Azure

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Premier Field Engineer

Microsoft Azure - Services Overview

Compute

Virtual Machines (VM) — IaaS v1 & v2

- **Gallery Images**: SQL Server | Dynamics NAV | Oracle DB | Weblogic | Tomcat… ; Ubuntu Server | CoreOS | Centos OpenLogic | SUSE | Oracle Linux…… ; On-Premise License portability; Windows Server | Linux
- **VM Sizes**: Basic (A0-A4) | Standard (A0-11), (D1-4),(D11-14); Standard (DS 1-4) | (DS11-14) | (G1-G5); Premium SSD Storage
- **VHD Image portability** (On Prem <> Azure): Antivirus / Anti Malware Add-on; Remote Access RDS | SSH; VM Agent & VM Extensions
- **High Performance Compute (HPC)**: MPI Latency; Infiniband Network; Remote Direct Memory Access (RDMA)

Cloud Services — PaaS

- **Networking & HA**: Multiple NICs (Virtual Appliance); Instance Level Public IP (PIP); Endpoint Security ACL; Availability Set
- **Networking & HA**: Single/Multiple Virtual Public IP(VIP); Secure VPN; Reserved VIP | SSL; Auto scaling (Time | CPU | Queue)
- **VM Sizes**: Standard (A0-11), (D1-4) | (D11-14); Web & Worker Roles; Custom DNS Names; DNS Services

Azure RemoteApp — Basic | Standard Tiers

- Virtualized Apps - Office 365 Apps | Custom Windows x86/x64 Apps; Cloud Collection (Cloud only Apps); Hybrid Collection (on Prem & Cloud); Azure VM Gallery | Upload VM Image; xplat Client Access - Windows | Mac OS X | iOS | Android

- **ASP.NET | PHP | Node.JS | Java**; Python Tools for Visual Studio; Azure SDK for .NET | PHP
- **Azure SDK Tools for Visual Studio**; Continuous Delivery - VSTO; Production Slots | Staging Slots

Azure Batch — Basic | Standard Tiers

- Scheduled & On Demand Batch Jobs; Hyper Scale TVM (Task VM) Pools; Batch .NET SDK (Client & Agent) | Explorer | PowerShell

Application Services

Azure Service Fabric — PaaS — Basic | Standard

- **Distributed Systems Platform**: Clusters | Runtime | Lifecycle Management; Containers | Stateful | Stateless; Microservices; Windows Server | Linux
- **Reliable Services | Actors**; Health Model; Service Fabric Explorer; Visual Studio Tools | REST API | .NET SDK | PowerShell

Azure Mobile Engagement — PaaS — Basic | Standard

- **User Engagement Platform**: User Segmentation | App User Analytics | App User Monitoring | Contextual Push Notifications | In App Messaging | Marketing Campaigns; Tag Plan | Activities | Events | Jobs | App-Information | Devices | Users
- **Client & Server SDK**: Windows Universal | iOS Swift | iOS Objective C | Android; Mobile Engagement Portal; REST API for Devices | Reach

Azure API Management — PaaS — Developer | Standard | Premium Tiers

- **API Enable - Data & Services**: Internal Developers | Partners | Customers; Developers | Partners | Customers; Products; Groups; APIs; Operations
- **Policies**: Throttle Request | Caching | Payload Format | Usage Quota | C# scripts | CORS | More…
- Swagger/WADL API Import; Developer | Admin Portal; Social Identity | Azure AD | Role based Access; API Monitoring & Analytics (Developer | Admin View)
- **Premium Tier**: Multi Region Deployment; Unlimited Scale Out; VPN Integration

Azure Event Hubs — PaaS — Basic | Standard

- Cloud Scale Telemetry Ingestion Engine | Big Data; Publisher | Check Points | Partition Key | Stream Offset | Throughput Units; Consumer | Consumer Groups; Partitions | Events; Data Management & Runtime REST APIs | .NET SDK; Client: .NET, C, Java

Media & App Services

Azure Redis Cache — PaaS — Basic | Standard Tiers

- **High throughput, low latency. Data Access**: Transactions | Pub/Sub | Lua scripting | Keys with TTL | Memcache; Advanced Key-Value Store; Atomic Operations; Cache size up to 53GB; Two Node Master/Slave for HA; Based on Open Source Redis Cache; Output Cache Provider; Monitor Health | Performance; ASP.NET Session State Provider; Client SDKs for .NET | Python | PHP | Node | Java

Azure Search — PaaS — Free | Standard Tiers

- **Search as a Service for Apps**: Near-instantaneous Response | Type-ahead Query Suggestions | Faceted Navigation | Scoring Profiles | Hit Highlighting | Tag Boosters; Index Updates - Push or Pull Model | On Demand / Scheduled Updates | Indexers for Azure SQL DB, DocumentDB, SQL Server in VM; Reliable throughput | Storage | Indexing & Querying Support | Full Text Search | Natural Language Support using Linguistics | Up to 15 Million Docs per Service Unit; Scale out/in through Service Units

StorSimple — Developer | Standard

- **Hybrid Cloud Storage Appliance**: On Premise | In Azure; 8000 Series Hybrid Storage Arrays - SAN Storage | HDD / SSD based; StorSimple Virtual Device (in VM); Azure StorSimple Manager; Storage Tiering > across the inactive Primary Data; .NET SDK | REST APIs to (Manage | Access) Service | JSON Content format; Monitor Storage Consumption | Document Count | Index Count; De-duplication & compression Monitoring; Health - Alerts on Portal | on Device; The Appliances are built and distributed by Xyratex

Media Services — PaaS — Basic | Standard | Premium

- **Cloud for Premium Video Workflows**: Media Formats; MPEG | DASH | Apple Live | Streaming | HLS; Upload / Ingest Media; HTML5/Javascript Player APIs; Media Player; Video on Demand | Internet Ads | Indexing; Dynamic Packaging SDK > .NET | REST APIs; AES | PlayReady; Encoding (Std | Premium Encoder) | Reserved Units; Encryption; Live Streaming

Azure App Services — Free | Shared | Basic | Standard | Premium Tiers

- **Web Apps**: Ready-to-use Marketplace Apps running on .NET, Apache Tomcat, Jetty, More…; Support for multiple platforms - Java, Node.JS, AngularJS, PHP, ASP.NET Mvc, etc.; Deploy REST | Web Services | Choose from multiple Database platforms combo; Inbuilt Backup & Restore SSL enable; CDN | Traffic Manager Integration
- **Mobile Apps**: Integrate with Enterprise Sign on | On-Prem | Cloud Resources; SSO & Authn/ Authz with Azure AD | ADFS | Other STS; Notification Hub Integration for x-plat PNS; Connectivity with SaaS Apps; Turnkey Solution for Offline/ Online capability
- **Logic Apps**: Create re-usable Rules API App; Automate Business process execution and workflow | Visual Editor (Browser); Triggers | Actions | Workflow | Connectors | BizTalk API Apps - (B2B & EAI); Compose tasks across on-premise | Azure Services; Code-free composing with Connectors from Azure Marketplace | Other API Apps | BizTalk API Apps; Editor - use JSON Code view | Design view; Ready Starter Templates in Gallery
- **API Apps**: Build | Consume | Monetize | reusable RESTful Web Services | SaaS Connectors; Gateway | Connectors | Triggers | Actions; Starter Gallery Templates; Multi-platform support Java, Node.JS, Python, PHP, ASP.NET Web API, etc.; Access on-premise Data; Swagger Format for APIs
- **App Service Environments(ASE)**: Needs Premium (P4) Tier Subscription; Needs Regional Virtual Network; Up to 50 dedicated Compute Resources; Dedicated & Isolated Environment; **App Service Plans(ASP)**: A Billing Unit, set of features and capacity of Resources; Set of ASPs linked to a Resource Group; 1 Web Front End & Up to 3 Worker Compute Pools; Secure Access to on-premise Corporate Services; Dedicated plans for different Workloads Dev | Staging | Production; Apps Gallery; Auto scaling; Continuous Integration TFS | GIT |GitHub; Deployment Slots; Background Tasks with Webjobs; Geo Distributed Deployment; VPN Hybrid Connectivity; Custom Domain Name; Monitoring & Diagnostic Logging in New Azure Portal

Integration Services

Azure BizTalk Services — PaaS — Free | Developer | Basic | Standard | Premium Tiers

- **Cloud based Integration Service for B2B and EAI scenarios**: Hybrid Connections for App Service Apps to on-premise HTTP | TCP Resource (SQL Server | MySQL | REST Service); BizTalk portal to manage Trading Partners | B2B Messaging; Connectors for endpoints like HTTP | FTP |SFTP | REST Data Sources; BizTalk Adapter Service (BAS) – Connectivity to on-premise Applications like SAP | Oracle EBS | SQL Server | PeopleSoft…; X12 | EDI | AS2 | EDIFACT Messaging; Source | Destination | Bridge Messaging | Endpoints; Maps | Transforms to manipulate data; Scale out | Archiving | High Availability

