



Microsoft Azure

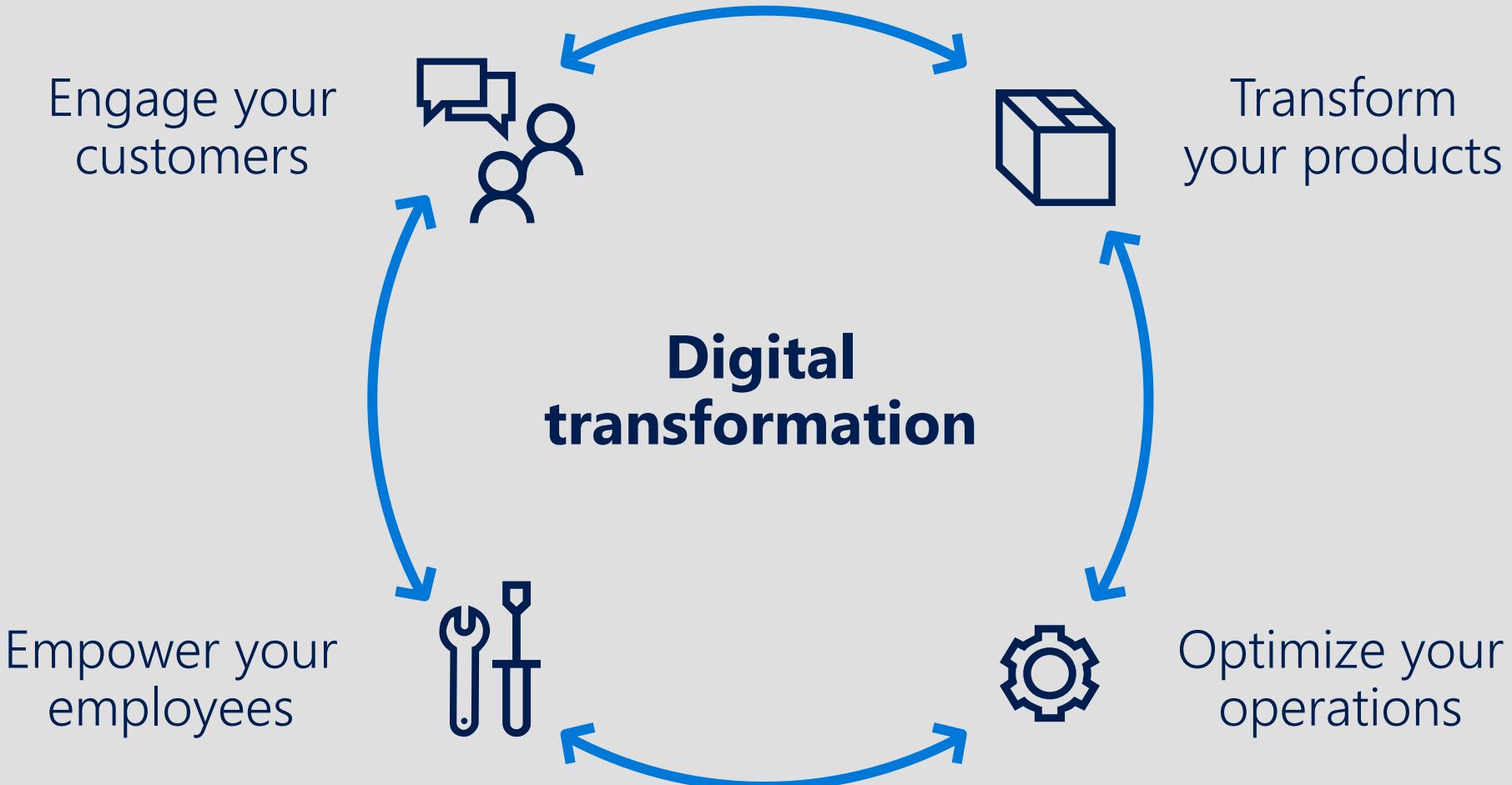
The cloud platform for
digital transformation

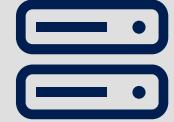
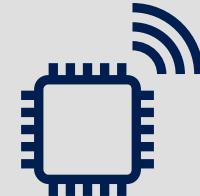
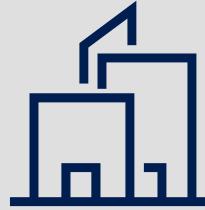
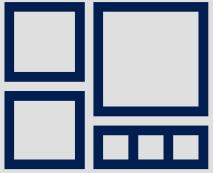
John Chang (張書源)

資深軟體開發協理

Microsoft

Microsoft





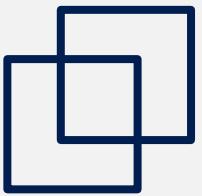
Going digital

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





Hybrid



Productive

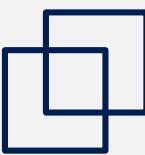


Intelligent



Trusted

Microsoft Azure



Hybrid



Productive



Intelligent



Trusted

Microsoft Azure

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

CORE INFRASTRUCTURE

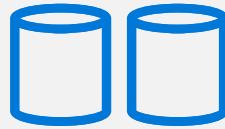
Compute Storage Networking Security

Leverage a secure and well-managed infrastructure



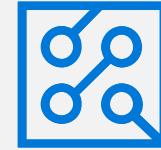
Compute

Virtual machines
Availability sets
VM scale sets



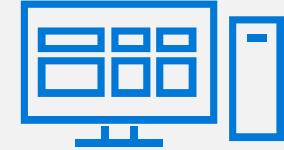
Storage

Disks
Blob storage
Files



Networking

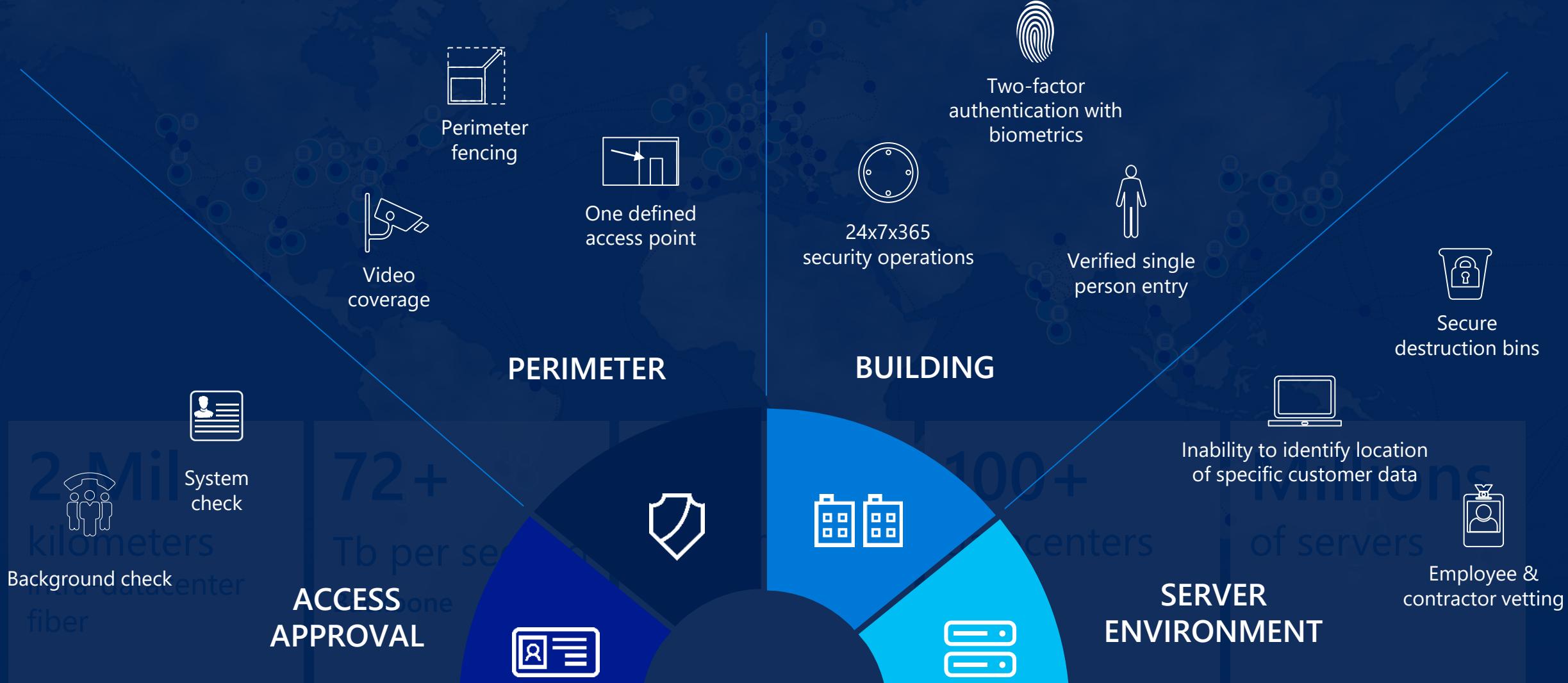
Virtual networks
VPN, ExpressRoute
Load Balancer
DNS, Traffic Manager



