Microsoft

Microsoft Azure
Services 101

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What is Microsoft Azure?

move faster

save money

integrate on-premise apps & data

scale on demand

The Cloud has changed how we work, where we work and how we do business.
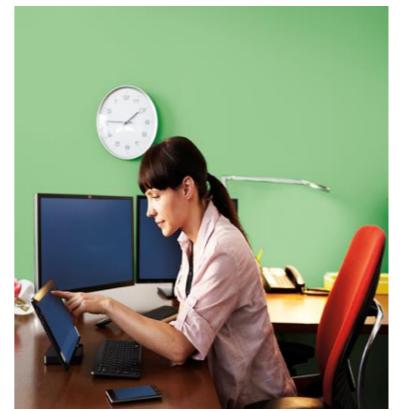
Microsoft Azure is an

open and flexible cloud platform that enables customers to rapidly build, deploy and manage secure applications to scale, on premises, in the cloud or both. Leverage the skills you already have and the world's most popular languages, tools, and frameworks.

Finally, deploy your applications on the same secure and reliable global datacenter network powering Xbox, Office365, Skype, and Bing—or your own on-premise datacenter.
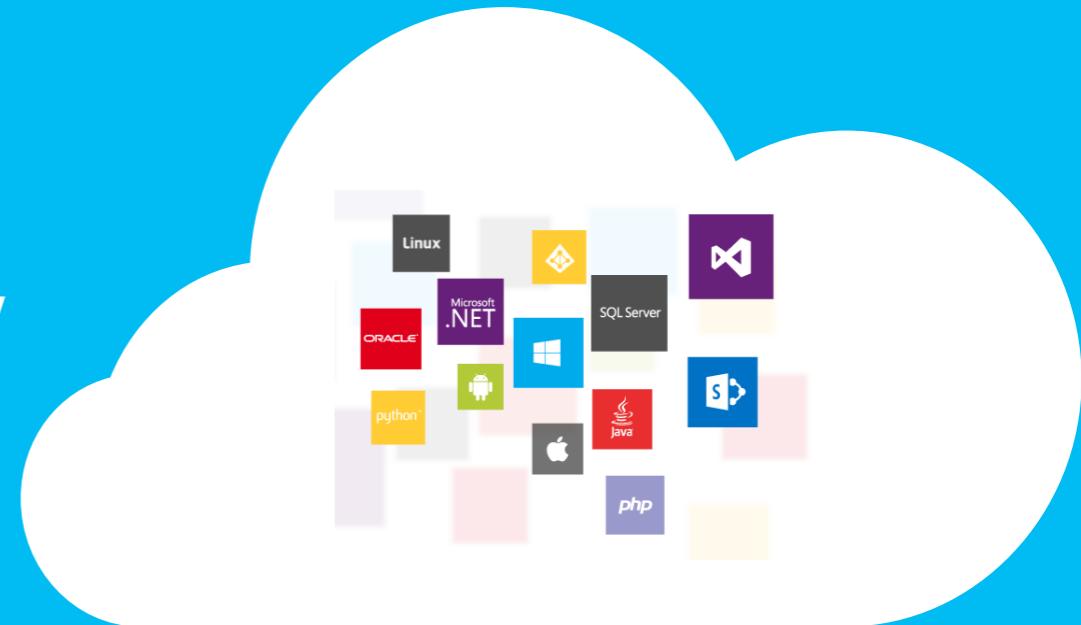
There's Customer Demand for Cloud & Specifically for Microsoft Azure

CIO Cloud Vendor Preferences
Mid/Large Enterprise CIOs Expecting to Use IaaS

- openstack CLOUD SOFTWARE — 4%
- rackspace — 9%
- cloudstack — 9%
- amazon web services — 12%
- vmware — 13%
- Microsoft Azure — 20%
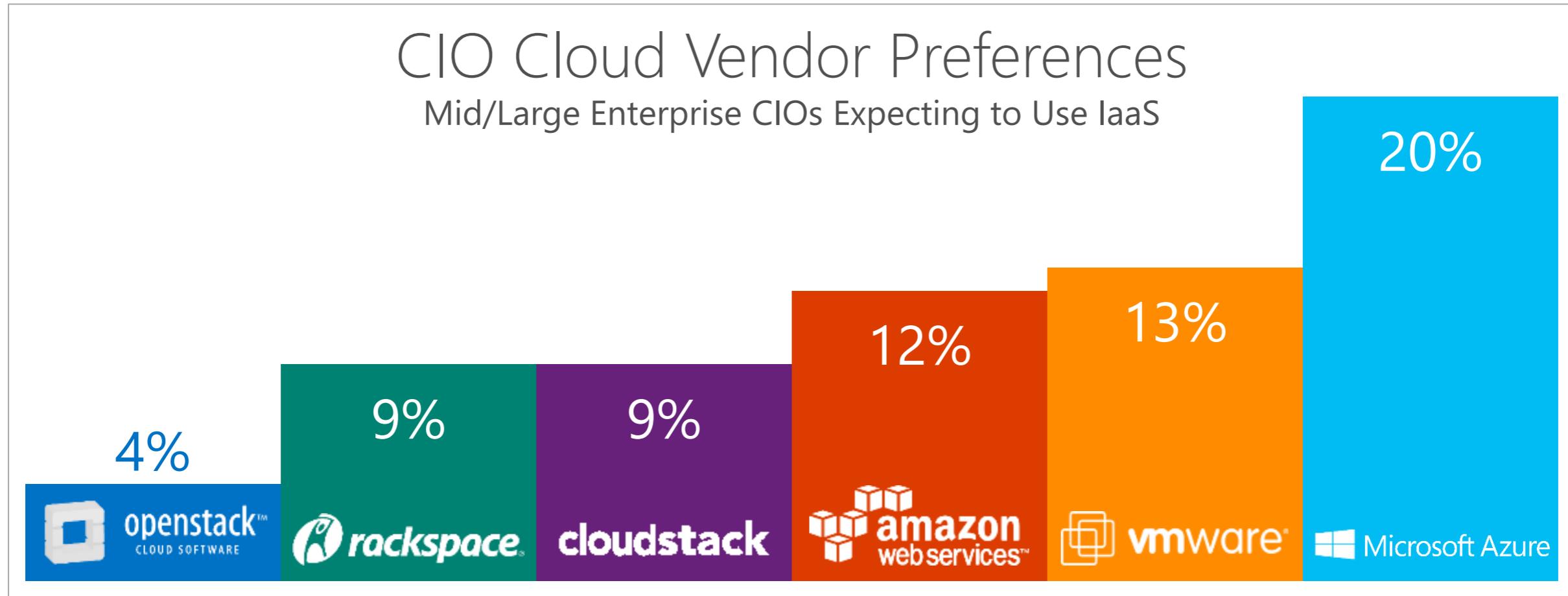
Source: Morgan Stanley CIO Survey, 2013. "Percentage of Enterprise CIOs Greater than $1B/$10B expecting to use IaaS by YE2014"

Microsoft's Cloud Offering is Strong

Over 60 services, with more to come in FY15

CDN	**Integration**	**HPC**	**Analytics**
Caching	**Identity**	**Service bus**	**Media**

