site Recovery
Security Center

RECENT ANNOUNCEMENTS

Azure Cost Management | Azure Availability Zones | Reserved VM instances

GENERALI

Backup,
Archive, DR

Scenario

One week lead-time for back-up restoration.

After 9/11, needed a better solution – blocks away.

68 countries and 65M customers.

Solution

Azure Site Recovery

Coordination of VMs.

Use Azure, their own data center as recovery site.

Can run off Azure indefinitely during disaster.

Impact

DR cost reduced by 65%.

Easy testing

Instead of a week, running again in minutes.

Maximum data loss of 30 seconds.

Security and compliance

Rest assured with layered datacenter security

PERIMETER
- Perimeter fencing
- Video coverage
- One defined access point

BUILDING
- Two-factor authentication with biometrics
- 24x7x365 security operations
- Verified single person entry

ACCESS APPROVAL
- System check
- Background check

SERVER ENVIRONMENT
- Secure destruction bins
- Inability to identify location of specific customer data
- Employee & contractor vetting

2 Million kilometers of datacenter fiber

72+ Tb per second

100+ datacenters

Millions of servers

Comply with industry and regional requirements

GLOBAL

| ISO 27001 | ISO 27018 | ISO 27017 | ISO 22301 | 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 |

Azure Stack + hybrid

Providing the only consistent, hybrid cloud

Azure Active Directory	Azure Data Services	Azure Services	Azure Security & Management
Common Identity	Data Platform	Unified Development	Security & Management
Active Directory	SQL Server	Azure Stack	On-premises Infrastructure
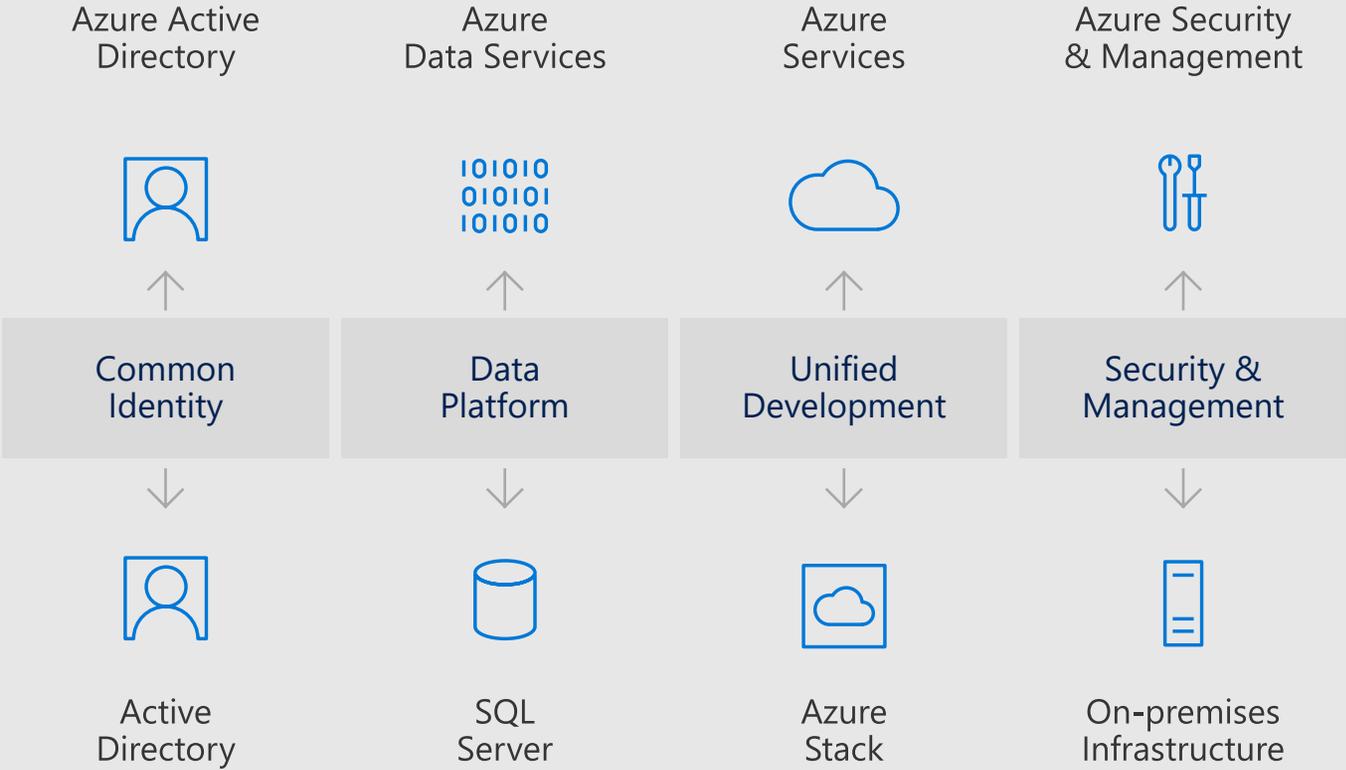
Extend Azure with Azure Stack