Management

Log analytics
Backup
Site Recovery
Security Center

Rest assured with layered datacenter security



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-ATOHigh
JAB P-ATODoD DISA
SRG Level 2DoD DISA
SRG Level 4DoD 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
PDPAEU
Model ClausesUK
G-CloudChina
DJCPChina
GB 18030China
TRUCSSingapore
MTCSAustralia
IRAP/CCSLNew Zealand
GCIOJapan My
Number ActENISA
IAFJapan CS
Mark GoldSpain
ENSSpain
DPAIndia
MeitYCanada
Privacy LawsGermany IT
Grundschutz
workbook



Walmart
Save money. Live better.

3M



TOYOTA

Rockwell
Automation



Johnson
Controls

MCKESSON
Empowering Healthcare

Lufthansa

SAMSUNG

HEINEKEN

mazda

SKANSKA



xerox



Honeywell

Schlumberger

EY
Building a better
working world

CBC & Radio-Canada

Alaska

ThyssenKrupp

FUJITSU

TEMENOS
The Banking Software Company

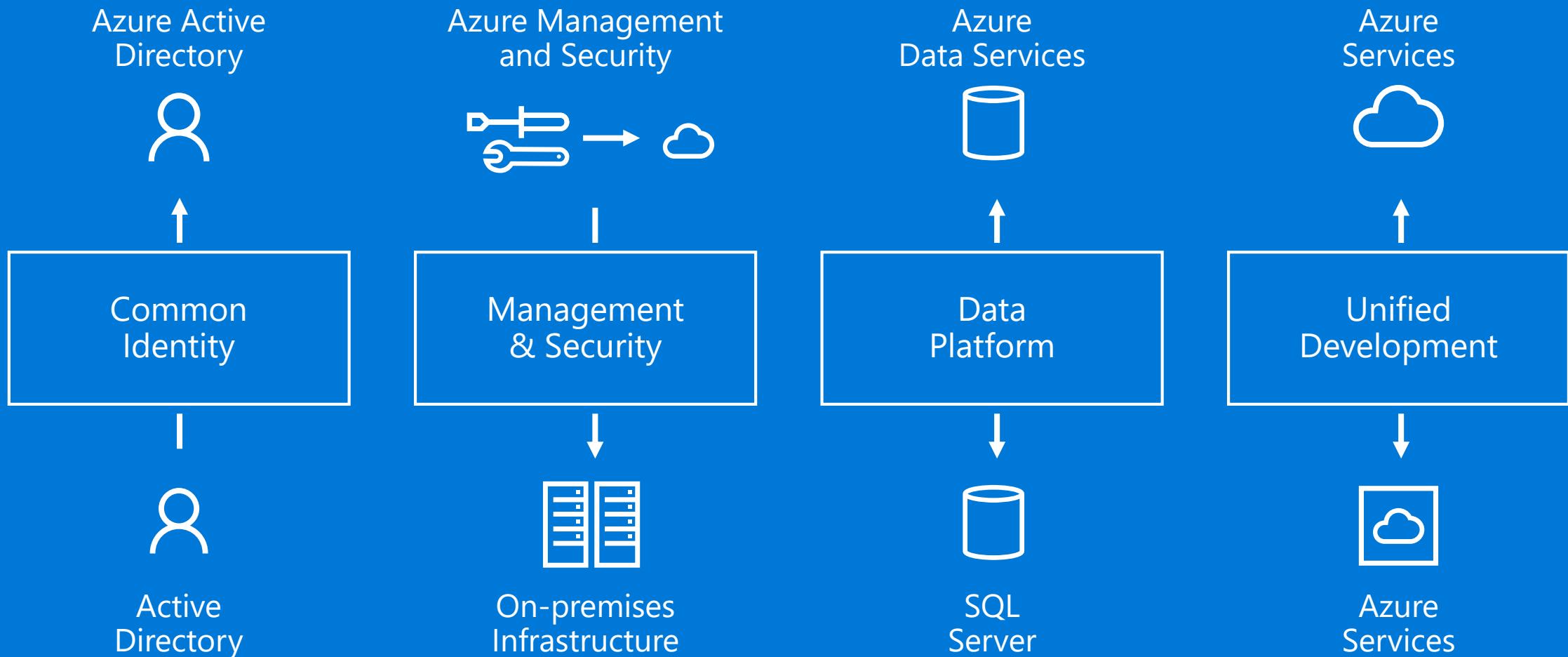
Wellmark.
BlueCross
BlueShield

esri

HarperCollins

>90%
of Fortune 500 use
Microsoft Cloud

Overcome complexity with consistent, hybrid cloud



Truly consistent hybrid cloud platform

Bring the agility and innovation of the cloud to your datacenter



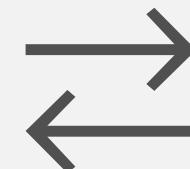
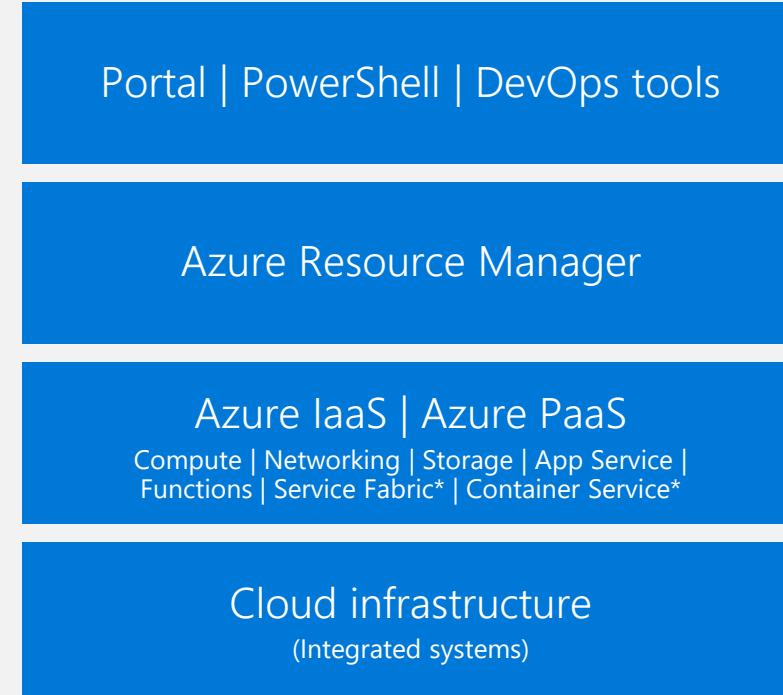
Edge and disconnected solutions