Application Services

Virtual machines	**websites**	**Cloud services**	**Mobile services**

Compute

SQL database	**HD insight**	**Tables**	**Blob storage**

Data Services

Connections	**Virtual network**	**Traffic manager**	**Name resolution**

Networks
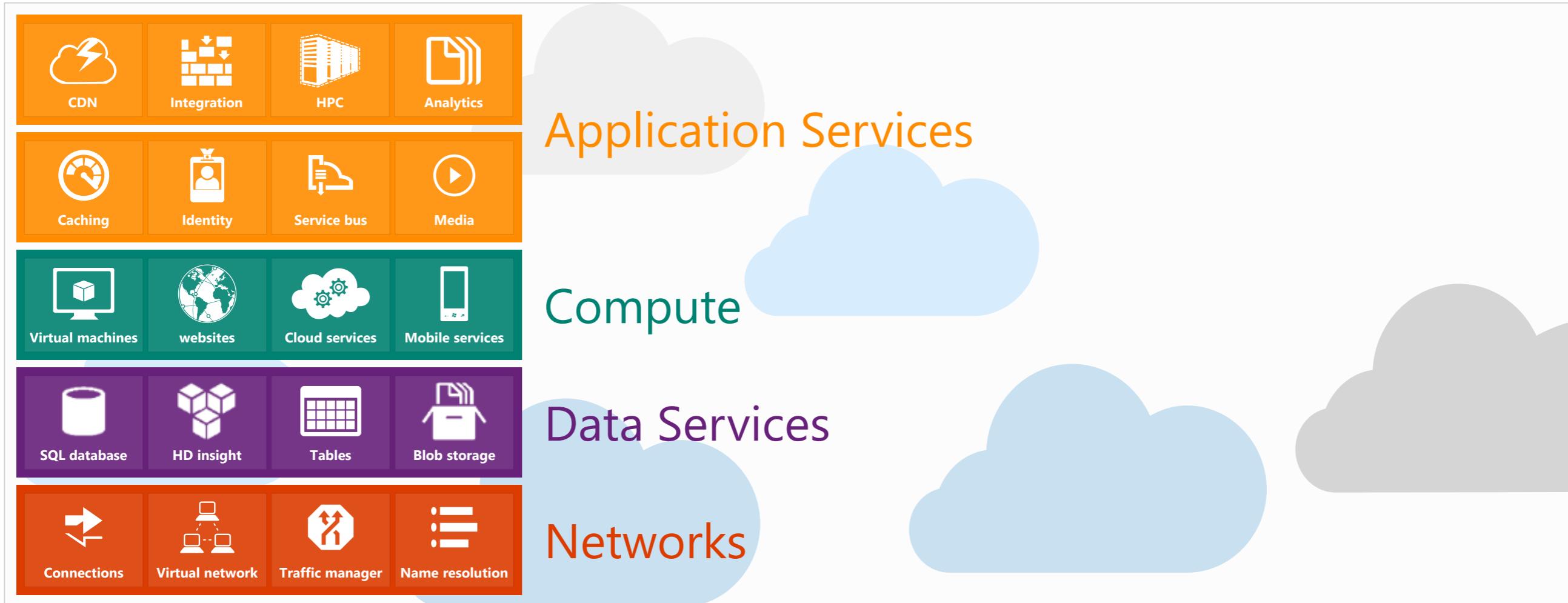
Understanding the Full Azure Offering

Any solution deployed utilizes a combination of these services

Application Services

Integration

Analytics

Identity

Compute

Virtual machines

Cloud services

Data Services

SQL database

HD insight

Networks

Connections

Virtual network

Customer deploys cloud-based application
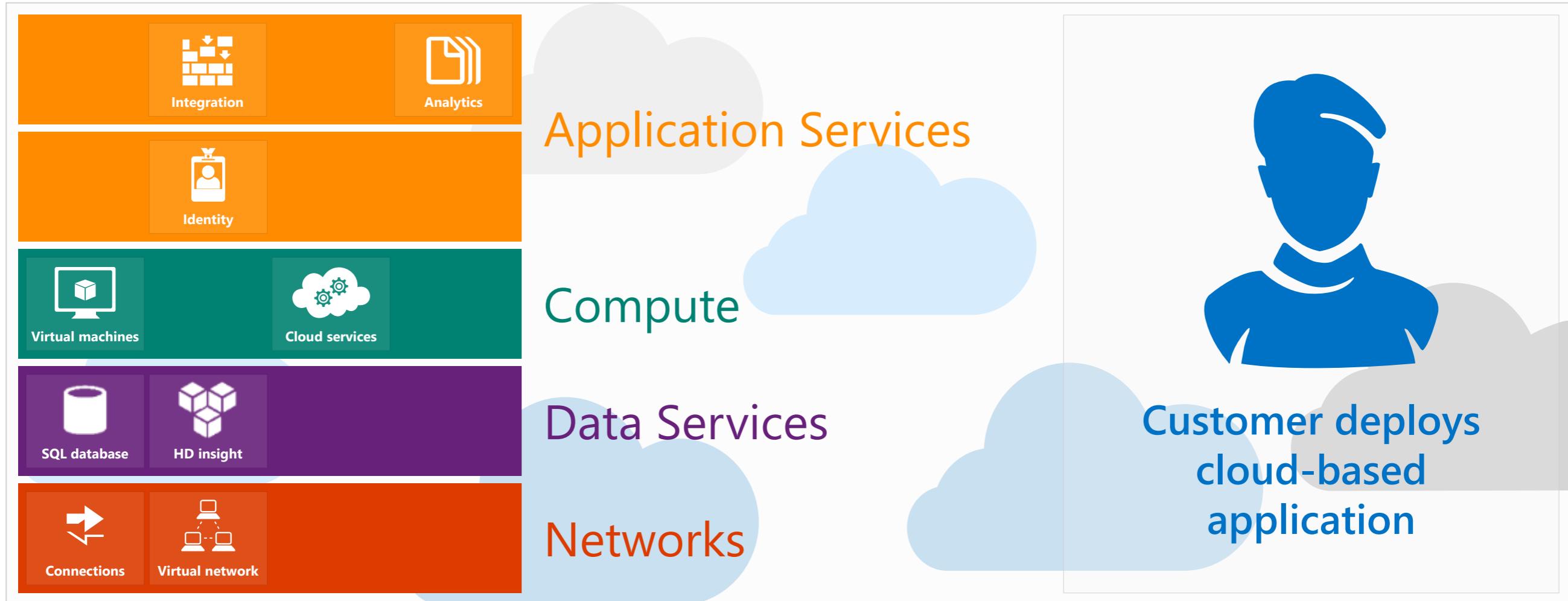
Understand the Azure Purchase Options

	Online Pay As You Go (PAYG)	Online Monetary Commitment	Enterprise Agreement Monetary Commitment
Service Needs	• Customers getting started with Azure • Handle on-demand, short term computing requirements	• Broad needs across the Azure platform • Steady monthly usage/growth	• Broad needs across the Azure platform • YoY Cloud usage growth • Through Azure SCE, commitment to Azure can drive deeper discount
Customer Scenarios	• Seasonal Computing requirements (Virtual Machines, Websites etc.)	• Startup with regular compute, storage and DB needs • Mid sized business initial app migration	• Enterprise migrating to the cloud • Med/Large customer projecting YoY cloud usage growth
Customer Requirements	• Zero Upfront, cancel anytime • Credit Card/Invoicing	• Monthly billing • Willing to commit to 6 or 12 months of service usage with Options to pre-pay • Credit Card/Invoice • Discounts starting at $500/month	• Upfront payments (SCE $0 commit) • Co-Terminous ONLY • Invoice only payment

Online – Pay as you go

Purchase online, directly through MOSP.
Two options for pay as you go customers:

Month to month
- Zero up front commitment.
- Pay based on monthly usage.
- End service at any time.
- Monthly billing.
- Pay with a credit card.

Use Scenario:
- Online Storage.
- Media Streaming.

6 or 12 month commitments
- Commitments start at $500/month.
- Customers pre-determine their approximate usage and commit to a monthly payment.
- Customers can pay monthly or pre-pay in advance.
- Any unused commitment balance will be credited forward.
- Discount offered according to commitment level.
- Monthly billing.

Use Scenario:
- Startup with Compute, Storage and DB needs.
- Med sized business initial app migration.