Bring the agility and innovation of the cloud to your datacenter

Edge and disconnected solutions

Cloud applications that meet every regulation

Modern applications across cloud and on-premises

Portal | PowerShell | DevOps tools

Azure Resource Manager

Azure IaaS | Azure PaaS
Compute | Networking | Storage | App Service |
Functions | Service Fabric* | Container Service*

Cloud infrastructure
(Integrated systems)

Azure Stack

Azure

LINKBYNET
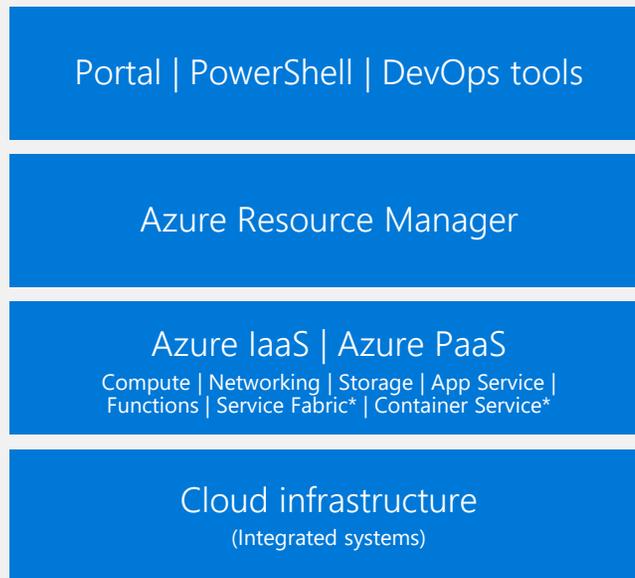
Scenario

Desire to improve IT management services offered, including security, support, and service continuity.

Help fine-tune cloud customers with precision and transparency.

Leverage a platform to deploy their solutions, including openshift.

Solution

Implemented managed cloud using RedHat on Azure with tools to manage resource usage.

Enabled customers to control costs with capabilities such as scheduling when to switch on their VMs.

Deployed simplified dashboard and catalog of solutions building on top of Red Hat on Azure, such as Openshift.

Impact

Deploy Openshift on Azure, accelerate app dev.

Flexible and upgradeable.

Manage hybrid cloud.

LINKBYNET

RedHat on Azure

Azure

Azure Stack + Hybrid

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

Web + Mobile   Identity Management

Internet of Things   Data + Analytics

Microservices   Cognitive Services

Serverless   High Performance Compute

CORE INFRASTRUCTURE

Compute   Storage   Networking   Security

Service essentials

Expand your solutions with Azure Marketplace
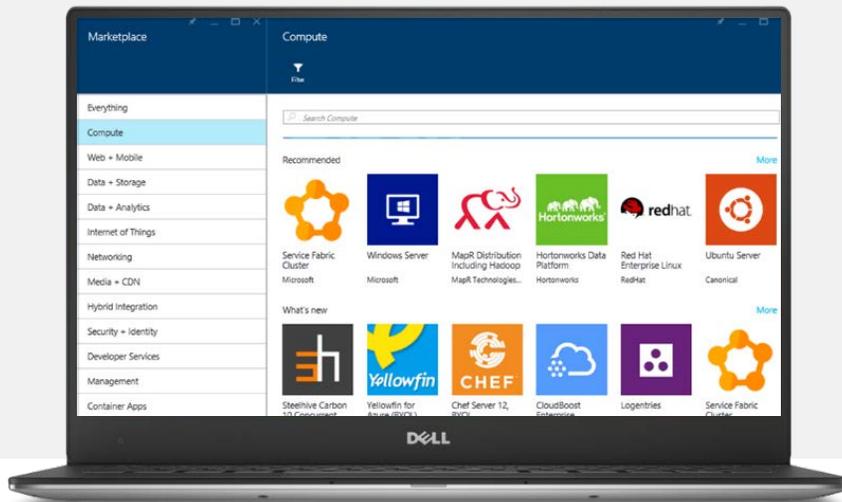
Azure Marketplace
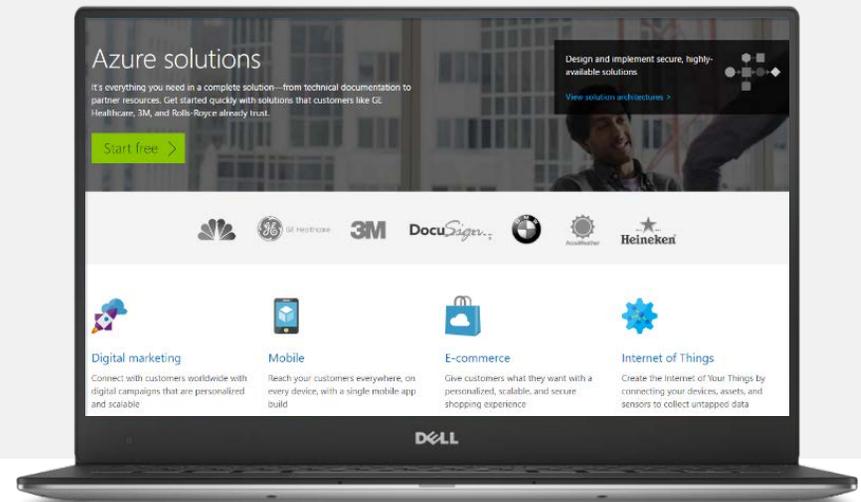
Azure solutions