Cloud applications that meet every regulation

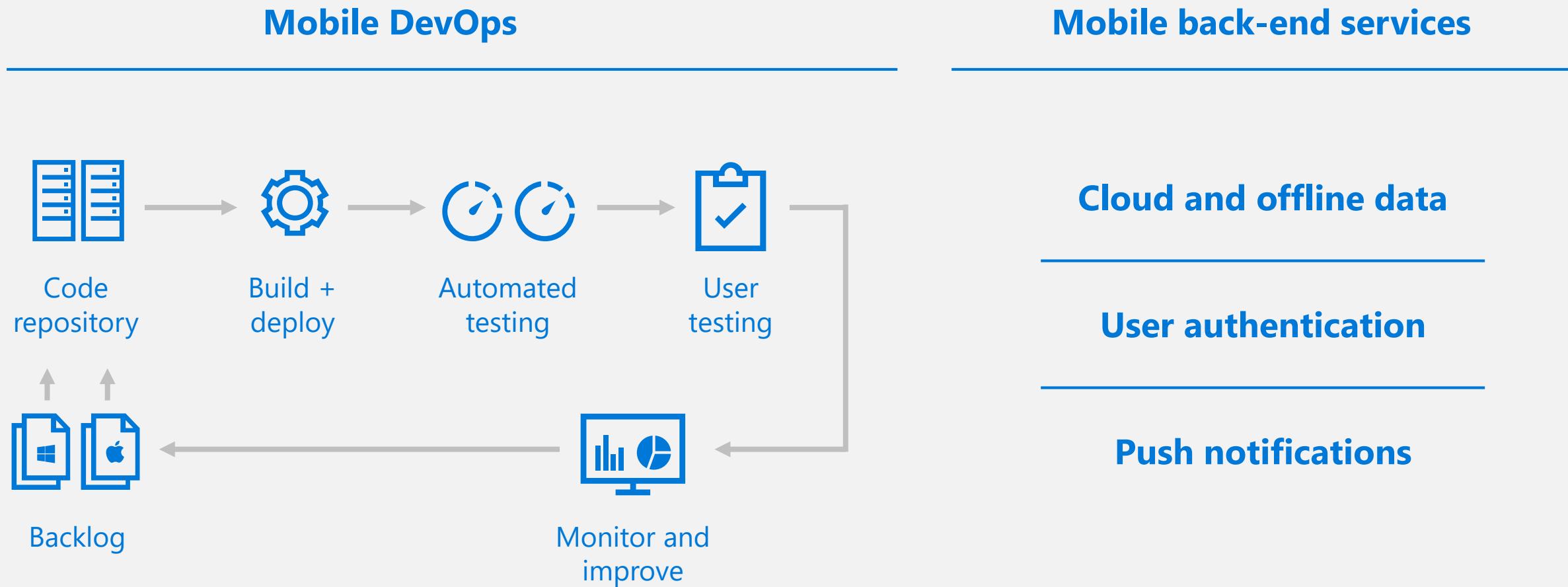


Modern applications across cloud and on-premises



Azure Stack

Modernize DevOps seamlessly with Visual Studio



Build and innovate with choice and flexibility

DevOps	 Nagios®	 VAGRANT	 ANSIBLE	 GRUNT	 Hadoop	 Android	 Xamarin	 OpenShift
Management	 CHEF™	 puppet labs	 ANSIBLE	 SALTSTACK	 Redis	 mist.io	 libcloud	 SCALR CLOUD MANAGEMENT
Applications	 WordPress	 Joomla!	 Drupal™	 GitHub	 APPRENDA	 Docker	 CloudBees	
App frameworks & tools	 PHP	 nodeJS	 Python	 JS	 Ruby	 IntelliJ IDEA	 Eclipse	
Databases & middleware	 Hadoop	 redis	 CLEARDB	 cloudera	 MySQL™	 MongoDB	 Couchbase	
Infrastructure	 Ubuntu	 Ubuntu Server	 Red Hat	 SUSE	 Debian	 bitnami	 Oracle Linux	 Docker

Add a natural, human touch with Cognitive Services

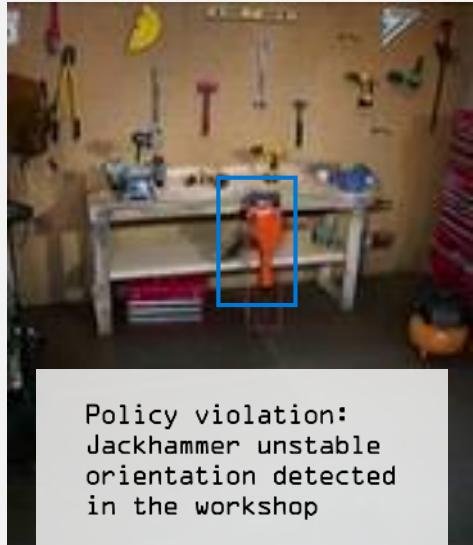
Vision

Computer Vision

Listening...



Object
recognition...



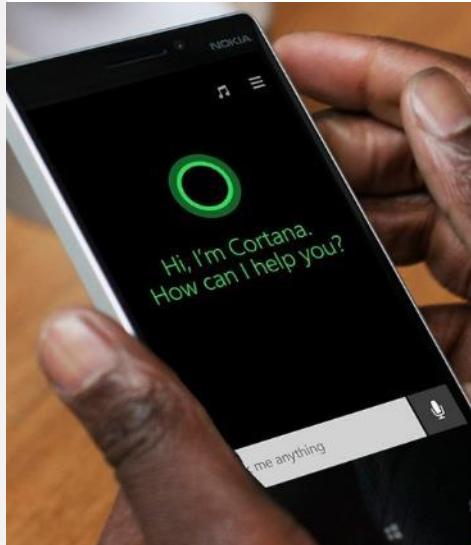
Speech

Speech-to-text and
text-to-speech service

Listening...



Convert this text to
speech please...



Language

Natural Language
Processing

Listening...



Play today's
conference call...

Natural Language Processing

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



Now Playing

11/29/2016 Customer Call

Knowledge

Knowledge
Exploration Service

Listening...



Top publications
in AI...

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 Complex Systems and Decision Processes

1973, IEEE Transactions on Systems, Man, and Cybernetics, issue 1
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

Search

Bing Search

Listening...



Fraud prevention
results...