Understanding the EA Payment Process

Make upfront monetary commitment

Burn meters against that commitment

Pay Annually if no more than 50% beyond commitment

Pay Quarterly if more than 50% beyond commitment

Upfront commitment
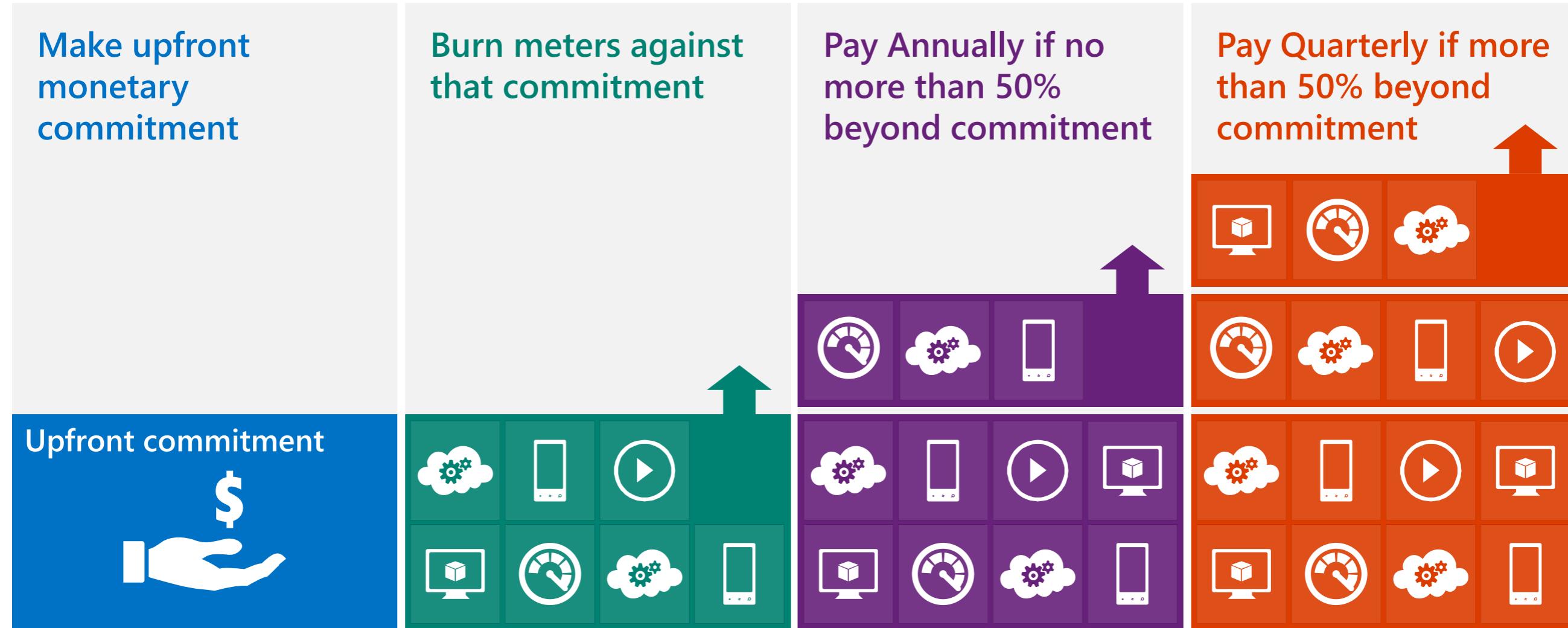
Pay for added usage at same great EA rates!

Our Best Prices

Access to the best Windows Azure pricing available
Better per-meter pricing than AWS on key cloud services*
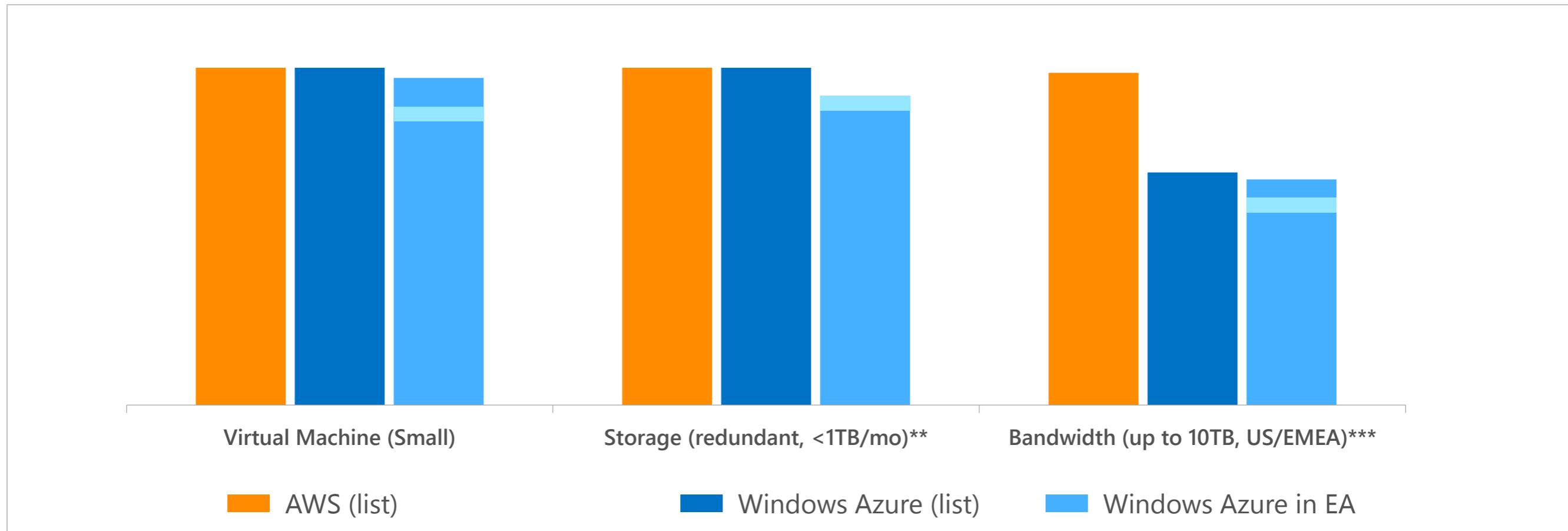
Virtual Machine (Small)	Storage (redundant, <1TB/mo)**	Bandwidth (up to 10TB, US/EMEA)***

Legend:
- AWS (list)
- Windows Azure (list)
- Windows Azure in EA

In the news: cloud pricing today

Extreme pressure on portal list prices

"Azure…Promises to Match Any AWS Price Drop"

- April 2013 (TechCrunch)

"Microsoft Azure Drops Storage Prices To Match Amazon's Latest Price Reduction"

- January 2014 (TechCrunch)

"Microsoft chops Azure prices to match Amazon's latest reductions"

- March 2014 (ZDNet)

Volume Licensing – EAs

Customers receive the best pricing option under an EA. The EA purchase process:

- Customers will makes an upfront 1-3 year commitment, based on their expected use.
- Usage is charged against the commitment, much like a cell phone bill.
- If a customer exceeds their commitment usage by no more than 50%, they will continue to pay yearly, at the EA rates.
- If the customer exceeds their commitment usage by more than 50%, they will pay quarterly.
- If the customer's usage does not match their commitment, there is no roll-over of funds, but the customer will be eligible for a subscription reduction at anniversary.

Payment methods: An initial upfront payment is required to enroll under an EA, overages beyond the initial commitment are billed by invoice.

Two methods to make the monetary commitment:

- Up front commitment in which the customer commits to a consistent dollar amount each year for three years.
- Incremental growth in which the customer makes an initial commitment, with a greater commitment for each successive year based on projected increase in Azure use.

Volume Licensing – EAs

- Two forms of enrollments are available under an Enterprise Agreement:
  - **Enterprise Enrollment** for your end user services and device needs, which covers popular products and services such as Office, Windows, and CAL Suites, allowing Azure to be added to an existing Enterprise Agreement.
  - **Server and Cloud Enrollment** for licensing your datacenter and infrastructure products and services, both on-premises and cloud hosted. Server and Cloud Enrollment replaces the Enrollment for Application Platform (EAP) and Enrollment for Core Infrastructure (ECI).

- SKU's can be used to add funds to a customers Azure Monetary Commitment balance.
- All SKUs are sold in service specific blocks, dependent upon the product.
- Customer discounts are based off the future pricing table with the standard EA A-D scale.

- EA Customers with eligible application server licenses that are covered by active Software Assurance can elect to use License Mobility through Software Assurance to move their licenses to Azure with no mobility fees.