Azure Service Bus — PaaS — Basic | Standard | Tiers

- **Generic, Cloud based Messaging System**: Connect - Apps | Services | Devices Either on-premise and in Azure; Messaging Queue for FIFO | Guaranteed Delivery | P2P Messaging; Asynchronous Messaging Patterns | Protocols – REST, AMQP, WS*; Transactions | De-duplication | Sessions | Forward-To | Batched Connections; Event Hubs – For large scale events ingestion; Topics for pub/sub subscription based messaging | One to Many; Relays – for bi-directional pass through communication | Hybrid integration scenarios using WCF; Service Bus REST API | .NET SDK | Azure PowerShell | Service Bus Explorer

Azure Backup

- **Cloud integrated Backup**: Secure over-the-wire & at rest | Back up data stored in Geo replicated Storage | 6 copies in 2 Azure Datacenters; Supports incremental backup | Compression | Encryption | Longer retention | Bandwidth throttling; Protected Instances > Applications like SharePoint | Exchange | SQL Server | files & folders | Windows Servers | Windows Clients | Azure IaaS VMs (Windows Server | File consistent Backup for Linux); Backup Vault | Vault credentials | Registration of Computers (MMC Snap in) | Backup Schedule

Azure Site Recovery

- **Protection & Recovery of Apps**: Replicate & Recover Physical | VMs | SAN | to Datacenter | Azure; Supports VMWare VMs; Monitoring; Automate | Integrate with existing tech. | SQL Server Always on | more…; Orchestrated Recovery

Developer Services

Visual Studio Online — Basic | Professional | Advanced Tiers

- **Build, Share Code, Track Work in the Cloud**: Unlimited Source Repositories | Track Work Items, bug using Kanban Boards | Enterprise Grade Services | Dashboards for Reporting; Continuous Integration – Compile, Test and Deploy Code updates automatically; Version Control using GIT | TFS Repositories; Version Control – Any Language | Any GIT Client(e.g. Xcode); Choice of IDE - Visual Studio | Eclipse for Java | Extend to Custom Tools using REST API; Cloud based Load Testing; SLA | Azure AD support for large Organizations; Ibiza Portal

Visual Studio Application Insights — PaaS — Free | Basic | Standard | Premium Tiers

- **Detect issues, Diagnose errors, track usage of Web and Mobile Apps**: Diagnose Exceptions, crashes and Monitor Performance issues | Request Load | Perf counters | Response Times | Monitor Dependencies (SDK Extensions) | Correlate with Events and Traces; Monitor Web Site Availability and Response; URL Ping Test; Multi-step Web Test; Analyze Application Usage; App adoption, Origin of requests, Page Views, Sessions, Client Devices, Browser, custom Instrumentation using Telemetry API, More…; Support for other tools - Relic; Alert Notifications > Operational Events | Metric limits crossed; Metric Explorer | Diagnostic Search | on Azure Preview portal
- **Enabling Application Insights (AI) into Apps**: ASP.NET Web Sites in VM: From Visual Studio | Status Monitor on IIS; Angular Module for SPA(GitHub)| Node.JS| Windows Desktop| Apache Cordova| Jhumla| More..; Java Web Apps – Eclipse with AI add-in for Java | Azure Libraries for Java; Java Script using SDK script; Platform specific SDK available for Windows | Android | iOS Native Apps; Data Export

Data Services

Azure DocumentDB — PaaS — Standard

- **A NoSQL Document Database Service**: Schema free NoSQL Database | Complex Queries | Transaction Support | SQL like syntax | Consistency Levels | JavaScript language integrated | UDF | SPs; Client Side Libraries for .NET | Python | Node.JS | JavaScript | Java; Partitioning Data with .NET SDK; Performance Levels – Reserved Throughput | Scale Out Units | SSD Storage 10GB

Azure Storage — PaaS

- **Cloud Storage for Big | Small Data**: Blobs | Tables | Queue | Files; Scalable | Durable & HA (3 copies LRS (GRS)); Premium Storage for High Performance | Low Latency IO; Manage | Monitor(Portal); Client Side Libraries in .NET | Java | Android | C++ | Node.Js

Azure Data Warehouse (*) — PaaS

- **Data Warehouse as a Service**: Query (New) /Relational DBs | Enterprise Class SQL Experience; Petabyte Scale | Parallel Processing | Capacity changes in seconds; Grow | Shrink | Pause | Pay per Use
- **Real time Stream Processing in Cloud**: Compare Real-time data with Historical Data for Insight; Stream Analytics Query Language

Azure Stream Analytics — PaaS

- **Real time Analytics | Connected Devices (IoT)**; Monitor Data Pipelines; Transform Data using PIG | Hive | C#; Distributed processing for scale | performance | Resiliency

Azure Data Factory

- **Compose, Process Data at scale**: HA & Fault tolerant Pipeline of Data from disparate Data Sources | Types; Mngmt APIs - .NET | REST; Handling HDInsight Clusters; Persist transformed Data

Azure SQL Database — PaaS — Standard | Premium Tier

- Virtual PREMISE SQL SERVER; Near feature parity with SQL Server Full Text Search; Jobs to Manage multiple Databases in a Pool | Centralized Query ops; Elastic Database Pool Resources with Databases; Economy with Scale; Point in time Restore; Data Partitioning for scale out beyond 500GB

Azure HDInsight & ML — PaaS

- **100% Apache Hadoop Service in Cloud**: Runs on Windows | Linux; Process (un)structured Data | Use .NET, Java extensions | Map/Reduce Jobs | PIG, Hive support; HBase | Mahout | R Language | Storm | Machine Learning

Networking

Azure Virtual Networks — IaaS v1 & v2

- **Enhanced Security | Isolation | Network Topologies | Extend Datacenter to Cloud | Hybrid Scenarios | Combine IaaS + PaaS**
- **Virtual Network**: Region; DNS Servers | Address Spaces; Sub Nets | Web Role | Worker Role | Virtual Machines
- **Network Security Group (NSG)**: ACL Rules; Regulate Traffic to | Endpoints | VMs & VM Templates | Virtual Machines; Workloads
- **Cross Premises Connectivity**: Point to Site (P2S) | Site to Site (S2S) | Multi Site VPN; **Azure VPN Gateway**: Dynamic Routing | Static | Dynamic Routing; Certificates; VPN Clients; Windows Server 2012 with RRAS; VPN Device; Multi Site VPN | Multi On Premise Sites to Azure Virtual Network; On-Premise Network
- **VPN to VPN Connectivity**: Cross Region Geo-Redundancy & Presence; Cross Region, Within Azure Bandwidth; Cross Subscription Connections; Cross Org Boundaries Connections
- **SDK /APIs**: REST API | PowerShell | Resource Manager REST APIs | Resource Manager PowerShell
- Virtual Networks available free of charge. Pay only for Public & Reserved IP Addresses, VPN /Application gateway

Azure DNS — IaaS v2

- Hosted in Azure's Global Network of DNS Servers; Anycast Networking; DNZ Zones | Records; REST API | .NET SDK | PowerShell | CommandLine; Used for P2S | S2S Connections; Used together with Azure VNet Service; Source NAT-ing

Azure Load Balancer — IaaS v2

- **Layer 4 - UDP | TCP based For VMs, Web | Worker Roles; Balance incoming Load to VMs in Cloud Service | Cloud only VNet | Cross premise VNet; Deploy with ARM Templates**; Port Forwarding; Auto reconfig on scale up/down of VMs; External | Internal Load Balancer; Single/Multiple VIP Address

Azure ExpressRoute — IaaS v2 — Premium Add on

- **Dedicated | Fast | Reliable | Private Azure Connectivity**: Exchange Providers (EXPs); P2P Ethernet Links | Cloud Exchange | 200 MBPS to 10 GBPS Speeds; Network Service Providers (NSPs); Any to Any Connect with Telco VPN | 10 MBPS to 1 GBPS Speeds; Public Peering(PaaS) | Private Peering (VMs & Cloud Services)| Microsoft Peering(Office 365); Cross Subscription Sharing; Virtual Network Config with ExpressRoute; Cross Region Connectivity; Workloads : Cloud Services | Storage | SQL Database VMs

Identity & Access

Azure Active Directory

- **Identity & Access Management in the Cloud**: Multiple Domains (900) in a single AD; Add Custom Domain Name; Multi-tenancy for Applications; Conditional Access; MFA based access per SaaS Application
- **Azure AD Connect**: Bi-Directional sync | Sync with AD On-prem | Monitor Health of AD on-prem
- **Cloud App Discovery**: Discover Apps | Track usage and traffic | Monitor
- **Dynamic Membership**: Rule based auto- subscription to User Groups
- **Other features**: Add custom SaaS Applications to Azure AD | Administrative Units for Delegation of Access | Password roll over for Facebook, Twitter, Linkedin
- **Free Edition**: Manager User Accounts | Single Sign on across Azure, O365, Other SaaS Applications
- **Basic Edition**: Custom branding in Sign in Page | Group based Application Access | User Self-Service | SLA; **Application Proxy**
- **Premium Edition**: Self-Service Group Mgmt | Advanced Security Reports/ Alerts | MFA for Cloud & On-Prem users | Hybrid Identity with MIM | Password Reset + Writeback | SLA; SDK> Azure AD Graph API | PowerShell