How ID theft victims' ir

nment documents or benefits

Credit card fraud

Phone or utilities fraud

Bank fraud

Employment-related fraud

Attempted identity theft

Loan fraud

Other

sion Consumer Sentinel Network Data Book,

Simplify IoT with preconfigured solutions

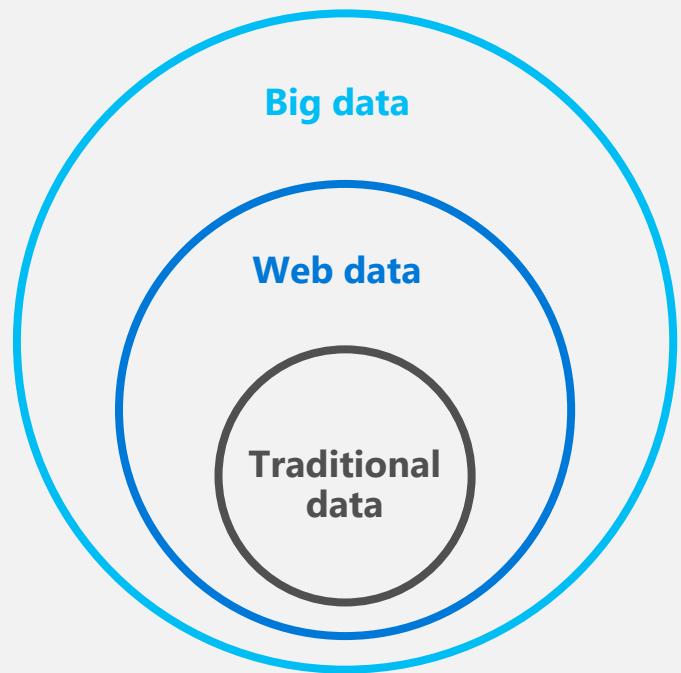


Azure IoT Suite

-
- 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)

Empower your decisions with business insights

Back-end power



Front-end insights

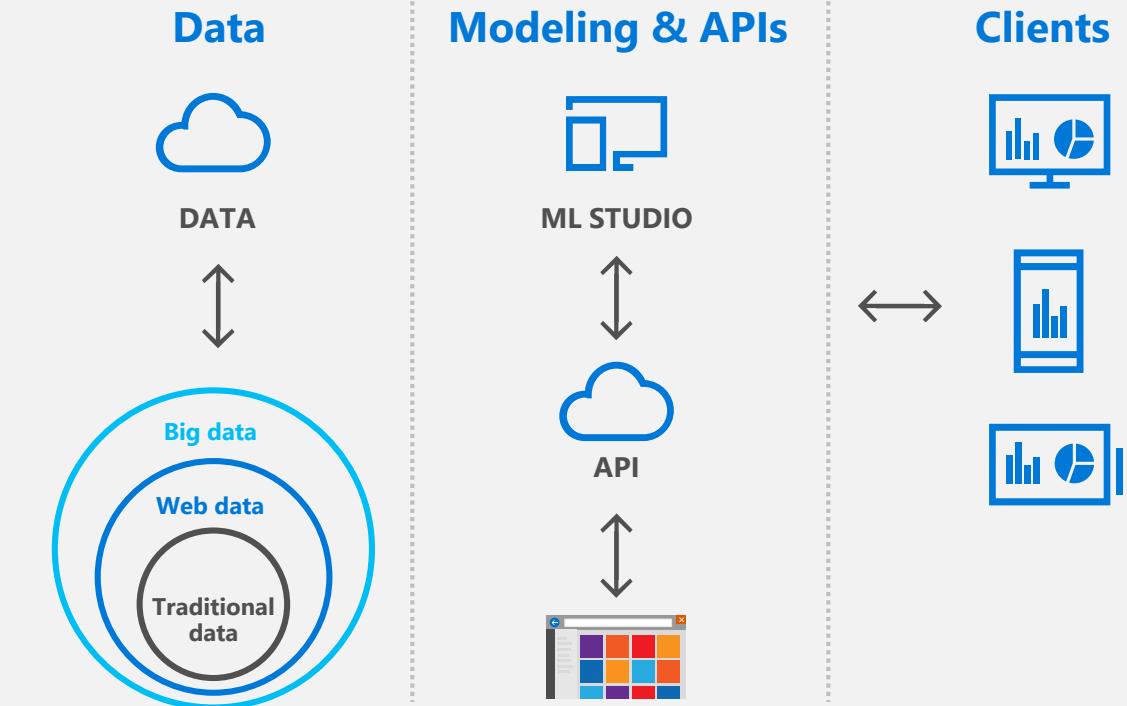


Predict customer needs with powerful tools

Azure Machine Learning templates

- ↗ Demand forecasting
- 🔧 Predictive maintenance
- 🚗 Vehicle telemetry

Azure Machine Learning services



Azure solutions



Azure solutions





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."



Dev/Test



Microsoft Azure

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

Web + Mobile

Internet of Things

Microservices

Serverless

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Data + Analytics

Cognitive Services

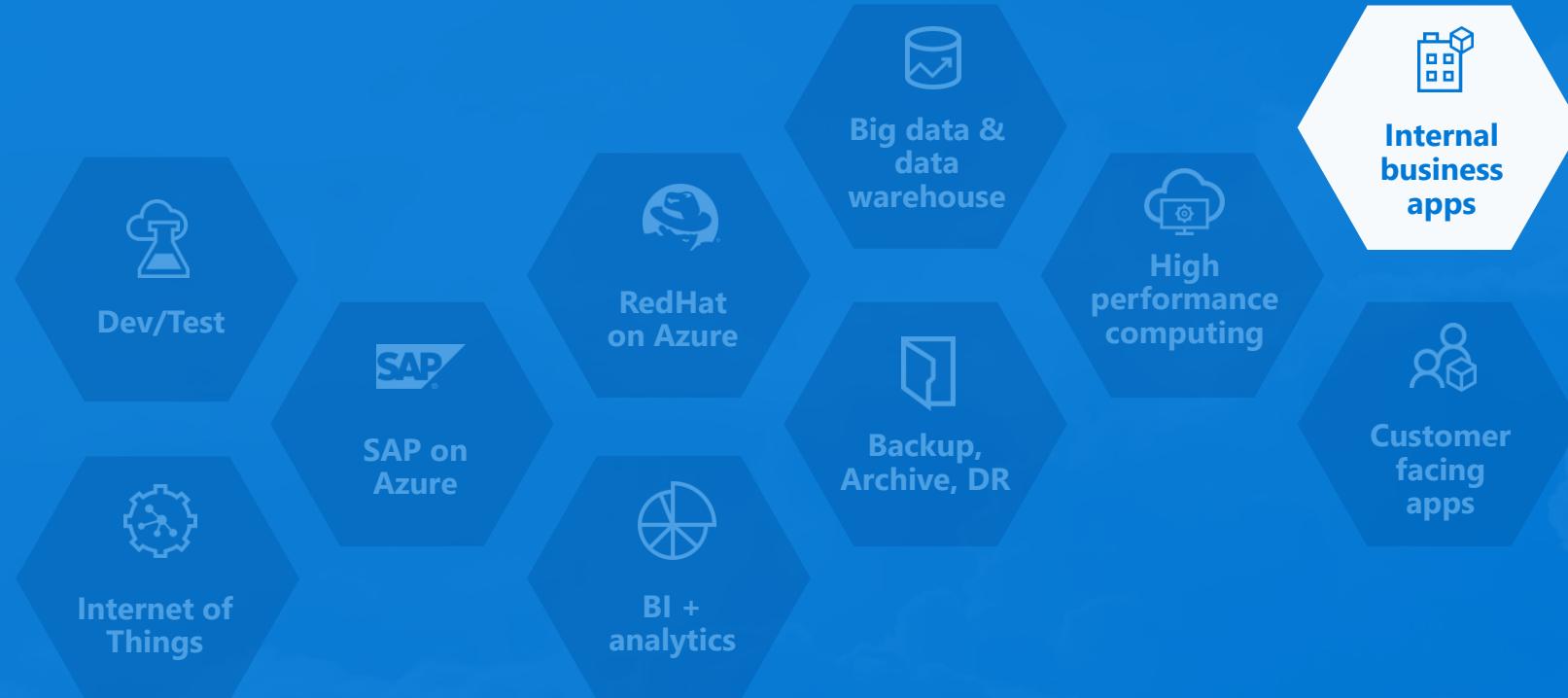
High Performance Compute

CORE INFRASTRUCTURE

Compute Storage Networking Security

Azure Stack + Hybrid

Azure solutions





Scenario

Rapidly growing video content put strain on their data center, maxing out finite storage and processing resources while adversely affecting end users.