SKU 101

- **General**
  - Enterprise Agreement SKUs will regularly have a higher purchase quantity (100hrs, 100GB, etc.), however, all usage will be metered and billed at the same quantities and under the same rules as listed on the individual service overview pages (www.azure.com).
  - Many Azure SKUs have recent updates to include region specific specifications, where pricing may be differentiated between regions.
  - In cases where Azure services have pricing that is based on the volume of usage, Enterprise Agreement discounts generally apply against the lowest volume tier price point. The exception to this is Azure Storage, where EA customers currently receive the highest volume tier price by default.

- **Compute**
  - SKUs are priced hourly, with actual billing based on the rounded down per minute usage.
  - A2, A3 and A4 are priced as a multiple of the A1 SKU, resulting in no unique SKUs for A2, A3 or A4. A2 = 2x A1. A3 = 4x A1. A4 = 8x A1.
    - This pricing is managed by having the deployment of A2, A3 or A4 emit a higher number of hours for every hour of deployment. For example, an A4 instance emits 8 hours for every hour deployed.
  - The A0 (XS) SKU is priced at a fraction of the A1 SKU:
    - Cloud Services: 1/4 of A1.
    - Windows VM: 2/9 of A1.
    - Linux VM: 1/3 of A1.

- **Monetary Commitment**
  - For customers purchasing Azure under an Enterprise Agreement, purchasing individual Azure service SKUs is not necessary, as the Monetary Commitment SKU (6QK-00001) provides a catch all debit account type function where funds apply to all Azure services consumed.
  - Exceptions, where services must be purchase individually:
    - Azure Paid Support (Standard, Pro-Direct) and Premier Support.
    - Enterprise Mobility Suite (EMS).
    - Azure Active Directory Premium.
    - Azure Store purchases – bills as Azure EA Overage.
    - Oracle on Azure licenses – bills as Azure EA Overage, much like Azure Store purchases.
    - Azure RMS – O365 sold product, despite the name.

SKU 101

Given the number of Azure SKUs, a SKU Map has been created, is intended to provide some direction as to which services are connected to which SKUs.

A1 Virtual Machines with a Linux OS that are deployed in the EU North (Amsterdam) and EU West (Dublin) datacenters

Service is a part of the Virtual Machines grouping of Compute offerings

The SKU Part Number is the unique SKU identifier and specific to the Commitment SKU

The SKU Part Number is the unique SKU identifier and specific to the Consumption SKU

The Started On date indicates the date that the SKU became available

Service associated to the Compute category from the Azure Website

All Azure services have both a Commitment and Consumption SKU. For all usage that draws down against an Azure EA upfront Monetary Commitment, this usage will be associated to the Commitment SKU

All Azure services have both a Commitment and Consumption SKU. For all usage that is incurred above and beyond the upfront Monetary Commitment, this usage will be associated to the Consumption or "overage" SKU

Based on the type of service, the Quantity per Unit indicates how many hours, GBs, transactions etc. are included in the price of the SKU

Service Name	Category	Service	Commitment SKU Name	Commitment SKU Part Number	Consumption SKU Name	Consumption SKU Part Number	Commitment Quantity Per Unit	Started On
A1 VM (Non-Windows) - EU North	Compute	Virtual Machines	AzureCompute ShrdSvr ALNG SubsVL MVL 100hrs Commit A1VMNon-WinEUN	N7H-00316	AzureCompute ShrdSvr ALNG Fee MVL 100hrs Ovrg A1VMNon-WinEUN	N7H-00317	100	3/29/2014
A1 VM (Non-Windows) - EU West	Compute	Virtual Machines	AzureCompute ShrdSvr ALNG SubsVL MVL 100hrs Commit A1VMNon-WinEUW	N7H-00364	AzureCompute ShrdSvr ALNG Fee MVL 100hrs Ovrg A1VMNon-WinEUW	N7H-00365	100	3/29/2014

In cases where Azure is purchased under the Enterprise Agreement, upfront purchases are made against the generic Monetary Commitment SKU. This SKU (6QK-00001) is priced at $100/month (or local currency equivalent) and provides a simplified SKU against which a purchase can be made without having to select individual services/SKUs against which consumption is planned or may occur.

SKU 101

Some Azure and related Cloud & Enterprise services are currently only available within specific purchase/licensing channels.

	Azure Website	Enterprise Agreement	Open
EMS		X	
StorSimple		X	
Azure AD (free)	X	X	X
Azure AD (Premium)		X	
RemoteApp*	X		
Azure Paid Support	X	X	
Azure Store	X	X	
Azure RMS**		X	X
All other Azure services	X	X	X

*Currently available as a Free Preview.
**Azure RMS is sold separately from the Azure platform services

Microsoft Azure: Compute

Compute

Virtual Machines deliver on-demand, scalable compute infrastructure when you need to quickly provision resources to meet your growing business needs. With Virtual Machines, you get a choice of Windows Server and Linux operating systems in multiple configurations on top of the trustworthy Azure foundation.

Websites offers secure and flexible development, deployment and scaling options for any sized web application. Leverage your existing tools to create and deploy applications without the hassle of managing infrastructure.

Mobile Services allows for the creation of a scalable and secure backend for your Windows, Android, and iOS apps. Mobile Services allows you to accelerate your mobile app development by providing a turnkey way to structure storage, authenticate users, and send push notifications. With SDKs for Windows, Android, iOS, and HTML as well as a powerful and flexible REST API, Mobile Services lets you to build connected applications for any platform and deliver a consistent experience across devices.

Cloud Services offers highly-available, infinitely scalable applications and API's. Quickly deploy and manage powerful applications and services with Azure Cloud Services. Simply upload your application and Azure handles the deployment details - from provisioning and load balancing to health monitoring for continuous availability. Your application is backed by an industry leading 99.95% monthly SLA. You just focus on the application and not the infrastructure. It's that good.

Compute – Virtual Machines

- **Azure Virtual Machines** enable you to deploy a Windows Server, Linux, or third-party software images to Azure. Select images from a gallery or provide customized images.
- Virtual machines are charged by the minute. Prices are listed as hourly rates and billed based on usage.
- To meet customer needs, two compute tiers for Windows and Linux have been recently introduced: **Basic** and **Standard**.

- **Basic Compute Tier**: These instances do not include load balancer and auto-scaling. They are well-suited for single instance production applications, development workloads, test servers and batch processing applications that might not require these features.
- **Standard Compute Tier**: This tier of compute instances provides an optimal set of compute, memory and IO resources for running a wide array of applications. These instances include both auto-scaling, load balancing, and internal load balancing capabilities at no additional cost.

Compute – Virtual Machines

Virtual Machines – SKU Details

- **General Purpose Instances:**
  - Made up of instances in the A0 – A4 range.
  - The Extra-Small through the Extra-Large Instances are billed through the A1 SKU.
    - *A2, A3, and A4 instances are simply a multiple of hours based on the number of cores included in their configuration. For example, an A4 machines emits 8 A1 hours for every hour it runs.*
  - Unique, region specific SKUs are available for the Windows and Linux versions.

- **Memory Intensive Instances:**
  - A5, A6, and A7 instances all have their own region specific SKUs based on Windows or Linux
- **Compute Intensive Instances:**
  - A8 and A9 instances have their own unique SKUs based on Windows or Linux versions, region specific.
- Virtual Machines can be deployed with **Windows, Linux, SQL Server, BizTalk Server, SharePoint** or **Oracle** licenses included for use on an hourly basis.
- **Enterprise Agreement/Volume Licensing** customers receive a discount on the hourly rate of the Virtual Machines service.

For current VM Windows pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-machines

For current VM Linux pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-machines/#linux

For more information about Virtual Machines: http://msdn.microsoft.com/library/azure/dn197896.aspx

Compute – Virtual Machines

Virtual Machines – SKU Details Continued

SQL Server and Biz Talk Server

- **SQL Server** has unique SKUs for each of its three performance tiers.
- **Biz Talk Server** has unique SKUs for each of its two performance tiers.
- Price increases in a linear fashion after 4 cores.
- Prices for SQL Server and Biz Talk Server do not included the price of the underlying Windows or Linux instance.