Azure MFA — IaaS v2

- **Industry Standard Protocols**: OAuth 2.0 | OpenID Connect 1.0 | WS Federation 1.2 | Claims (SAML 2.0, JWT, others from Community)
- **Cross Device Client Authn**: Active Directory Authentication Library (ADAL) for | Windows |Android | Xamarin | Cordova | Azure Authn Api for Android
- **Authentication scenarios**: Authenticate to WebAPI from Browser | Web Application | Native Application | Daemon | Server Application | Single Page Application; Conditional Access | Device Registration | Device based Access | On- Prem & Azure Apps
- Verification modes SMS | Call | App Notification; Works with Radius, LDAP ..; Real time Monitoring /Alerts; Deployable in Azure & on-premise Applications; Works with numerous SaaS Applications; Client side MFA SDK for native Apps | .NET, Java, Perl, PHP, Ruby

Azure Traffic Manager — IaaS v2

- **Geo-route incoming traffic**: Route by: Round Robin | Performance | Failover; Traffic Distribution across Regions; Monitor Azure / External Web Sites; Reliability | Availability for Web Sites; Cross Premise Distribution of Load; CDN integration for Content Delivery; Nested Profiles Supported; Traffic Profile | End Points | Custom Domain Names; Works with ExpressRoute

App Services (Management / Media)

Azure Notification Hub — PaaS — Free | Basic | Standard Tiers

- **Highly scalable, Push Notification Engine**: Broadcast Messages instantly across platform devices – Windows, iOS, Android, Kindle, Xamarin; Native Apps – Windows | iOS | Android | Kindle | Xamarin; Browser based Apps – Chrome Apps | Safari browser from WebSite; Plugs into Back End systems across Technologies .NET | Node.JS | PHP | Java | either on-premise or in Azure; Targeted Messaging using Tag based subscriptions; Scheduled Notifications; Localization of Messages using Templates; Auto scaling | Rich Telemetry | Multi tenancy; Platform Agnostic Notifications | works with GCM,APS,WNS; SAS Tokens based authentication to Send | Receive | Manage Hub; Massively scalable to Millions of Devices; Device Registration for Notifications – By App | By Back End | Bulk Modify through File

Azure Key Vault — PaaS — Standard | Premium Tiers

- **Secure, Key Management in the Cloud**: Hardware Security Module(HSM) to generate, secure keys, passwords; Access restricted | Audit and log activities in HSM | Separate keys for Dev | Test | Production; Better performance, reduced latency for Applications by storing keys in Cloud; REST API | .NET Client SDK | PowerShell cmdlets

Azure Scheduler — PaaS — Free | Standard | Premium

- Recurring / Scheduled Jobs (sync/async); **Job Collection** | Jobs | Jobs History; Resources (in)/ (ex)ternal to Azure; Can be integrated into Applications; **Rapid Scale** | Global Redundancy | Segregated Key Management; High Availability Geo Redundancy at Service Level; Geo replication of Jobs in another paired Region; **Outbound Authentication Support**; Reliability; Config of Retry Policy | Alternate URL

Azure Automation — PaaS — Free | Basic Tiers

- **Simplified Cloud Management with Automation**: Automate Frequent, time consuming, error prone Management Tasks; Improved reliability and efficiency; PowerShell Workflows (RunBooks) in Gallery; Works with Azure Services & public Interent APIs; Graphical Authoring of RunBooks

Azure CDN — PaaS

- **Global Delivery Network of High Bandwidth**: Proximity based delivery of Static Content to Clients; Large distributed scale to handle spikes; Cache content from Azure Cloud Services | Web Sites; Active Redundancy & Failover Support; Pricing basis : Zone 1 vs Zone 2; HTTPS support | Cache specific content with Query Strings | Custom Domain Support

Left Sidebar — Security & Management

- Portal
- Azure Active Directory
- Multi-Factor Authentication
- Automation
- Key Vault
- Store / Marketplace
- VM Image Gallery & VM Depot

Right Sidebar — Hybrid Operations

- Azure AD Connect Health
- Azure AD Privileged Identity Management
- Backup
- Operational Insights
- Import/Export
- Site Recovery
- StorSimple

Management

- Migration Accelerator !
- Migrate Physical | VM Ware | AWS | Hyper-V VMs to Azure
- Azure Marketplace: Endorsed Distribution of 3rd Party VMs
- Docker Containers | Chef | Puppet | More …
- Other 3rd Party App | Data Services
- VM Depot: Community | DIY | Open Source | VMs; Linux | FreeBSD Virtual Machine Images
- Azure Resource Manager: Resource Groups to manage all Resources in an Application together
- Azure CLI for Windows | Linux | Mac to manage Resources
- Resource Manager Templates to deploy Applications
- Tag based organization of Resources
- Role Based Access Control(RBAC) of Services
- Log User Actions for Auditing
- Management Support

Legend

! Indicates a feature in Dev/General preview
() indicates Feature announced, not released yet

#	Support
1	REST API
2	PowerShell
3	xplat-CLI
4	Azure Portal
5	Azure Preview Portal
6	ARM REST API

Version: 1.0

Azure: Open and Easy

Operating System

Data

Development

Tooling DevOps

Application Templates

Agenda

Compute
- Virtual Machines
- Web Apps
- Cloud Services
- RemoteApp

Storage & Data
- SQL Databases
- Blob Storage
- Table Storage
- Import \ Export

Networking
- Virtual Networks
- ExpressRoute
- Traffic Manager
- Application Gateway

Identity & Access
- Azure Active Directory
- Multi-Factor Authentication
- Application Proxy

Recovery Services
- Site Recovery
- Backup

Monitoring
- Operational Management Suite

Hyper-scale footprint

● Azure compute regions

Hyper-scale
footprint

● Azure compute regions

19
Azure compute
regions open today

More than AWS and
Google Cloud combined

500+

New releases in the last 12 months

Azure Site Recovery: Protect VMWare and Physical Servers in Public Preview

Azure Backup Generally Available

Azure API Management Premium simplifies high availability and massive scale for APIs