Needed to create new and engaging sales training solutions for a mobile salesforce.

Also to gain insights into training performance and coaching opportunities.

Solution

Moved videos to Azure and immediately benefitted from adaptive bitrate streaming.

Azure Content Delivery Network increased video performance by making content closer to users.

Used augmented reality paired with machine learning to create more life-like simulations.

Data fed from simulations to Microsoft analytics.

Impact

More effective and engaging sales training.

Coaching opportunities more easily identified.

Video performance significantly improved.

Eliminated the cost of video content management and maintenance.

Microsoft Azure



SCORECARD

Topic Coverage

50/60

Engagement

18/20

Pace & Flow

10/10

Recovery

10/10



TOOLS

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Microservices

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Azure Stack + Hybrid

Azure solutions



URBAN REFUGE

Customer
facing
apps



Scenario

Find a way to connect 2.16 million refugees not living in camps.

Traditionally only word of mouth was the marketing.

Inform of assistance options, sanitation, shelter, food and aid locations.

Localize application to needs of customer and 160 organizations.

Solution

Developed mobile application using visual studio tools for Xamarin.

DevOps with hockeyapp out to beta testers.

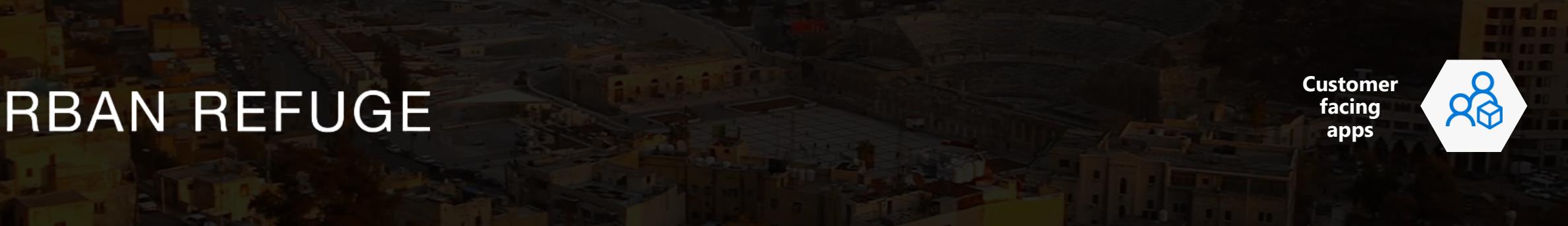
Azure active directory B2C

Built for Android, iOS and windows simultaneously.

Impact

Rolled out to 650,000 refugees.

With Visual Studio Tools for Xamarin, we developed a native mobile application targeting Android, iOS, and the Universal Windows Platform, all at the same time. This significantly cut our development time and cost by half or more. Code upkeep and upgrades are also much easier.



Microsoft Azure

URBAN REFUGE

Customer
facing
apps



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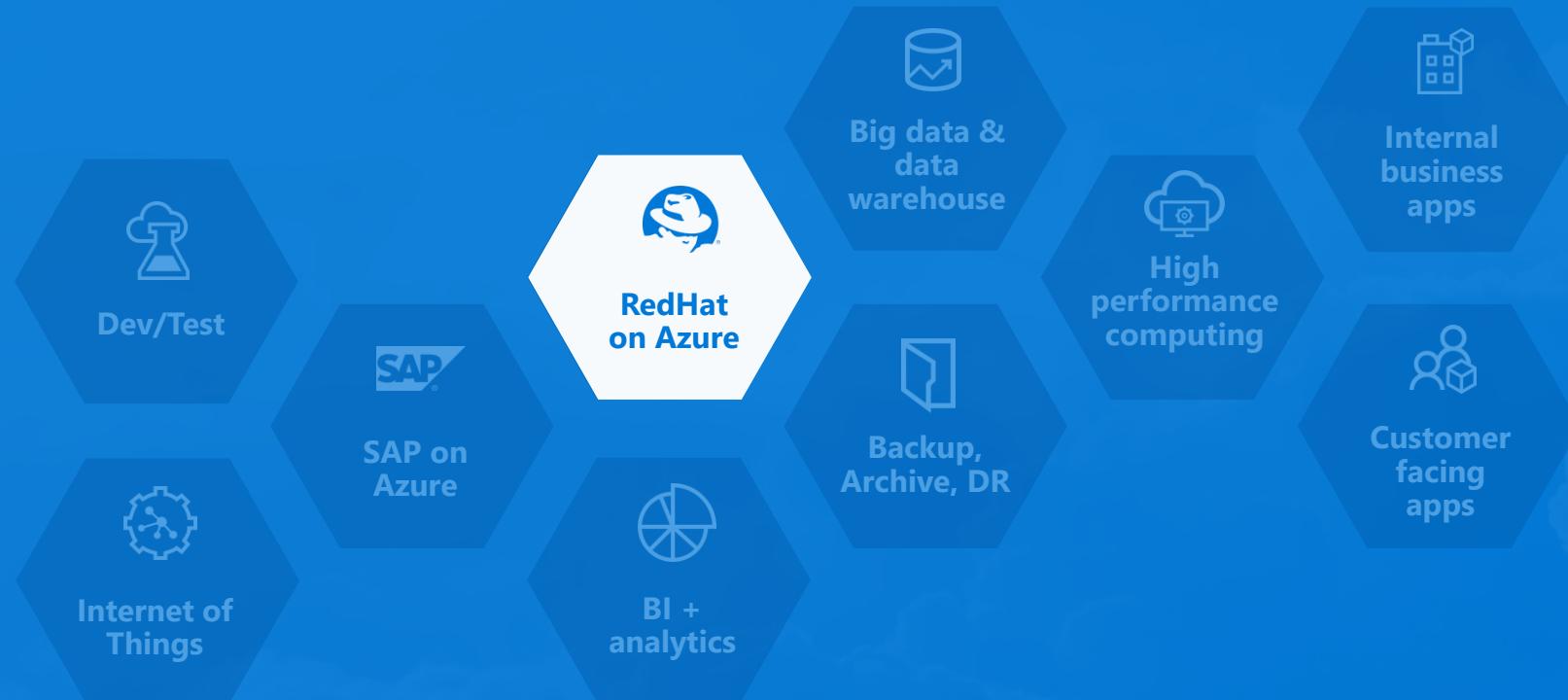
High Performance Compute

CORE INFRASTRUCTURE

Compute Storage Networking Security

Azure Stack + Hybrid

Azure solutions





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.