Oracle

- **Java Development** under **Oracle** has a unique SKU per number of cores.
- Each Oracle Server and Database has a unique SKU based on tier.
- Pricing is linear after the first 2 cores.

For current SQL Server pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-machines/#sql-server

For current Biz Talk Server pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-machines/#biztalk-server

For current Oracle pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-machines/#oracle-software

For more information about Virtual Machines: http://msdn.microsoft.com/library/azure/dn197896.aspx

Compute – Cloud Services

Cloud Services – Overview & SKU Details

General Purpose Instances:

- Provide optimal set of compute, memory and IO resources for running a vast array of applications.
- Made up of Extra Small to Extra Large instances (1-8 cores), with one SKU, divided by region.

Memory Intensive Instances:

- Provide large amount of memory optimal for running high throughput applications, such as databases. Memory is allocated symmetrically per Virtual Core at 7 GB per Virtual Core.
- A5, A6, and A7 instances (2, 4, or 8 cores) all have their own unique SKUs, divided by region.

Compute Intensive Instances:

- Provide faster processors, faster interconnect, more virtual cores for higher compute power, larger amounts of memory. These instances include an additional 40Gbit/s InfiniBand network.
- A8 and A9 each have a unique SKU, divided by region.

For current Cloud Services pricing: http://azure.microsoft.com/en-us/pricing/details/cloud-services/

For more information about Cloud Services: http://azure.microsoft.com/en-us/services/cloud-services/

Compute – Website

Website – Overview & SKU Details

Website

- **Azure Websites** is offered in four tiers: **Free, Shared (Preview), Basic,** and **Standard.**
- Websites are sold in three different sizes:
  - **Small** – 1 core
  - **Medium** – 2 cores
  - **Large** – 4 cores
- SKUs are divided by both size (S, M, L) and tier (basic and standard).

Secure Sockets Layer (SSL)

- **Secure Sockets Layer (SSL)** for custom domains is available for Basic and Standard Websites. SSL enables secure connections (https://) to custom domain website.
- Two types of SSL connection support are offered: Server Name Indication (SNI) SSL Connections and IP Address SSL Connections. SNI-based SSL works on modern browsers while IP-based SSL works on all browsers.
- SNI SSL and IP SSL are each a unique SKU.

For current Websites pricing: http://azure.microsoft.com/en-us/pricing/details/web-sites/

For more information about Websites: http://azure.microsoft.com/en-us/services/web-sites

Compute – Mobile Services

- **Azure Mobile Services** provides a scalable cloud backend for building Windows Store, Windows Phone, Apple iOS, Android, and HTML/JavaScript applications. Store data in the cloud, authenticate users, and send push notifications to your application within minutes.

- Azure Mobile is offered in three tiers, each with a unique SKU: **Free, Basic,** and **Standard.**

- Each tier offers a different number under API Calls, Active Devices, Scale, and Scheduled Jobs.

- *SQL Database required for each tier.*
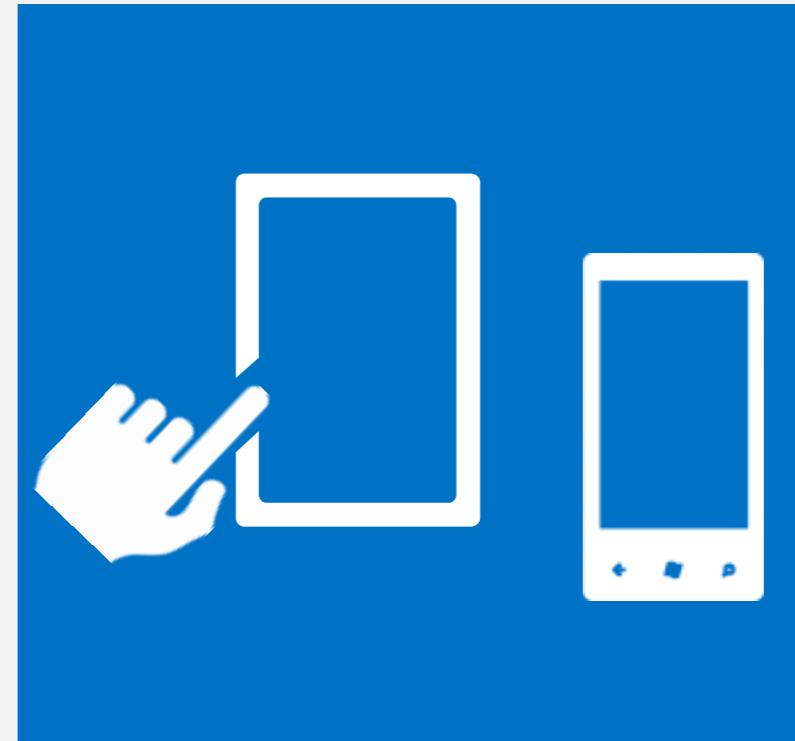
For current Mobile Services pricing: http://azure.microsoft.com/en-us/pricing/details/mobile-services/

For more information about Mobile Services: http://azure.microsoft.com/en-us/services/mobile-services/

Microsoft Azure: Data Services

Data Services

Storage provides anywhere and anytime access via a cloud storage system. It is highly durable, available and massively scalable.

SQL Database makes tier-1 capabilities easily accessible for cloud architects and developers by delivering predictable performance, scalability, business continuity, data protection, and near-zero administration—all backed by the power and reach of the Microsoft Azure platform.

HDInsight brings an Apache Hadoop-based solution to the cloud. It provides the ability to gain the full value of Big Data with a modern, cloud-based data platform that manages data of any type, whether structured or unstructured, and of any size.

Cache creates the ability to build highly scalable and responsive applications by providing super-fast access to data through a family of distributed, in-memory, scalable solutions.

Backup Recovery offers familiar tools in Windows Server, Windows Server Essentials, or System Center Data Protection Manager to provide a cloud backup service.

Azure Site Recovery helps protect important services by coordinating the automated replication and recovery of System Center 2012 private clouds at a secondary location.

Data Services – Storage

Storage - Overview

Block Blobs, Page Blobs, and Disks

- Customers are charged for **Azure Storage** based on storage capacity, storage transactions (number of read and write operations to storage) and data transferred (data egress).
- **Block Blobs**: Block blobs (Binary Large Object) are a scalable and cost-effective way to upload and download large amounts of blob data to reliably store, in any sequence (and importantly, asynchronously. The typical use cases include data sharing, big data and backups.
- **Page Blobs and Disks**: Page blobs provide block-storage that are optimized for random access and frequent updates. Because of their high performance, durability and reliability, they are used as persistent disks for VMs in Azure.

Tables and Queues, Files

- **Tables and Queues**: Tables are massively scalable and extremely easy-to-use NoSQL database. They provide key-value based storage for structured and semi-structured data. Queues provide a reliable messaging system that allow implementing scheduling of asynchronous tasks and implement persistent messaging.
- **Files**PREVIEW: Files allows VMs in an Azure data center to mount a shared file system using the SMB protocol and access the file system using standard Windows file APIs. VMs can attach to these file systems concurrently, allowing data to be shared easily between various roles and instances. Additionally, data can be accessed using Windows file APIs or file REST API.

Data Services – Storage

Storage – SKU Details

- **Block Blobs, Page Blobs and Disks, Tables and Queues, Files**
- Block Blobs, Page Blobs and Disks, and Tables and Queues are broken down by redundancy level (LRS, GRS, RA-GRS) and storage capacity.
- Files^{PREVIEW} is only offered in one size.
- Each redundancy level (LRS, GRS, RA- GRS) has an unique SKU.

Redundancy Levels for Storage
- **Locally Redundant Storage (LRS):** multiple replicas of data maintained within a single region to provide high durability.
- **Geographically Redundant Storage (GRS**): additional data durability asynchronously provided by replicating between two regions hundreds of miles apart within the same geo. In both regions, multiple replicas of data are maintained.
- **Read-Access Geographically Redundant Storage (RA-GRS**): in addition to geographically redundant storage, read-only access to the storage account in the secondary region that will have an eventually consistent copy of the data in the primary storage, is provided. Customers can use this service to access their data when the storage account in the primary region is unavailable.