ExpressRoute for Office 365

Azure Active Directory Dynamic Membership For Groups

Automatic Password Change for Social Media Shared Accounts

Compute-Intensive A10 and A11 Virtual Machine Instances

Remote Desktop app for Windows Phone support for Gateway and Remote Resources

Informatica Cloud Agent availability in Linux and Windows Virtual Machines

Azure DocumentDB Hadoop Connector

Azure HDInsight support for more VM sizes

Enterprise-Grade Array-Based Replication and Disaster Recovery

Azure momentum

>100,000
New Azure customer subscriptions/month

1.4 Million
SQL databases in Azure

>50 Trillion
Storage objects in Azure

425 Million
Azure Active Directory Users

>18 Billion
Authentications/week

1 out of 5 VMs
Are Linux VMs

>57%
Fortune 500 using Azure

A leader in Gartner magic quadrants

→ Microsoft only leader in **all four magic quadrants**

x86 Server Virtualization

Public Cloud Storage Services

Cloud Infrastructure as a Service

Enterprise Application Platform as a Service

Estimating Cloud Costs
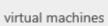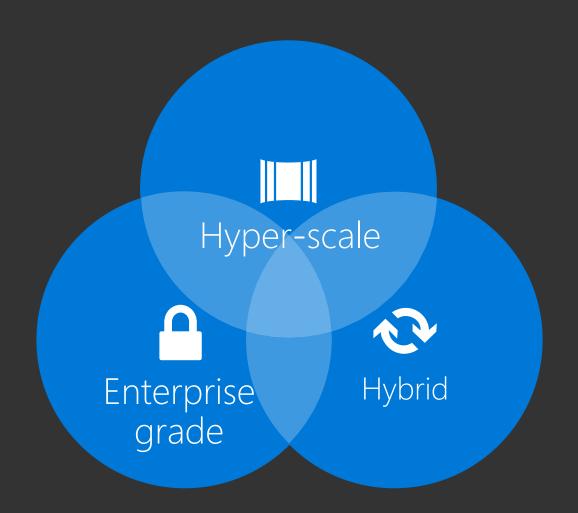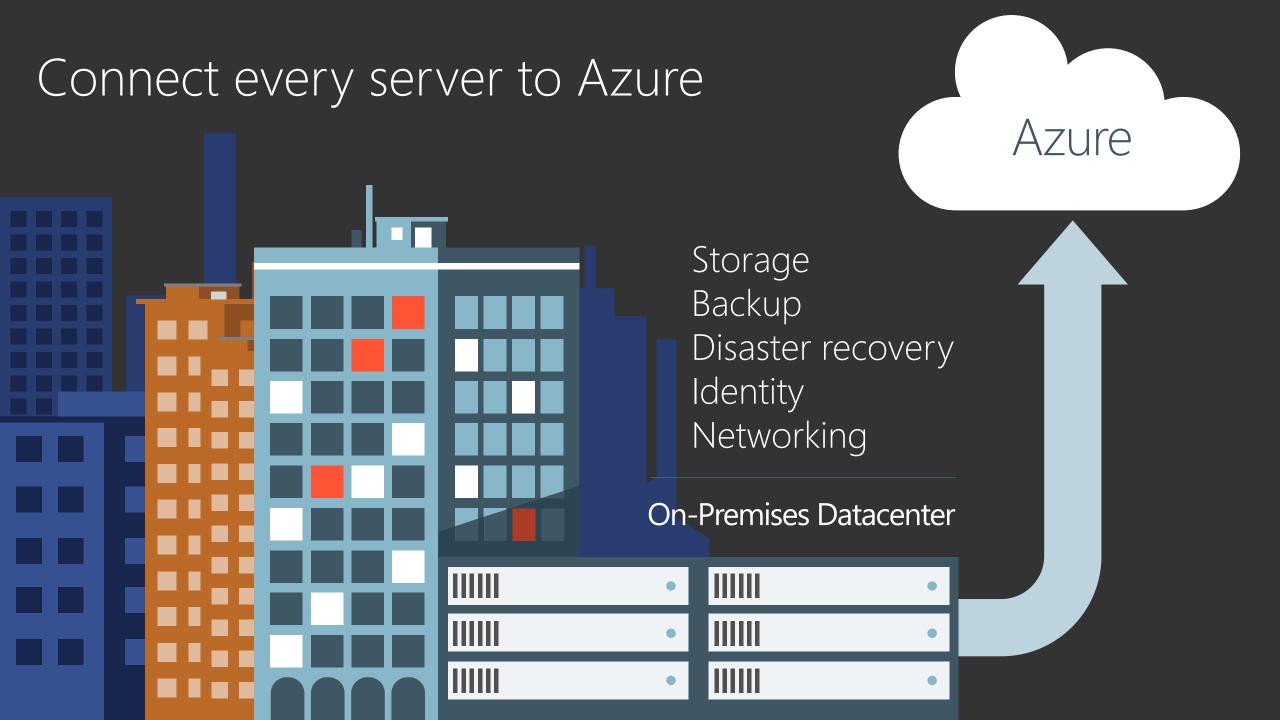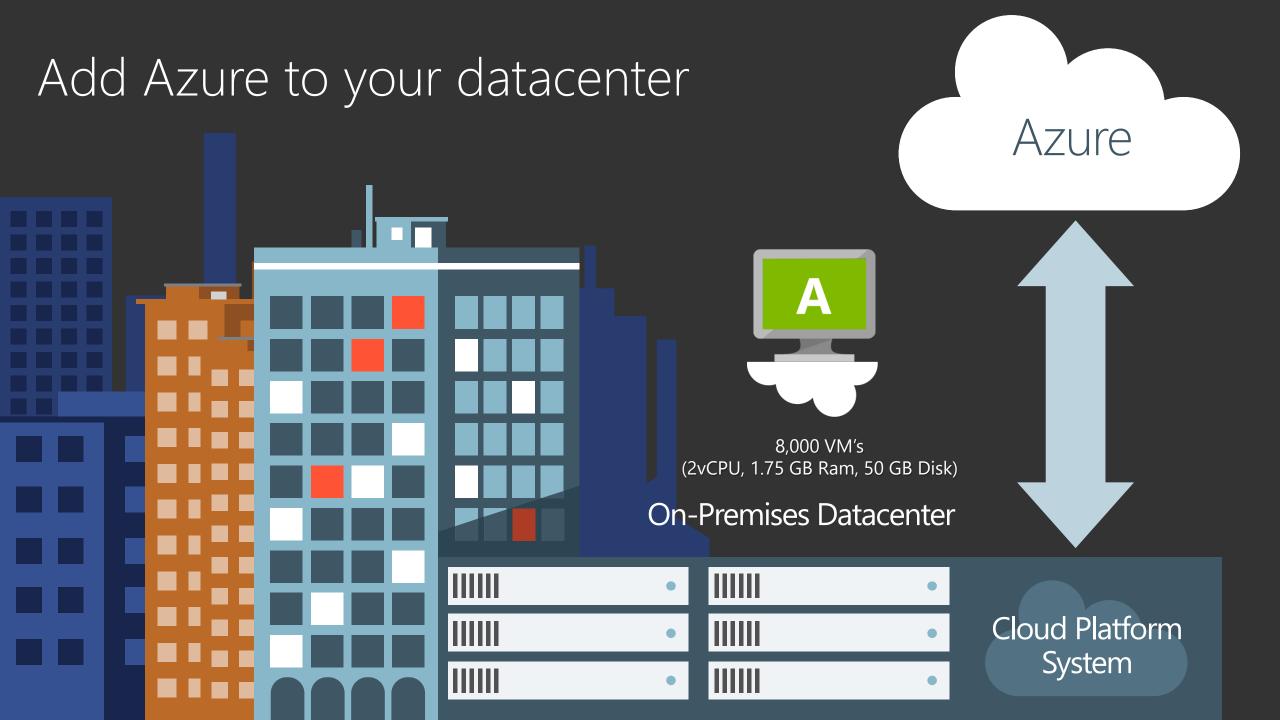
http://azure.microsoft.com/en-us/pricing/calculator/

How we differentiate.

Add Azure to your datacenter

Azure

A

8,000 VM's
(2vCPU, 1.75 GB Ram, 50 GB Disk)

On-Premises Datacenter

Cloud Platform System

What can you do in Azure?

Premium Storage

SSD based storage

Add up to 32 TB of storage per VM

Capable of >64,000 IOPS per VM

Less than 1ms read latency

Scale-up options

Highest value

SSD storage
Faster CPUs

>64,000s of IOPS

Most memory
Fastest CPUs

A

D

Premium
Storage

G

Highest value
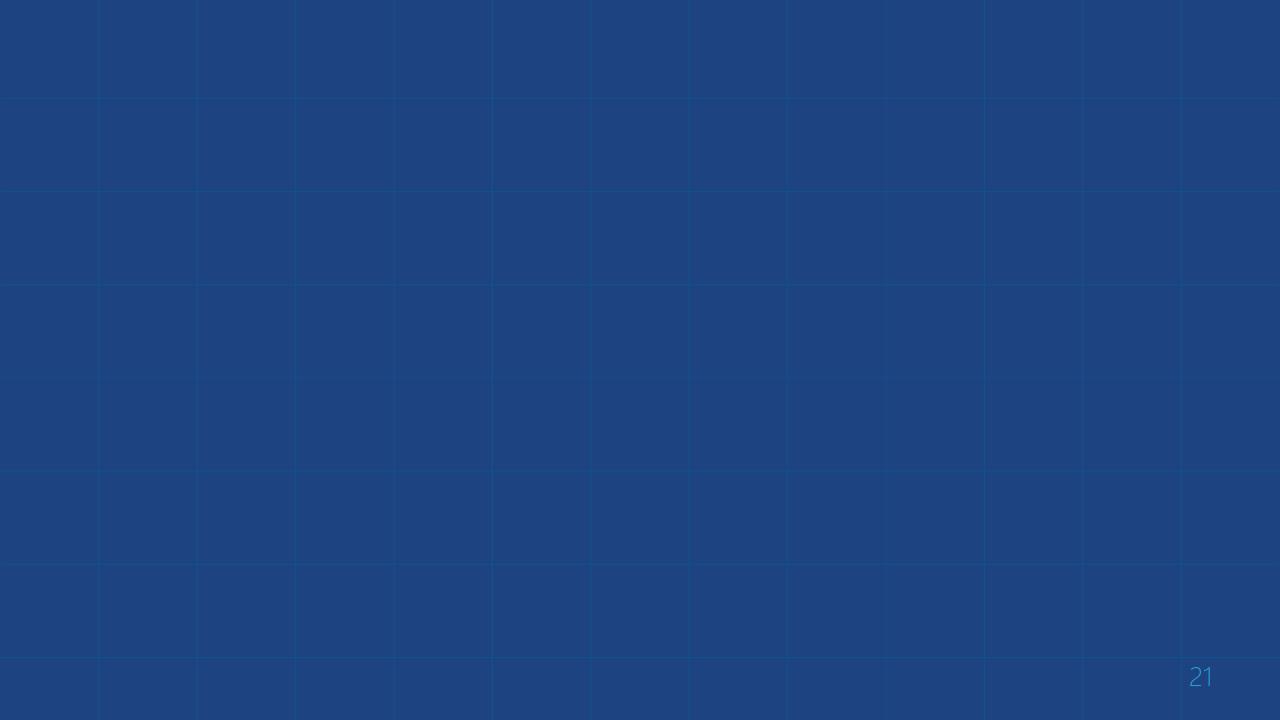
Largest scale-up

Networking

- Reserved IPs
- Multiple NIC's
- Forced Tunneling
- Network Security Groups
- Virtual Network Appliances
- ExpressRoute for Office 365
- Multiple load balanced IPs per VM
- Create virtual networks with private or public IP ranges
- High performance S2S VPN gateways (200Mbps vs 100Mbps)