Manage and monitor with a choice of tools
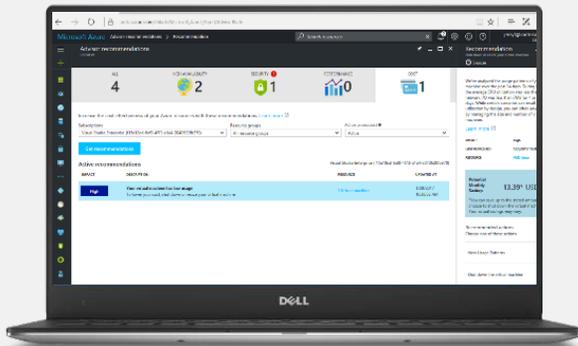
Azure Advisor, Monitor and Cost Management
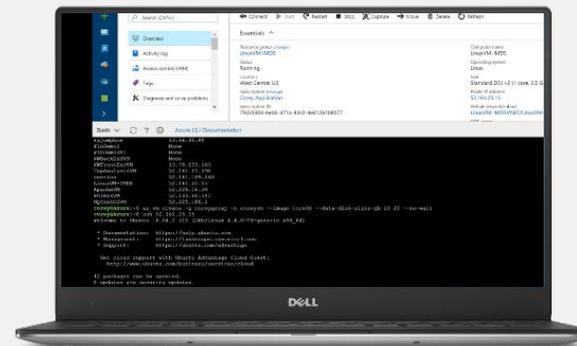
Cloud Shell

**Built-in security and management**

Azure mobile app

Azure solutions
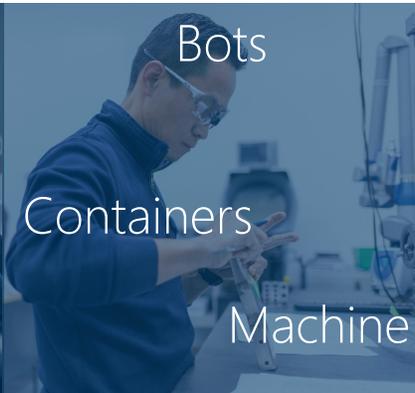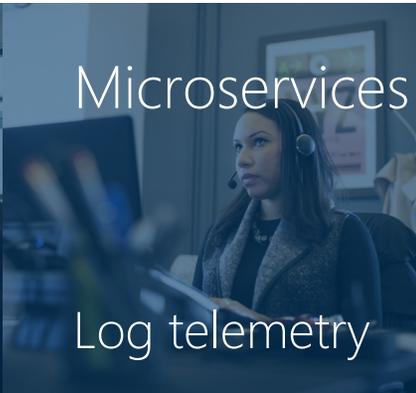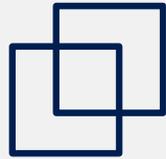
Dev/Test

SAP on Azure

Internet of Things

RedHat on Azure

BI + analytics

Big data & data warehouse

Backup, Archive, DR

High performance computing

Internal business apps

Customer facing apps

Productive   Hybrid   Intelligent   Trusted

Azure. Cloud for all.
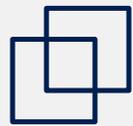
Productive   Hybrid   Intelligent   Trusted

>90%
of Fortune 500 use Microsoft Cloud