For current Storage pricing: http://azure.microsoft.com/en-us/pricing/details/storage/

For more information about Storage: http://azure.microsoft.com/en-us/services/storage/

Data Services – SQL Database

SQL Database – Overview

SQL Database

- **SQL Database** is the right solution for cloud-designed apps when developer productivity and fast time-to-market are key.
- Available in four tiers: Web/Business, Basic, Standard & Premium
  - **Web and Business editions**: Offers a one-size-fits-most option for customers with light-weight database workloads. Web edition scales to 5 GB while Business edition scales to 150 GB.
  - **Basic (Preview):** Designed for applications with a light transactional workload. Performance objectives for Basic provide a predictable hourly transaction rate.

Service Tiers

- **Standard (Preview):** Standard is the go-to option for getting started with cloud-designed business applications. It offers mid-level performance and business continuity features. Performance objectives for Standard deliver predictable per minute transaction rates.
- **Premium (Preview):** Designed for mission-critical databases. Premium offers the highest performance levels for SQL Database and access to advanced business continuity features. Performance objectives for Premium deliver predictable per second transaction rates.

Data Services – SQL Database

SQL Database – SKU Details

Web and Business

- **Web and Business** has a unique SKU. Prices increase linearly with the size of the database.
- **Web and Business** service tiers will be retired in April 2015.

Basic, Standard, and Premium

- **SQL Database** new service tiers are available in multiple performance levels across three service tiers: Basic, Standard, and Premium editions, each with a unique SKU.
- **Basic:** 1 performance tier
- **Standard**: 2 performance tiers
- **Premium**: 3 performance tiers

For current SQL Database pricing: http://azure.microsoft.com/en-us/pricing/details/sql-database/

For more information about SQL Database: http://azure.microsoft.com/en-us/services/sql-database/

Data Services – HDInsight

HDInsight – Overview & SKU Details

- An **HDInsight** deployment consists of a head node, a secure gateway node, and one or more data nodes. The head node and data nodes are billed on an hourly basis prorated to the nearest minute that a cluster exists, and the secure node is free. Charges start when the cluster creation completes and stops when you request that the cluster be deleted. There is no concept of de-allocating or putting the cluster "on hold".

- Other Azure services associated with **HDInsight** such as Storage and Data Transfers are billed separately using the standard rates for Storage and Data Transfers. Standard data transfer charges will also apply when transferring data from one region to another.

- **HDInsight** has one SKU, with pricing increasing linearly based on Node size.

For current HDInsight pricing: http://azure.microsoft.com/en-us/pricing/details/hdinsight/

For more information about HDInsight: http://azure.microsoft.com/en-us/services/hdinsight/

Data Services – Cache

Cache – Overview & SKU Details

- **Azure Redis Cache**^{PREVIEW}: Built on the open source Redis cache. This is a dedicated service, For currently in Preview.
- **Managed Cache Service**: Built on AppFabric Cache. This is a dedicated service, For currently in General Availability.
- **In-Role Cache**: Built on App Fabric Cache. This is a self-hosted cache, available via the Azure SDK. Cloud Services rates apply.
- Shared Caching Service*: A managed, multi-tenant shared cache service.

  * This service will be retired by September 3, 2014 as the Silverlight Portal used to manage Shared Caching will be decommissioned on September 3, 2014.

- **Azure Redis Cache** is offered in two tiers:
  - Basic: provides a cache with a single node.
  - Standard: provides a cache with a two-node Primary/Secondary combination. Automatic replication managed between the two nodes, additionally offered is a high-availability SLA once the service becomes generally available.
  - SKU's are divided based on tier and cache size.
- **Managed Cache Services** are provided in three services tiers, each with a unique SKU: Basic, Standard, and Premium.

For current Cache pricing: http://azure.microsoft.com/en-us/pricing/details/cache/

For more information about Cache: http://azure.microsoft.com/en-us/services/cache/

Data Services – Backup

Backup – Overview & SKU Details

- **Backup** is charged based on the amount of data stored in the Backup service. There is no charge for additional bandwidth, storage, storage transactions, compute, or other resources associated with providing the Backup service.
- SKU's based on Compressed Data Stored Per Month.
- First 5 / GB Month - free
- Greater than 5 GB / Month is broken into unique SKUs.

For current Backup pricing: http://azure.microsoft.com/en-us/pricing/details/backup/

For more information about Backup: http://azure.microsoft.com/en-us/services/backup/

Data Services – Azure Site Recovery

Azure Site Recovery – Overview & SKU Details

- **Azure Site Recovery** (formerly Recovery Manager) is billed based on number of virtual machines protected, with one unique SKU.

- It's billed in units of the average daily number of virtual machines you are protecting over a monthly period. For example, if you consistently protected 20 virtual machines for the first half of the month and none for the second half of the month, the average daily number of protected virtual machines would be 10 for that month.

For current Site Recovery pricing: http://azure.microsoft.com/en-us/pricing/details/site-recovery/

For more information about Site Recovery: http://azure.microsoft.com/en-us/services/site-recovery/

Microsoft Azure: App Services

App Services

Media Services offer cloud-based media solutions from many existing technologies from the Microsoft Media Platform and our media partners, including ingest, encoding, format conversion, content protection and both on-demand and live streaming capabilities.

Service Bus serves as a messaging infrastructure that sits between applications allowing them to exchange messages for improved scale and resiliency.

Notification Hubs provide a highly scalable, cross-platform push notification infrastructure that enables either broadcast push notifications to millions of users at once or tailor notifications to individual users.

Scheduler allows actions - such as calling HTTP/S endpoints or posting a message to a storage queue - on any schedule. With Scheduler, create jobs in the cloud that reliably call services both inside and outside of Azure and run those jobs on demand, on a regularly recurring schedule.

Automation allows for the automation, creation, deployment, monitoring, and maintenance of resources in the Azure environment using a highly scalable and reliable workflow execution engine, allowing for a decrease in operational expense for cloud operations.

BizTalk Services provides Business-to-Business (B2B) and Enterprise Application Integration (EAI) capabilities for delivering cloud and hybrid integration solutions through a simple, powerful, and extensible cloud-based integration service.

App Services

Visual Studio Online allows the ability to host code, plan and track projects, and collaborate with team members to ship better software. Visual Studio Online provides an end-to-end, cloud-based ALM solution that handles everything from hosted code repos and issue tracking to load testing and automated builds.

Active Directory is a comprehensive and highly available identity and access management cloud solution. It combines core directory services, advanced identity governance and application access management.

Multi-Factor Authentication helps secure access to on-premises and cloud applications by providing an additional layer of authentication It supports authentication through mobile app, phone call or text message.

CDN improves performance of applications by caching content at locations closest to your customers.

API Management allows organizations to publish APIs more securely, reliably, and at scale. Use API Management to drive API consumption among internal teams, partners and developers while benefiting from business and operational insights available in the admin portal.

RemoteApp delivers Windows Server-based applications from Azure. Users can access their applications remotely from virtually anywhere, at any time, and on a variety of devices. Applications are centralized on Azure but they appear as if they are running on end users' devices.

App Services– Media Services

Encoding

- **Azure Media Services** offer cloud-based media solutions from many existing technologies from the Microsoft Media Platform and from media partners, including ingest, encoding, format conversion, content protection and both on-demand and live streaming capabilities.

- **Media Services Encoding** is charged based on the amount of data processed and whether Encoding Reserved Units to process parallel media tasks is chosen.

- Media Services Encoding and Reserved Units both have unique SKUs.

On-Demand Streaming

- **On-demand streaming** is charged based on the number of Reserved Units used. Reserved Unit provides bandwidth up to 200 Mbps per Reserved Unit along with built-in failover. It has a unique SKU.

- In addition, any outbound data transfers are charged separately at the regular Data Transfer rate.