Network Virtual Appliance Ecosystem

Application Gateway

- Azure managed HTTP layer 7 load balancing solution
- 99.9% uptime SLA for multi-instance gateways
- Cookie affinity and SSL offloading
- Load balance both Azure or On-Premises web services

Azure DNS
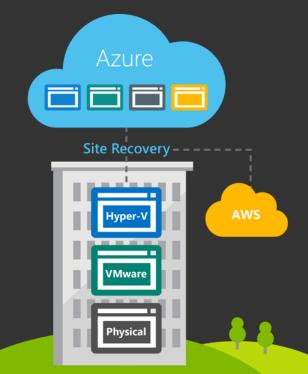
- Host and manage your public DNS domains in Azure
- Rapid updates to DNS records
- Global footprint & ultra-available
- Anycast fast query performance

Azure Site Recovery

Replicate and protect physical, VMware, AWS and Hyper-V VMs to Azure

- Migration cutovers to Azure in as little as minutes
- Automated asset discovery and migration
- On the fly conversion of source VM
- Auto-provisioned target Azure VM's
- Near zero downtime and data loss
- Failback to VMware infrastructure from Azure

Log Search

My Dashboard

Solutions Gallery

38.2MB
Servers and Usage
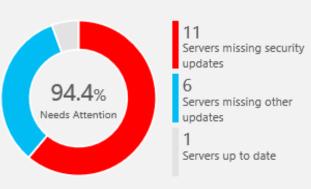
System Update Assessment

94.4%
Needs Attention

11
Servers missing security updates

6
Servers missing other updates

1
Servers up to date

Backup
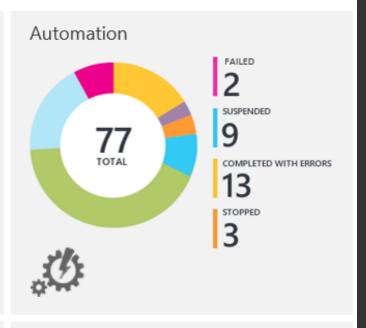
25
Servers backed up 5/6/2015

3 !
Errors in the last backup

Automation

77
TOTAL

FAILED
2

SUSPENDED
9

COMPLETED WITH ERRORS
13

STOPPED
3

Alert Management

0
Active critical alerts in the last 24 hours

7
Active warning alerts in the last 24 hours

9pm 1am 5am 9am 1pm 5pm

3
2
1
0
9pm 1am 5am 9am 1pm 5pm

Change Tracking

105
Software changes in the last 24 hours

67
Windows service changes in the last 24 hours (excludes Status)

150
100
50
0
4/23   4/25   4/27   4/29

60
40
20
0
4/23   4/25   4/27   4/29
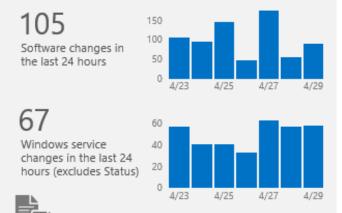
Security and Audit

17
Active Computers in the last 24 hours

46 ↗6
Accounts Authenticated in the last 24 hours

Azure RemoteApp

- Remote applications delivered from the reliable Azure platform
- Access from Windows, iOS, Mac OS X, and Android devices
- Delivered via Microsoft Remote Desktop Protocol and RemoteFX
- Automatic scaling based on demand
- Cloud or Hybrid capabilities

Azure SQL Database

SQL Server database technology as a service

- Fully Managed by Microsoft
- Ideal for simple and complex applications
- Designed to scale out elastically with demand
- Enterprise-ready with automatic support for HA
- Enterprise-grade features and near-zero administration
- Available in Basic (5GB), Standard (250GB), and Premium (500GB)
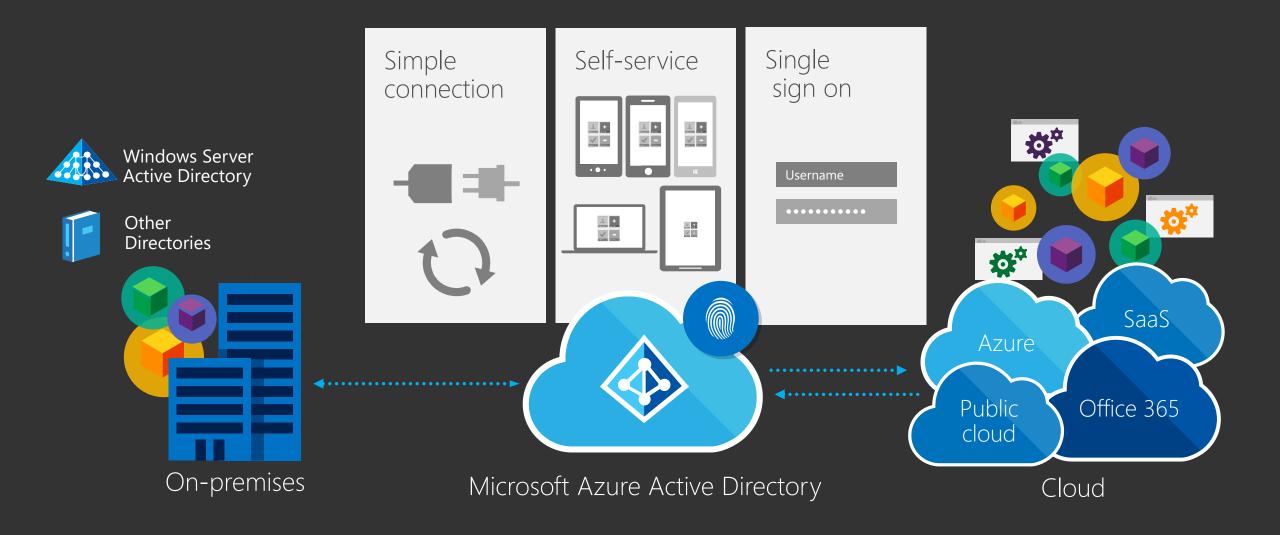
Azure Media Services

Scalable components for building custom media workflows in the cloud

- Cloud upload and storage
- Encoding & packaging
- Content protection
- CDN for live & on-demand streaming
- Player clients
- Backend for Office 365 video

Azure Active Directory

Simple connection

Self-service

Single sign on

Username

Windows Server Active Directory

Other Directories

On-premises

Microsoft Azure Active Directory

Azure

SaaS

Public cloud

Office 365

Cloud

Azure AD Application Gallery

- Federation in the cloud
- Instantly configure your favorite SaaS app for single sign-on
- Over 2500 3rd party pre-configured SaaS apps to choose from

Azure AD Application Proxy

- A no DMZ solution
- A cloud based proxy hosted in Azure
- No extra server infrastructure On-Premises required
- Make On-Premises web apps available in a secure manner to authenticated users
- On-Premises web apps do not need to be exposed to the internet

Azure AD Multi-Factor Authentication
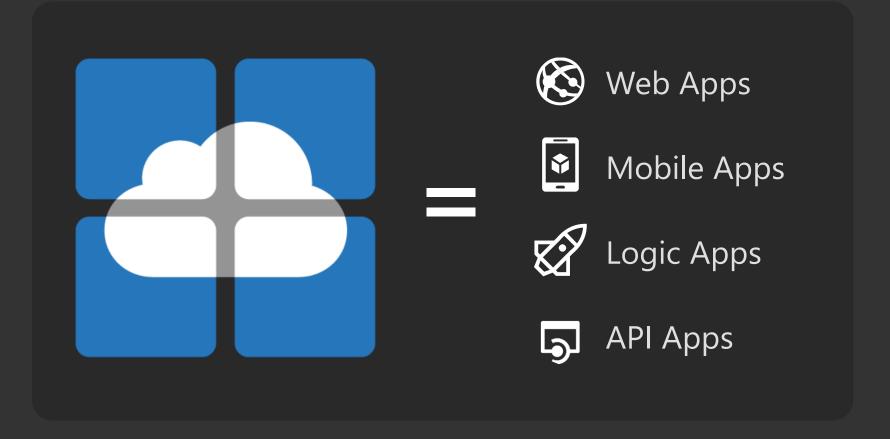
- Secure cloud or On-Premises resources
- Using existing personal or company provided phones
- Users manage their own authentication methods and phone numbers
- Verification options include phone call, text message, or mobile app notification

Azure AD Privileged Identity Manager

- Revoke access and enforce on-demand, time-limited admin access
- Discover the Azure AD privileged admin roles and their assignments
- Get reports on admin access history and changes in admin assignments