Microsoft Azure



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Internet of Things

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CORE INFRASTRUCTURE

Compute Storage Networking Security

Azure Stack + Hybrid

Azure solutions





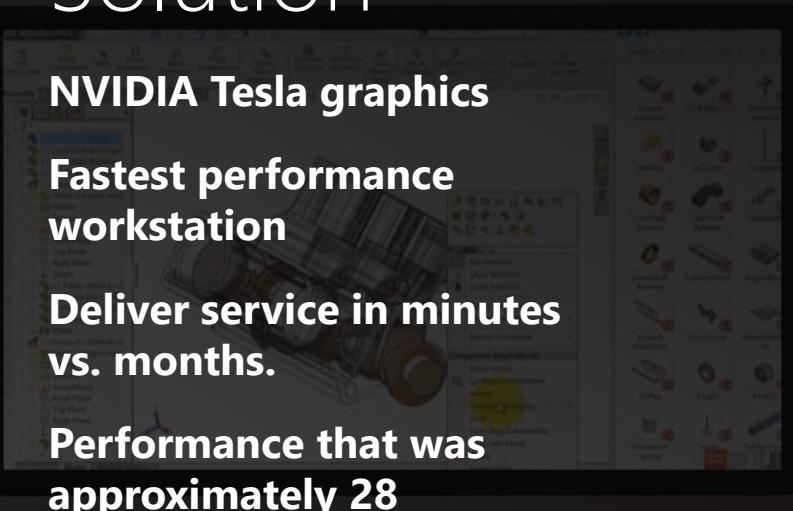
Scenario

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.

High performance computing



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.



Microsoft 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

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services



High performance computing



Azure Stack + Hybrid

Azure solutions





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.



Microsoft Azure

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

ADVANCED WORKLOADS

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Internet of Things

Microservices

Serverless

Identity Management

Data + Analytics

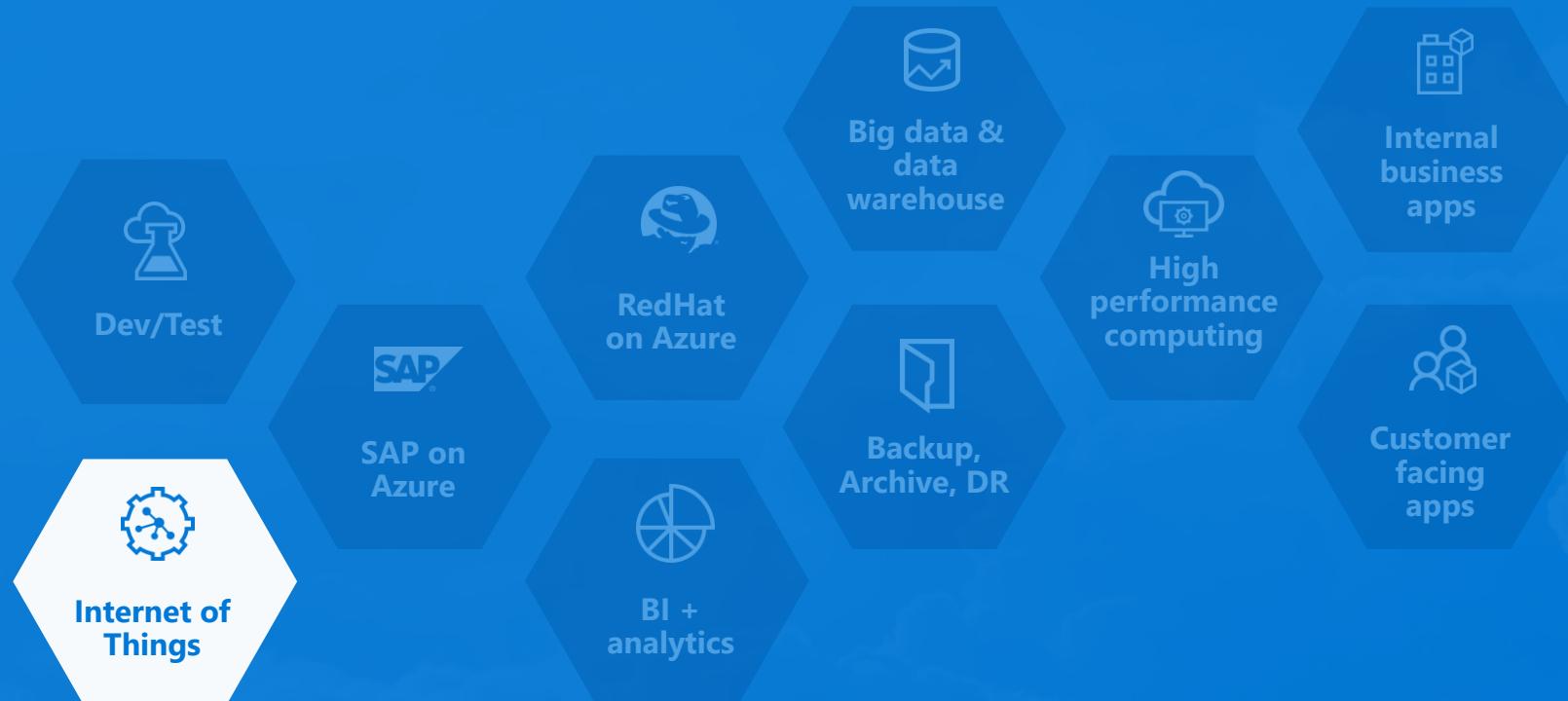
Cognitive Services

High Performance Compute

CORE INFRASTRUCTURE

Compute Storage Networking Security

Azure solutions





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.

Microsoft Azure

TOOLS

Visual Studio + Visual Studio Code + Visual Studio Team Services

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Web + Mobile

Internet of Things

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Cognitive Services

High Performance Compute

CORE INFRASTRUCTURE

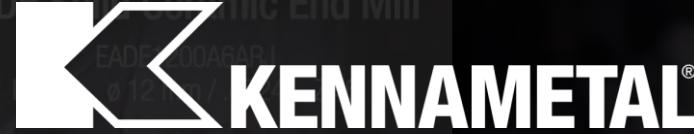
Compute Storage Networking Security



Azure solutions



EADE Solid Carbide End Mill

BI +
analytics

MATERIAL

Scenario

SPEEDS & FEEDS
**12,000 employees, customers
in 60 countries.**

**Material analytics compares
thousands of different existing
combinations.**

**Uncontrolled documents
becoming a potential security
risk.**

$V = 2865 \text{ mm/min}$
 $n = 15915 \text{ rpm}$
Maschine max. 16000 rpm



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.**

fz = 0,03 mm
0,0019 ipt



vf = 2865 mm/min

15015

Microsoft Azure

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CORE INFRASTRUCTURE

Compute Storage Networking Security

BI +
analytics



Azure Stack + Hybrid

Azure solutions





Scenario

Integral Analytics software helps utilities evaluate costs and risks.

Workloads run up to 25 TB of data.

Original solution was on-premises SQL Server.

Data feeds taking three hours per night.

Need an end-to-end solution, including batch and real-time processing.

Solution

Moved to Azure SQL Data Warehouse.

Continued use of .Net and SQL Server skills.

Create hybrid queries that span cloud and on-premises databases.

Adopt additional related Azure services such as Blob storage and Azure Batch.

Impact

Ability to quickly pause and resume Azure SQL Data Warehouse to minimize costs.

Can scale on demand up to 6,000 data-warehouse units.