For current Media Services pricing: http://azure.microsoft.com/en-us/pricing/details/media-services/

For more information about Media Services: http://azure.microsoft.com/en-us/services/media-services/

App Services – Service Bus

Service Bus – Overview & SKU Details

Queues and Topics

- **Queues**: offers simple first in, first out guaranteed message delivery.
- **Topics**: delivers messages to multiple subscriptions and easily fans out message delivery at scale to downstream systems.
- Messages exceeding 64KB in size will result in an additional message being charged for every 64KB in message. Billable messages include any "no message available" replies from Service Bus in response to receive requests made against empty queues/subscriptions.
- Pricing is based on number of messages.
- Queues and Topics is a single SKU for the service.

Relay

- **Relay**: allows on premise web services to project public endpoints.
- Relay hours start when the first listener connects to a given relay address and end when the last listener disconnects from that address, and are rounded up to the next clock hour. As with queues/topics, messages greater than 64KB in size will generate additional billable messages per 64KB of additional content.
- Relay is a single SKU for the service.

For current Service Bus pricing: http://azure.microsoft.com/en-us/pricing/details/service-bus/

For more information about Service Bus: http://azure.microsoft.com/en-us/services/service-bus/

App Services – Notification

Notification – Overview & SKU Details

- **Azure Notification Hubs** provides a highly scalable, cross-platform push notification infrastructure that enables you to either broadcast push notifications to millions of users at once or tailor notifications to individual users. Notification Hubs can be used with any connected mobile application.

- Notification Hub is offered in three tiers: **Free**, **Basic**, and **Standard**, each with a unique SKU.

For current Notification Hub pricing: http://azure.microsoft.com/en-us/pricing/details/notification-hubs/

For more information about Notification Hub: http://azure.microsoft.com/en-us/services/notification-hubs/

App Services – Scheduler

Scheduler – Overview & SKU Details

- **Azure Scheduler** allows you to invoke actions - such as calling HTTP/S endpoints or posting a message to a storage queue - on any schedule. Create jobs in the cloud that reliably call services both inside and outside of Azure and run those jobs on demand, on a regularly recurring schedule or designate them for a future date.

- Scheduler is currently available in two tiers, **Free** and **Standard**, with a single unique SKU.

For current Scheduler pricing: http://azure.microsoft.com/en-us/pricing/details/scheduler/

For more information about Scheduler: http://azure.microsoft.com/en-us/services/scheduler/

App Services – Automation

Automation – Overview & SKU Details

- **Azure Automation** allows for the automatic creation, deployment, monitoring, and maintenance of resources in the Azure environment using a highly scalable and reliable workflow execution engine. The service can be used to orchestrate time-consuming and frequently repeated tasks that would otherwise be accomplish manually across Azure and third-party systems to decrease operational expense for cloud operations.

- Automation is available in two tiers, **Free** and **Standard**, with a separate SKU for each.

For current Automation pricing: http://azure.microsoft.com/en-us/pricing/details/automation/

For more information about Automation: http://azure.microsoft.com/en-us/services/automation/

App Services – Biz Talk Services

Biz Talk Services – Overview & SKU Details

- **Azure BizTalk Services** is a simple, powerful, and extensible cloud-based integration service that provides Business-to-Business (B2B) and Enterprise Application Integration (EAI) capabilities for delivering cloud and hybrid integration solutions. As an "integration platform as a service", BizTalk Services delivers robust, scalable integration capabilities all managed by Microsoft, saving the need to install, configure, and maintain the infrastructure.

- BizTalk Services is offered in multiple tiers: **Free (Preview), Developer, Basic, Standard,** and **Premium**, each with a unique SKU.

- BizTalk Services provides out-of-the box, cloud to on-premises, and line-of-business application integration for SAP, Oracle EBS, SQL Server, and PeopleSoft. It allows for connection with any HTTP, FTP, SFTP, or REST data sources.

- Azure BizTalk Hybrid Connections enables connection from Azure Web Sites or Azure Mobile Services to any on-premises TCP or HTTP with just a few configuration changes and without using any custom code.

For current Biz Talk Services pricing: http://azure.microsoft.com/en-us/pricing/details/biztalk-services/

For more information about Biz Talk: http://azure.microsoft.com/en-us/services/biztalk-services/

App Services – Visual Studio Online

Visual Studio Online – User Plans – Overview & SKU Details

- Within a **Visual Studio Online** account, simply pay for user plans for the users who join the account and for resources that are shared amongst all users on the account.
- Three user plans are offered directly as part of Visual Studio Online, each with a unique SKU: Basic, Professional, and Advanced.
- Additionally, MSDN subscribers have access to Visual Studio Online at no additional charge as a subscription benefit. MSDN subscriptions are purchased separately from Azure services.

- **Visual Studio Online Basic** - Includes access to code repositories, planning and tracking tools, team collaboration capabilities, and the Visual Studio Express development environment. The first five users per account with the Basic plan are free.
- **Visual Studio Online Professional** - Includes all of the capabilities available in the Basic plan, plus it also includes use of the Visual Studio Professional development environment. Up to 10 users with the Visual Studio Online Professional plan may be purchased on an account.
- **Visual Studio Online Advanced** - Includes all of the capabilities available in the Basic plan, as well as advanced team collaboration, project planning and tracking tools, and stakeholder feedback requests.

App Services – Visual Studio Online

Visual Studio Online – Shared Resources – Overview & SKU Details

- A **Visual Studio Online** account includes resources that are shared across all users and projects on that account.

- **Build** - Build definitions can be created using Visual Studio and can be run on Visual Studio Online. Builds can be configured to run on demand, at a specified interval, or for continuous integration (CI). Build is charged per minute for the actual amount of computing time it takes to build the project. Build has a unique SKU.

- **Load Testing** - Create load tests in Visual Studio Ultimate 2013 (or later) and run them on Visual Studio Online. Load tests are measured and billed in virtual user minutes: the number of virtual users times the number of minutes that are configured for the load test run. Load testing has a unique SKU.

For current Visual Studio Online pricing: http://azure.microsoft.com/en-us/pricing/details/visual-studio-online/

For more information about Visual Studio Online: http://azure.microsoft.com/en-us/services/visual-studio-online/

App Services – Active Directory

Active Directory – Overview & SKU Details

- Azure Active Directory is offered in two tiers: **Free** and **Premium**, each with their own unique SKU.

- Both the **Free** and **Premium** tier include a comprehensive and highly available identity and access management cloud solution; combine core directory services, advanced identity governance, and application access management.

- Both tiers also offer a rich standards-based platform that enables developers to deliver access control to their applications, based on centralized policy and rules.

- **Azure Active Directory Premium** allows IT departments to effectively protect enterprise data and resources on any cloud with features such as synchronization with on-premises directories, group-based single sign-on to hundreds of SaaS applications, machine learning-based security and usage reports, alerting and **Multi-Factor Authentication.**

- Azure Active Directory Premium also empowers end users with self-service password reset, delegated group management and customizable environment for launching enterprise and consumer applications.

For current Active Directory pricing: http://azure.microsoft.com/en-us/pricing/details/active-directory/

For more information about Active Directory: http://azure.microsoft.com/en-us/services/active-directory/

App Services – Multi-Factor Authentication

Multi-Factor Authentication – Overview & SKU Details

- **Azure Multi-Factor Authentication** is a service that helps secure access to on-premises and cloud applications by providing an additional layer of authentication. It supports authentication through mobile app, phone call or text message.

- Azure Multi-Factor Authentication is available under two billing options, each with a unique SKU: **per user** and **per authentication**. Both options provide the same set of service features such as advanced configuration and reporting.

For current Multi-Factor Authentication pricing: http://azure.microsoft.com/en-us/pricing/details/multi-factor-authentication/

For more information about Multi-Factor Authentication: http://azure.microsoft.com/en-us/services/multi-factor-authentication/

App Services – Content Delivery Network

Content Delivery Network (CDN) – Overview & SKU Details

- **Azure CDN** improves performance of your applications by caching content at locations closest to your customers.
- Outbound data transfers are separated into SKUs by zone. Prices vary by amount of data transferred.
- The CDN price does not include the data transfer charge from any other Azure service to Azure CDN.