Azure App Service

Web Apps

Mobile Apps

Logic Apps

API Apps

→ Unique integrated offering

→ Build intelligent web and mobile apps
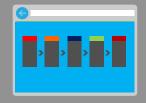
Azure App Service Example
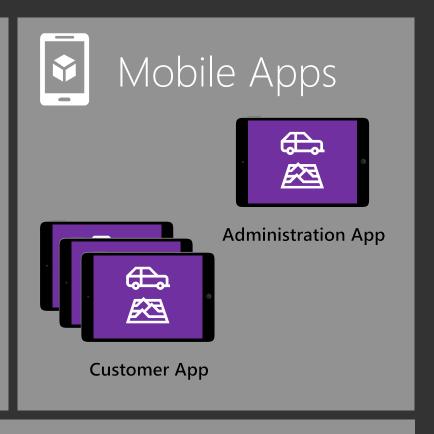
Common usage scenarios.
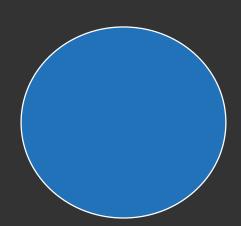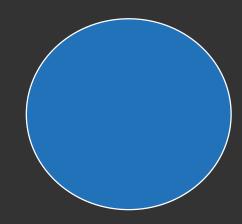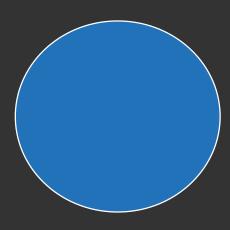
Store, Backup, Recover

Microsoft Azure
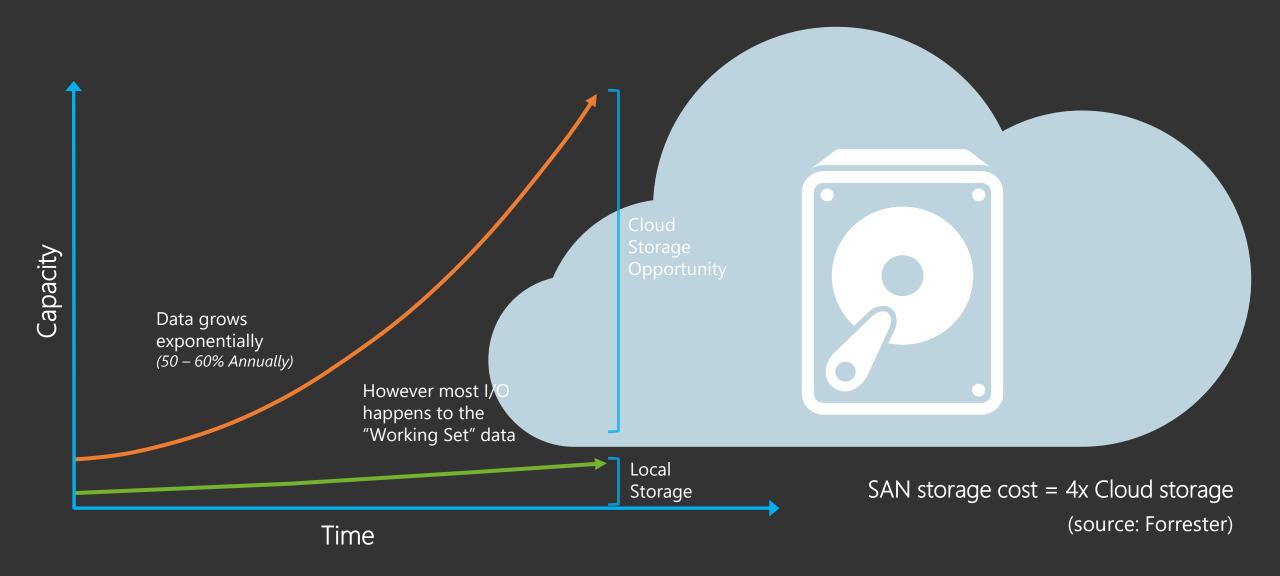
Store, backup, recover your data

Capacity

Data grows
exponentially
(50 – 60% Annually)

However most I/O
happens to the
"Working Set" data

Cloud
Storage
Opportunity

Local
Storage

Time

SAN storage cost = 4x Cloud storage

(source: Forrester)

Microsoft Azure Storage Abstractions

Blobs
Simple named files along with metadata for the file.

Files
Exposes blob storage as an SMB 2.1 file share

Tables
Structured storage. A table is a set of entities; an entity is a set of properties.

Queues
Reliable storage and delivery of messages for an application.
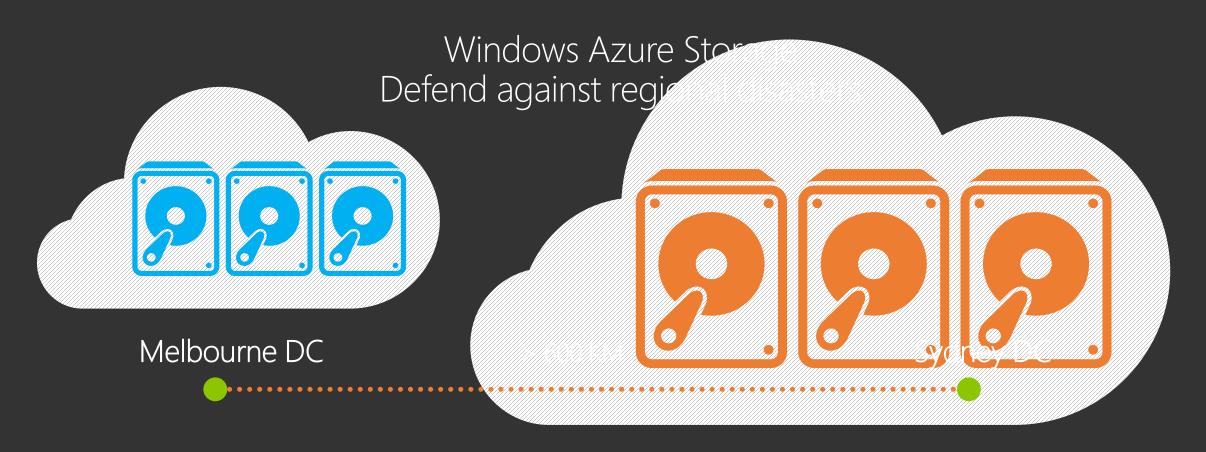
Microsoft Azure Storage

- Highly durable and scalable
- Multiple copies of your data
- Financially backed SLAs
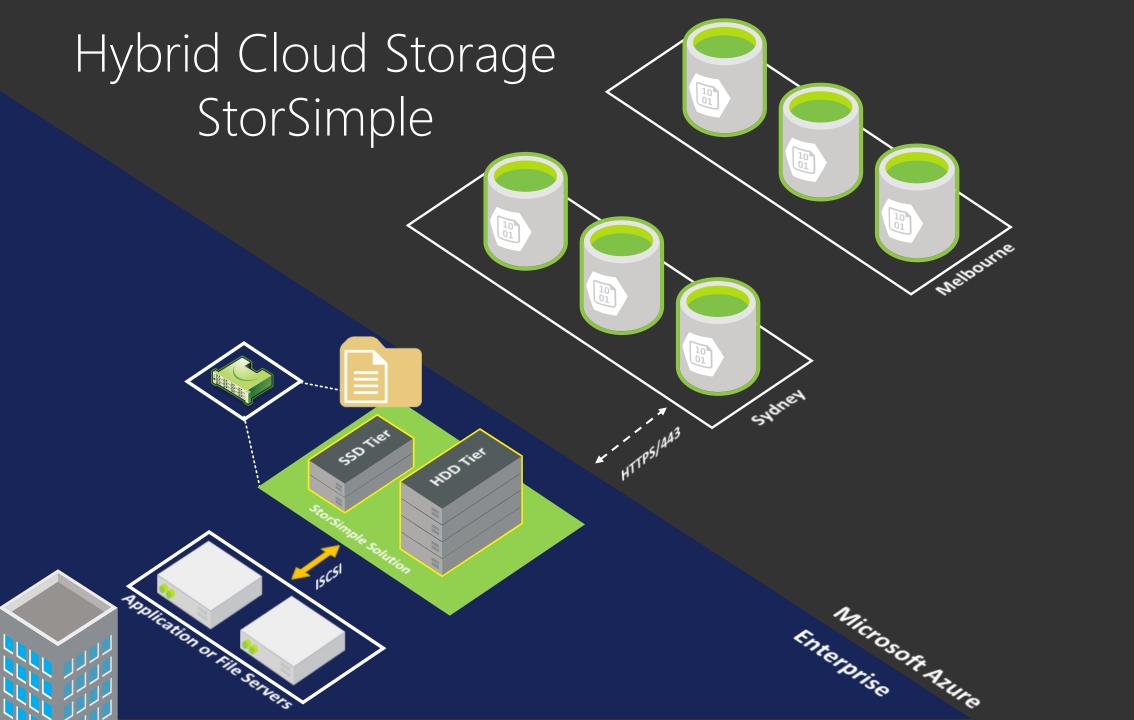
Automatic Storage Redundancy