Accelerate and simplify software development.

Substantial cost savings over Amazon Redshift.

Microsoft Azure

TOOLS

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Data + Analytics

Cognitive Services

High Performance Compute

CORE INFRASTRUCTURE

Compute

Storage

Networking Security

Big data &
data
warehouse



Azure Stack + Hybrid

Azure solutions





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.

SAP on Azure





Microsoft Azure

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High Performance Compute

CORE INFRASTRUCTURE

Compute Storage Networking Security

SAP on
Azure



Azure Stack + Hybrid

Microsoft Azure

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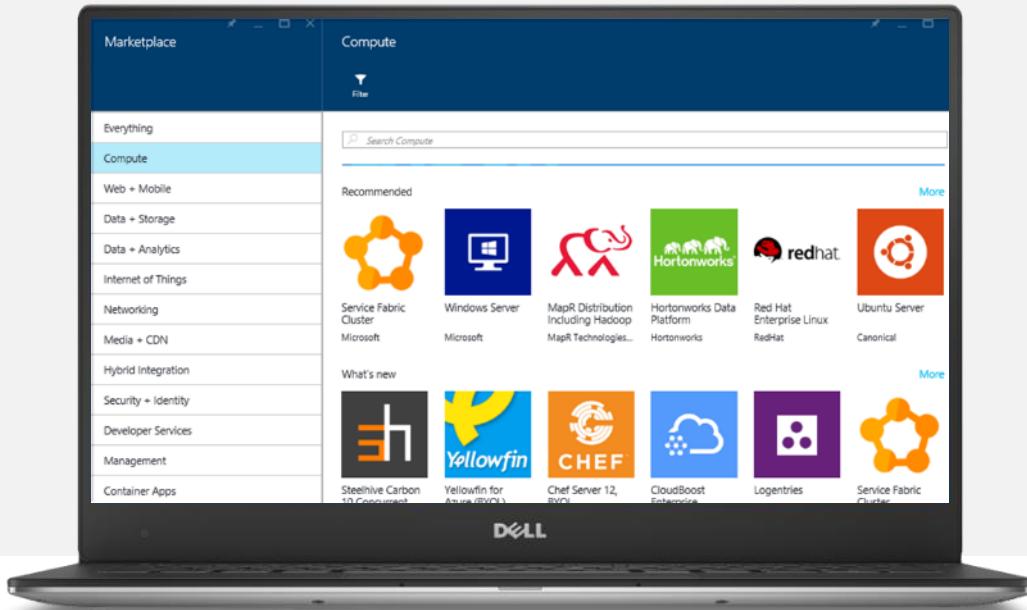
High Performance Compute

CORE INFRASTRUCTURE

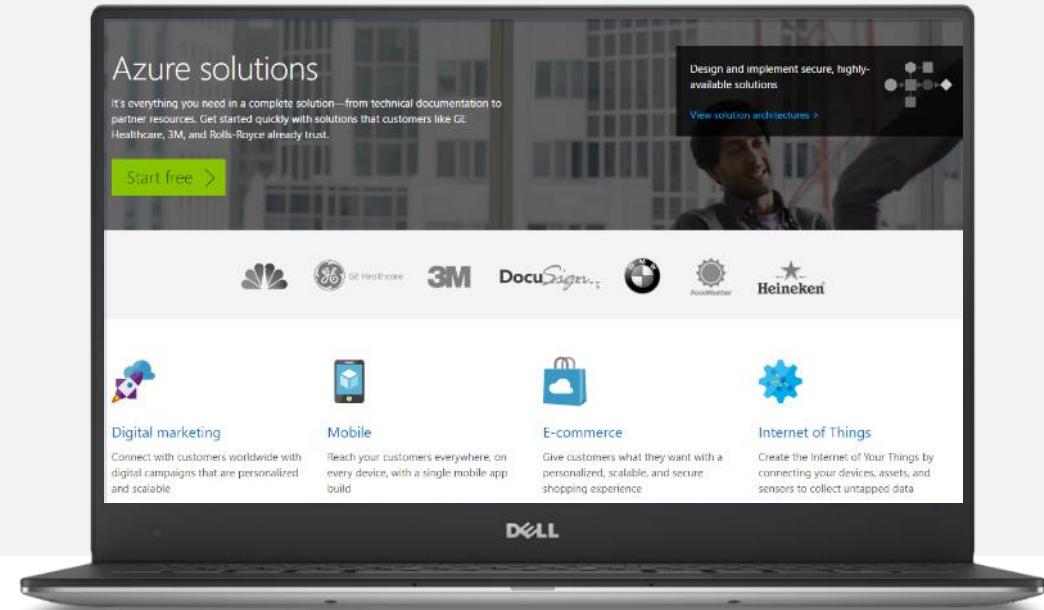
Compute Storage Networking Security

Service essentials

Expand your solutions with Azure Marketplace

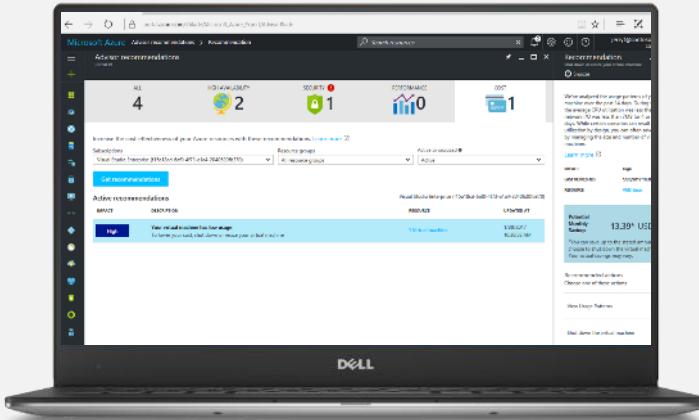


Azure Marketplace



Azure solutions

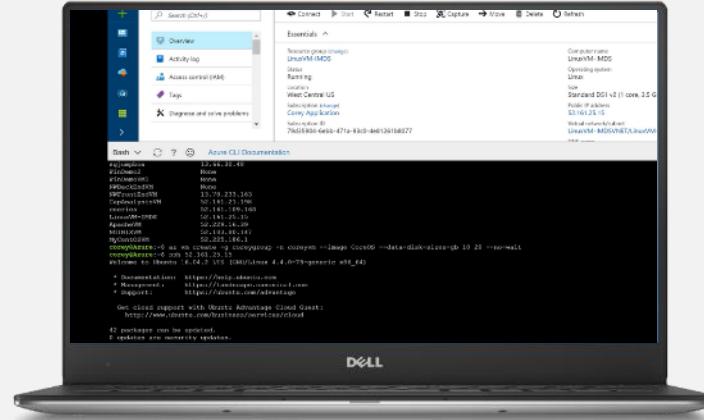
Manage and monitor with a choice of tools



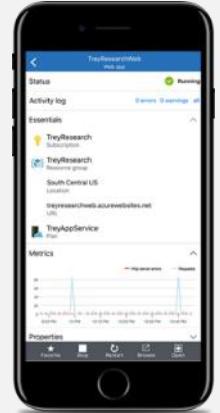
Azure
security center



Azure
mobile app

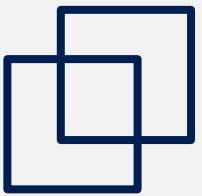


Cloud Shell



Azure solutions





Hybrid



Productive

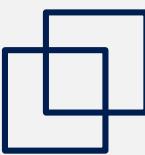


Intelligent



Trusted

Microsoft Azure



Hybrid



Productive



Intelligent



Trusted



Thank You!