For current CDN Pricing: http://azure.microsoft.com/en-us/pricing/details/cdn/

For more information about CDN: http://msdn.microsoft.com/library/azure/ee795176.aspx

App Services – API Management

API Management – Overview & SKU Details

- **Azure API Management** allows organizations to publish APIs more securely, reliably, and at scale. Use API Management to drive API consumption among internal teams, partners and developers while benefiting from business and operational insights available in the admin portal. This service helps provide the tools organizations needs for end-to-end API management—everything from provisioning user roles, creating usage plans and quotas, applying policies for transforming payloads, throttling, analytics, monitoring and alerts.

- API Management is For currently in preview and is offered in two tiers: **Developer** and **Standard** (2 SKUs).

- **Developer**
  - API Calls -166 K / Day
  - Data Transfer – 850 MB / Day
  - Cache – 10 MB
  - Scale Out – N/A
- **Standard**
  - API Calls - 6.6 M / day
  - Data Transfer – 35 GB / Day
  - Cache – 1 GB
  - Scale Out – 4 Units

For current API Management pricing: http://azure.microsoft.com/en-us/pricing/details/api-management/

For more information about API Management: http://azure.microsoft.com/en-us/pricing/details/api-management/

App Services – Azure RemoteApp

Azure Remote App (Preview) – Overview & SKU Details

- **Azure RemoteApp** delivers Windows Server-based applications from Azure. Users can access their applications remotely from virtually anywhere, at any time, and on a variety of devices. Applications are centralized on Azure but they appear as if they are running on end users' devices.

- Azure RemoteApp is currently in preview and is free during the preview period.

- **Azure RemoteApp** brings scale, agility and global access to your corporate applications. With Azure RemoteApp you can:

- Enable users to access corporate applications from virtually anywhere, at any time, and on a variety of devices

- Scale up or down to meet dynamic business needs without large capital investment

- Centralize and help protect corporate applications on Microsoft Azure's trusted and reliable platform

- Azure RemoteApp brings Windows applications and Microsoft's powerful remote desktop capabilities together on Azure – the cloud for modern business.

For current Azure RemoteApp pricing: http://azure.microsoft.com/en-us/pricing/details/remoteapp/

For more information about Azure RemoteApp: http://azure.microsoft.com/en-us/services/remoteapp/

Microsoft Azure: Network Services

Network Services

ExpressRoute enables private connections to be created between Azure datacenters and infrastructure that's on-premises or in a co-location environment. ExpressRoute connections do not go over the public Internet, and offer more reliability, faster speeds, lower latencies and higher security than typical connections over the Internet.

Virtual Network (VNET) enables Virtual Private Networks (VPN) to be created within Azure and securely link with on-premises IT infrastructure.

Traffic Manager allows for the ability to load balance incoming traffic across multiple hosted Azure services whether they're running in the same datacenter or across different datacenters around the world.

Data Transfers refer to data moving in and out of Azure data centers other than those explicitly covered by the Content Delivery Network or ExpressRoute pricing.

Network Services – Express Route

Express Route – Overview & SKU Details

Exchange Providers

- **ExpressRoute** via an Exchange Provider is charged based on a monthly dual-port fee, and is separated into SKUs by port speed.
- All inbound data transfer is free of charge, and some outbound data transfer is provided free of charge.

Network Service Providers

- **ExpressRoute** via a Network Service Provider is charged based on a monthly dual-port fee, and all inbound and outbound data transfer are included free of charge.
- Network Service Providers are priced with unique SKUs according to port speed.

For current ExpressRoute prices: http://azure.microsoft.com/en-us/pricing/details/expressroute/

For more information about Express Route: http://azure.microsoft.com/en-us/services/expressroute/

Network Services – Virtual Network

Virtual Network – Overview & SKU Details

- **Azure Virtual Network (VNET)** enables the creation of a Virtual Private Networks (VPN) within Azure and securely link with on-premises IT infrastructure.

- Setting up a VNET is free of charge. However, there is a charge for the VPN gateway that connects to on-premises. This charge is based on the amount of time that gateway is provisioned and available.

For current Virtual Network pricing: http://azure.microsoft.com/en-us/pricing/details/virtual-network/

For more information about Virtual Network: http://azure.microsoft.com/en-us/services/virtual-network/

Network Services – Traffic Manager

Traffic Manager – Overview & SKU Details

- **Azure Traffic Manager** allows for the ability to load balance incoming traffic across multiple hosted Azure services whether they're running in the same datacenter or across different datacenters around the world.

- Traffic Manager is priced according to **queries** and **endpoint**, each with a unique SKU.

For current Traffic Manager pricing: http://azure.microsoft.com/en-us/pricing/details/traffic-manager/

For more information about Traffic Manager: http://azure.microsoft.com/en-us/services/traffic-manager/

Network Services – Data Transfers

Data Transfers – Overview & SKU Details

- **Data Transfers** refer to data moving in and out of Azure data centers other than those explicitly covered by the Content Delivery Network or ExpressRoute pricing.
- Inbound data transfers to Azure are free.
- Outbound data transfers (i.e. data going out of Azure data centers) is based on volume.

For current Data Transfers pricing: http://azure.microsoft.com/en-us/pricing/details/data-transfers/

Summary & Resources

External Resources

1 Microsoft Azure Trust Center
http://azure.microsoft.com/en-us/support/trust-center/

2 Microsoft Azure Agreement and Terms
http://azure.microsoft.com/en-us/support/legal/services-terms/
Microsoft Online Service Terms
http://www.microsoftvolumelicensing.com/DocumentSearch.aspx?Mode=3&DocumentTypeId=31

3 Microsoft Azure Service Level Agreements
http://azure.microsoft.com/en-us/support/legal/sla/

4 Microsoft Azure Support Requests
http://azure.microsoft.com/en-us/support/options/
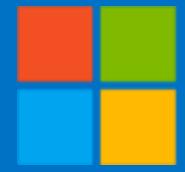
Appendix

The Server & Cloud Enrollment (SCE)

Choose **one or more** of the available components…

Core Infrastructure

Products
CIS SKUs (Windows Server + System Center)

Requirements
CIS coverage for all Windows Servers

Application Platform

Products
SQL Server
Optionally Available: SharePoint Server & BizTalk Server

Requirements
Full SA coverage

Developer Platform

Products
Visual Studio Ultimate and Premium

Requirements
Full SA coverage

Windows Azure

Products
All Windows Azure Cloud Services

Available Automatically
Can also be licensed standalone

+Access to Windows Azure

Building Your SCE

Options and minimum requirements for covering your SCE commitment

Core Infrastructure

Products

CIS Datacenter
CIS Standard
CIS Datacenter w/o Windows Server
CIS Datacenter w/o System Center
CIS Standard w/o Windows Server
CIS Standard w/o System Center

All licensed Windows Server deployments must be covered with one of the above SKUs

Minimum Order Requirements

50 processors via 25 licenses (each license covers up to 2 physical processors) of one or a combination of CIS Standard or Datacenter

Application Platform

Products

SQL Server CAL
SQL Server Enterprise Per Core
SQL Server Business Intelligence Server
SQL Server Standard Per Core
SQL Server Standard Server

SQL Server Parallel Data Warehouse Per Core

BizTalk Server Enterprise Per Core
BizTalk Server Standard Per Core
BizTalk Server Branch Per Core
SharePoint Server

Minimum Order Requirements

SQL Server: 50 SQL Server per Core or 5 SQL Server per Server with 250 CALs
SQL Server PDW: 32 Cores
BizTalk: 24 Cores of any edition
SharePoint Server: 5 Servers

Developer Platform

Products

Visual Studio Ultimate
Visual Studio Premium
Visual Studio Test Professional
Visual Studio Team Foundation Server CAL
MSDN Platforms
Visual Studio Deployment Standard
Visual Studio Deployment Datacenter

Minimum Order Requirements

20 Licenses of any combination of Visual Studio Ultimate and Visual Studio Premium

Windows Azure

Products

All Windows Azure Cloud Services

Minimum Order Requirements

or can be licensed standalone