Windows Azure Storage
Defend against regional disasters

Melbourne DC

Sydney DC
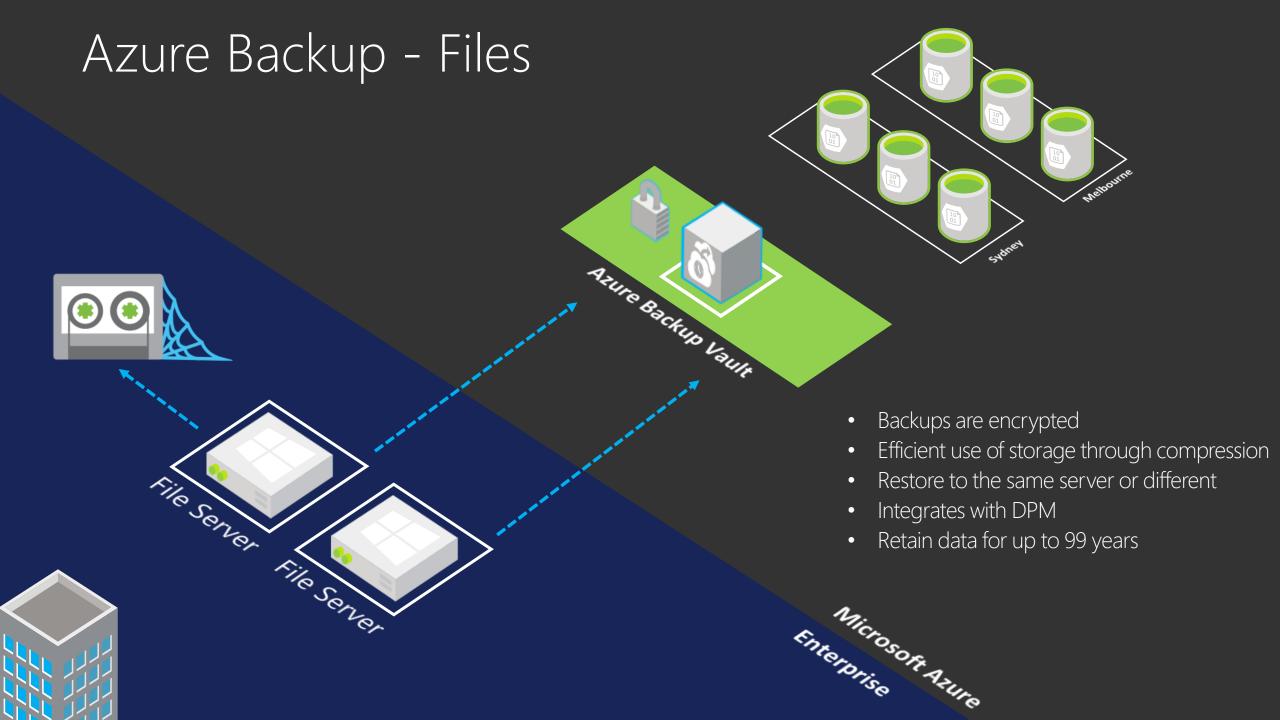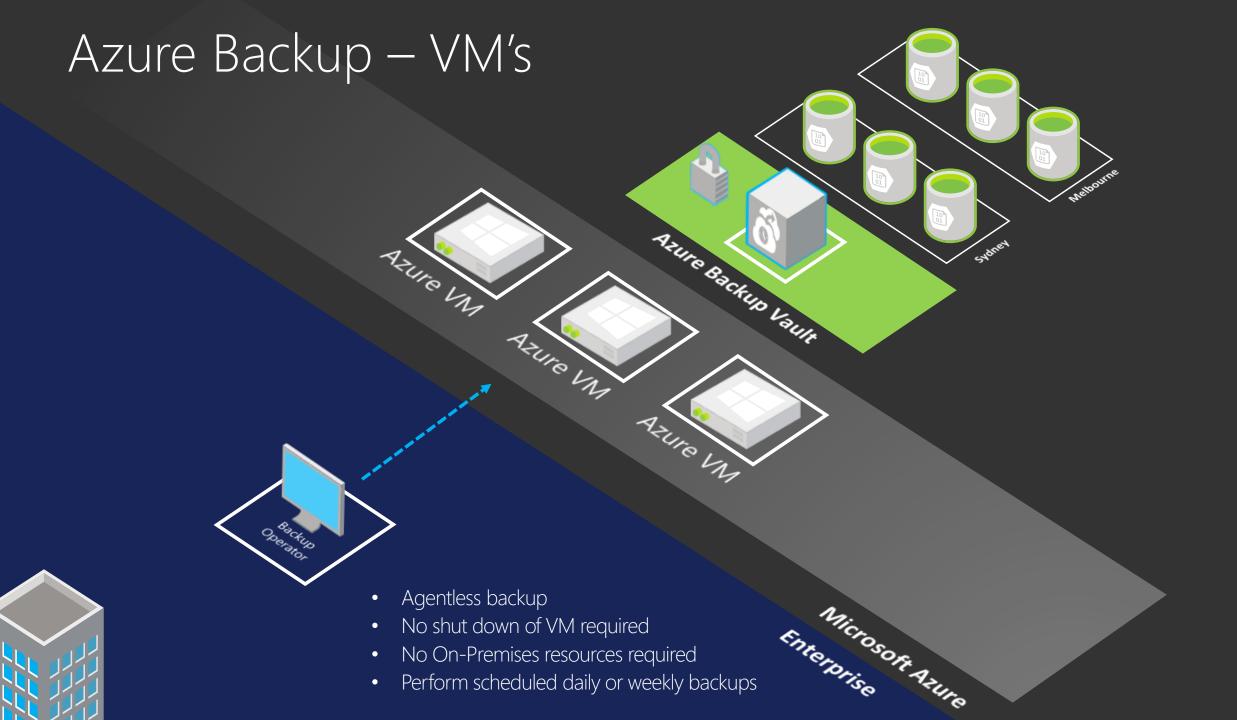
Geo replication enabled by default

Import/Export Your Data

Fast data transfer to Azure
Encrypted data transfer
Efficient recovery
Office 365 Import Service

Import service

COURIER SERVICE

100 Terabytes

Customer

Bitlockered HDD

Bitlockered HDD

BLOB STORAGE

Azure Datacenter

Export service

Hybrid Cloud Storage
StorSimple

Melbourne

Sydney

HTTPS/443

StorSimple Solution

SSD Tier

HDD Tier

iSCSI

Application or File Servers

Microsoft Azure

Enterprise

Azure Backup - Files

- Backups are encrypted
- Efficient use of storage through compression
- Restore to the same server or different
- Integrates with DPM
- Retain data for up to 99 years

File Server

File Server

Azure Backup Vault

Sydney

Melbourne

Microsoft Azure

Enterprise

Azure Backup – VM's

Azure VM

Azure VM

Azure VM

Azure Backup Vault

Sydney

Melbourne

Backup Operator

Microsoft Azure

Enterprise

- Agentless backup
- No shut down of VM required
- No On-Premises resources required
- Perform scheduled daily or weekly backups

Azure Site Recovery

Enterprise

Enterprise

Microsoft Azure

DR Orchestration

DR Orchestration

- Orchestrate planned/unplanned failovers for:
  - System Center Virtual Machine Manager
  - Hyper-V
  - VMWare

Azure Site Recovery

- Azure as your second datacenter
- Protect SCVMM, HyperV, VMWare vm's
- Perform planned/unplanned failovers
- Replicate changes back to On-Premises
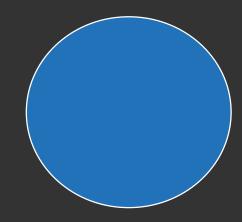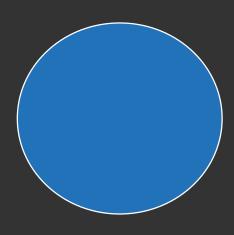
Demo: Azure Backup & Site Recovery

Store, Backup, Recover

Dev Test

Microsoft Azure
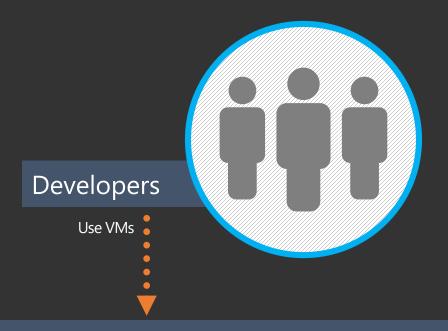
Dev & Test On-Premises
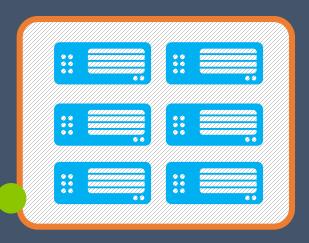
Challenges

- Limited hardware budget
- Limited software licensing
- Resource contention with VMs
- Compromised developer agility
- Realistic scale tests often challenging

Developers

Use VMs

Your Datacenter
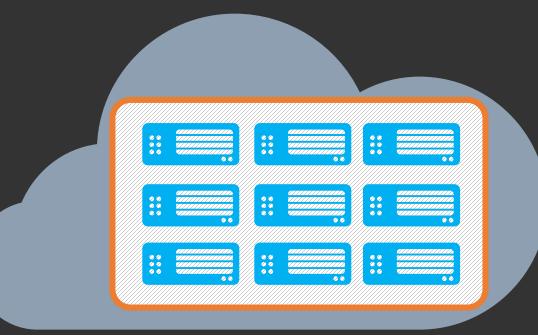
VMs in test/dev environment