ευχαριστώ

Salamat Po

متشکرم

شکرًا

Grazie

благодаря

ありがとうございます

Kiitos Teşekkürler

謝謝

ឧបករណ៍

Obrigado

شکریہ

Terima Kasih Dziękuję

Hvala

Köszönöm

Tak

Dank u Wel

дякую

Tack

Mulțumesc

спасибо

Danke

Cám ơn

Gracias

多謝晒

Ďakujem

תודה

ശ്രദ്ധി

Děkuji

감사합니다

Appendix

Azure Roadmap & Service Availability: Internal Roadmap External Roadmap

Addressing GDPR

Truly consistent hybrid cloud platform

Bring the agility and innovation of the cloud to your datacenter



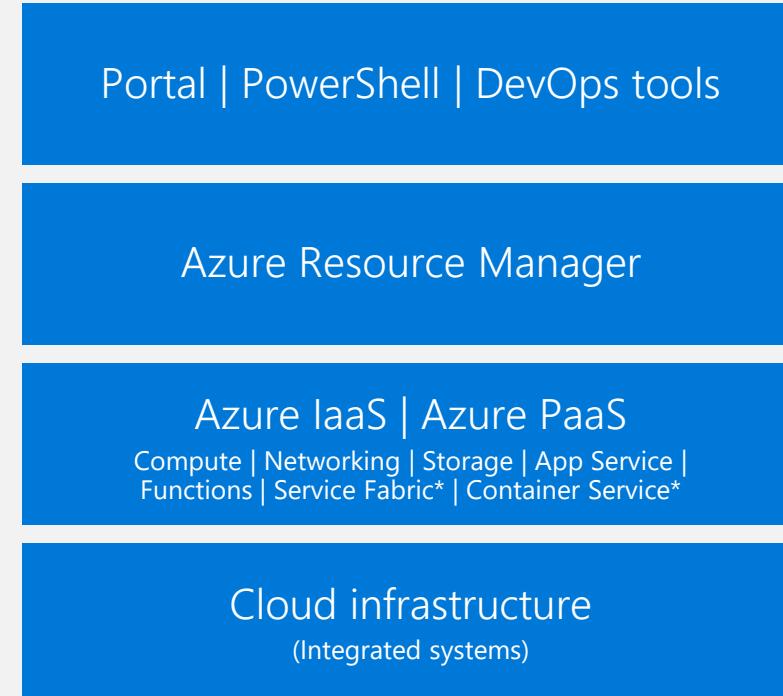
Edge and disconnected solutions



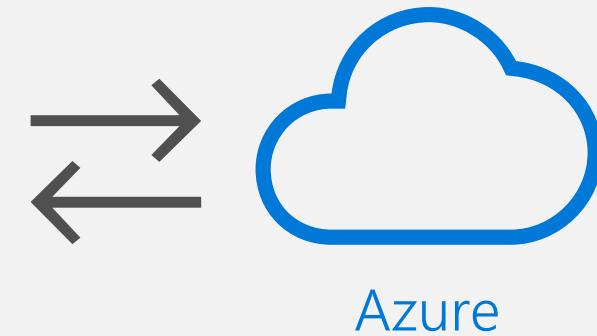
Cloud applications that meet every regulation



Modern applications across cloud and on-premises



Azure Stack



A leader in 17 Gartner Magic Quadrants

Enterprise Application
Platform-as-a-Service

Mobile Application
Development Platforms

Mission-critical Operational
Database Management Systems

Application Lifecycle
Management

Gartner



Gartner



Gartner



Gartner



Gartner

Gartner

Gartner



Scenario

"The Walking Dead: No Man's Land" has 16 million installs, requires 120GB of new data each day, and has to handle 11,500 database requests per second.

Maintain availability and performance for users who are not physically close to each other.

Provide more control over the ability to scale workloads in and out, and improve density to do the same amount of work with fewer machines.

Solution

Optimized storage usage and database solution with Azure Service Fabric and Azure Cosmos DB.

Take advantage of new machine sizes and other improvements made with VM Scale Sets.

Impact

"We wanted to make sure Next Games can operate globally with our servers and have more support for a truly globally distributed system, and Service Fabric gives you very good tools for that."

"We want our game data to always reside in the datacenter closest to the player so that we can load the player data as fast as possible. Cosmos DB's replication feature allows us to do this, so that we always have the data close by the player, no matter which datacenter it comes from."



Scenario

Consulting and IT services

Huge Datacenter – 6800 M2's

3 other global datacenters

**Need to leverage current assets
for more customers**

Solution

Hybrid cloud storage pools

Higher server density

Multi-client-capable cloud

**Extend their platform to
allow self serving of data**

Impact

**Achieve standardized,
global provision of services**

**Reduce IT operating and
investment costs**

**Serve more customers
without additional
investments**



Swiss Re

Scenario

Looking to diversify their insurance and reinsurance offerings.

Wanted to create a new microservices model based on small, single risks that was fully automated.

Opportunity to integrate further with the aviation industry.

Solution

Launched a micro-insurance service that automatically reimburses airline passengers for delayed flights.

Solution based on Azure Platform-as-a-Service that enables affordability and agility.

DevOps workflow to allow for continuous integration.

Impact

Demonstrated to the market that their company was focused on knowledge and innovation.

Scenario

Legacy platform was architected before many cloud resources were available.

Needed a highly available, highly scalable, and flexible tax preparation engine.

Desire to not rewrite the extensive code base of the existing platform.

Solution

New system is built on a microservice architecture running in Azure with services managed by Service Fabric.

Workload is replicated across datacenters using Azure Paired Regions for high availability.

Using Azure Event Hubs, millions of events per second are ingested and available for storage and analysis.

Impact

Tax preparation system was continuously available during the high-traffic filing deadlines with no affect of increased load.

Cost of ownership decreased.

New customer services and business models are being explored.



Scenario

Seeking 20% revenue growth

**13.4 million
tech-savvy customers**

Global growth

**Enable consumers to shop in
their own language and to
choose payment methods and
delivery options appropriate
for them.**

Solution

**Global datacenters that ensure
high levels of performance and
availability for customers in
any location.**

**Automated resiliency across
multiple Azure datacenters,
with each service failing over
independently as needed.**

**PaaS approach to focus on
design and high quality
software, rather than worrying
about database backups
and patching.**

**New architecture reflects a
microservices approach.**

Impact

**Doubled volume of Black
Friday orders.**

**167 million requests, 3,500
request a second at peak, 48ms
average response time.**

**Accelerated development of
mobile apps and new features.**

**320 releases in the first quarter
alone on Azure.**

**Gaining flexibility to divert
resources to services that bring
a competitive edge to the
company.**

Scenario

Data held within everyday business contracts contain some of the most sensitive information that an enterprise holds.

Their business has hundreds of virtual machines, using more than 10,000 cores.

Need for highest levels of data encryption with application and infrastructure security.

Solution

Azure Security Center to continuously monitor and improve security.

Store customers' data selectively in specific Azure datacenters based on a contract's metadata.

Monitor Dev/Test security policies and receive security alerts, incidents, and recommendations that guide through the process of configuring needed controls.

Impact

Replaced home-grown monitoring tools, the operations team saves at least 30 percent of its time by using Azure Security Center.

"Time to market has been significantly short[ened], compared to what we would have achieved on other cloud platforms."