Provision VMs

IT Admin

Dev & Test in Azure

Developers

Use VMs

Provision VMs
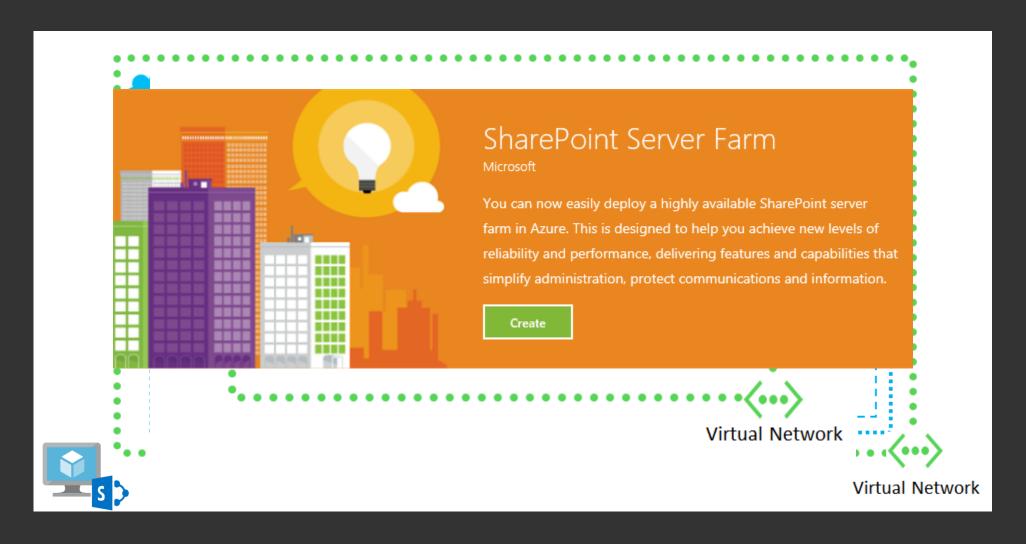
Advantages

- Cost effective (pay for what you use)
- Improved developer agility with platform services
- Ready to use gallery of images
- Ship tested in realistic scale scenarios
- Use existing development tools & languages
- Access On-Premises resources if necessary

Manage environment

IT Admin

Question...
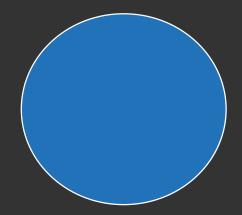
How long would it take to create this SharePoint environment today in Dev/Test?

Store, Backup, Recover

Dev Test

Microsoft Azure

Extend Your Infrastructure
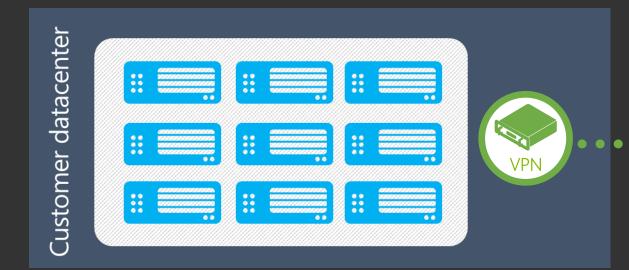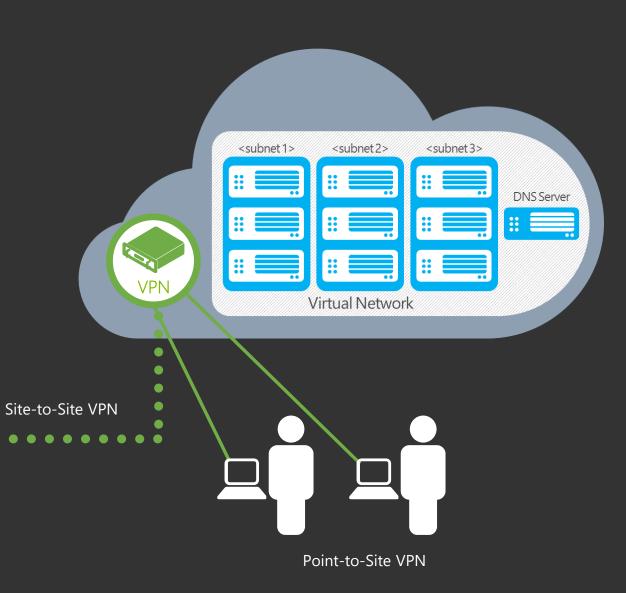
Hybrid Networking

- Virtual Network as your Datacenter extension
- Create Subnets, Private IP addresses
- Bring your own DNS
- Domain join your VMs

<subnet 1>   <subnet 2>   <subnet 3>

DNS Server

Virtual Network

VPN

Customer datacenter

VPN

Site-to-Site VPN

Point-to-Site VPN

Hybrid Networking Scenarios

Cloud		Customer	Segment & Workloads
	Secure point-to-site connectivity Virtual network (Point-to-Site)		• **Developers** • Small scale deployments • Connect from anywhere
	Secure site-to-site VPN connectivity Virtual network (Site-to-Site)		• **SMB, Enterprises** • Connect to Azure compute • IaaS and PaaS workloads
	Private site-to-site connectivity ExpressRoute		• **SMB & Enterprises** • Mission critical workloads • Backup/DR, media, HPC • Connect to all hardware

Store, Backup, Recover

Global Reach

Microsoft Azure

Dev Test

Extend Your Infrastructure
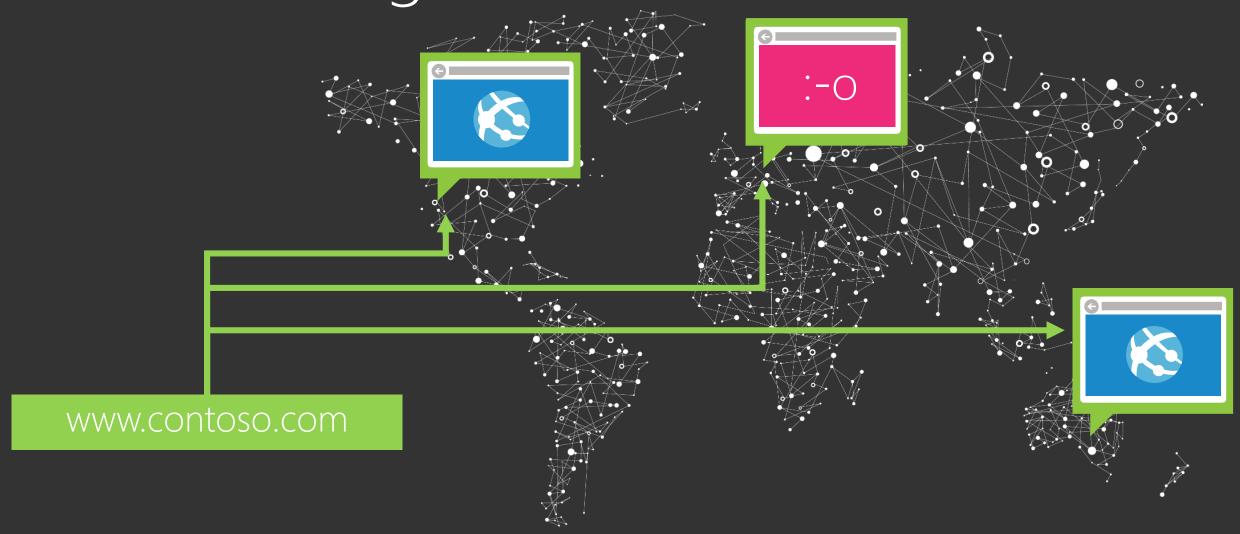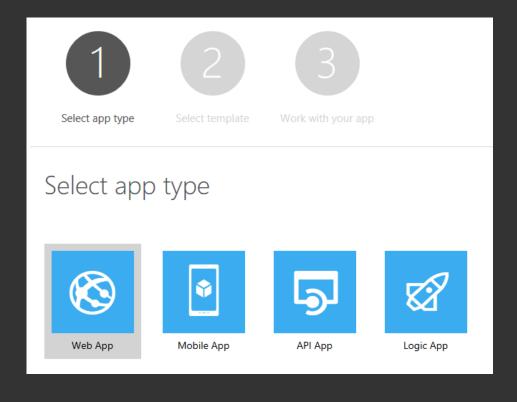
What next?

Try Azure App Service

https://trywebsites.azurewebsites.net/

Migrating IIS to Azure

https://www.migratetoazure.net/

- Windows Server 2003 is EOL
- 22M instances still running worldwide
- 17% are running IIS
- 1 in 6 instances use SQL 2005
- 53% are non-virtualized physical instances

IIS 6

Azure Websites

SQL 2005

Migration Tool

Azure SQL DB

Azure

Get started

Visit azure.microsoft.com

http://aka.ms/try-azure

Survey
http://bit.ly/1GXi5ax

Microsoft