

Microsoft Corporation

Microsoft Azure Handbook



Microsoft Azure Handbook

This guide has been developed for Microsoft Azure customers who are developing applications and services on the Azure Cloud platform. The content has been driven by frequently asked questions from customers and partners.

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1. Microsoft Azure Overview

Azure is Microsoft's cloud platform: a growing collection of integrated services—compute, storage, data, networking, and app—that help you move faster, do more, and save money. But that's just scratching the surface. Here's what else Azure is:

- <http://azure.microsoft.com/en-in/overview/what-is-azure/>

WHAT IS AZURE?

- **A cloud platform with choice** – Microsoft Azure is the only major cloud platform that offers Infrastructure as a Service & Platform as a Service and is Hybrid-ready, to suit the needs of you and your customers.
- **Always up, Always on** - Microsoft Azure delivers a 99.95% monthly [SLA](#) and enables you to build and run highly available applications without focusing on the infrastructure.
 - [Service Level Agreement](#)
 - [Managing availability of Virtual Machine](#)
- **Open** -Microsoft Azure enables you to use any language, framework, or tool to build applications. Features and services are exposed using open REST protocols.
- **Unlimited servers. Unlimited storage** - Microsoft Azure enables you to easily scale your applications to any size. It is a fully automated self-service platform that allows you to provision resources within minutes.
- **Market Leading solution** - With better price for performance than Amazon EC2, better interoperability with Microsoft Apps, and end-to-end support for Oracle, it's no surprise over 57% of Fortune 500 companies are using Microsoft Azure.
- **Powerful Capabilities** - Microsoft Azure delivers a flexible cloud platform that can satisfy any application need:
- **See it in Action:**

WHAT CAN YOU DO WITH IT?

- **Develop modern applications** - Build and deploy a wide variety of modern applications for Android, iOS, and Windows that take full advantage of the cloud—including web, mobile, media and line-of-business solutions. Automatically scale up and down to meet any need.
- **Build Infrastructure** - Provision Windows and Linux Virtual Machines and applications in minutes. Use the same virtual machines and management tools in Azure that you use on-premises
- **Gain Insights from data** - Azure provides managed SQL and NoSQL data services and built-in support for gaining insights from your data. Leverage the full power of SQL Server in the cloud and use HDInsight to build Hadoop clusters to analyze data
- **Manage Identity and Access** - Manage user accounts, synchronize with existing on-premises directories, and get single sign on across Azure, Office 365 and hundreds of popular software-as-a-service applications including Salesforce, DocuSign, Google Apps, Box, Dropbox, and more.
- **Build Hybrid Applications** – Azure's enterprise-proven hybrid cloud solutions give you the best of both your datacenter and the public cloud, expanding your IT options without added complexity. With Azure, data storage, backup and recovery become more efficient and economical. It is also easier to build applications that span both on-premises and the cloud.

HOW DO WE COMPARE WITH OUR COMPETITORS?

- Azure is the only major cloud platform ranked by Gartner as an industry leader for both infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS). This powerful combination of managed and unmanaged services lets you build, deploy, and manage applications any way you like for unmatched productivity.
 - [Why are customers picking Azure vs Amazon?](#)
 - [Magic Quadrant for Infrastructure as a Service \(IaaS\) - Gartner](#)
 - [Magic Quadrant for Enterprise Application Platform as a Service \(PaaS\) – Gartner](#)
 - [Magic Quadrant for Public Cloud Storage – Gartner](#)
 - [Magic Quadrant for Operational Data Management Systems - Gartner](#)
 - [Who is protecting your Data from Government Requests – Electronic Frontier Foundation](#)
 - [A Comparative Analysis of 5 Large Cloud IaaS Providers – Cloud Spectator Study](#)
 - [Forrester names Microsoft as a Leader in Agile Business Intelligence](#)
 - [Microsoft By Numbers](#)

WHAT ARE THE CORE SERVICES ON AZURE?

- <http://azure.microsoft.com/en-in/services/>

Microsoft Azure	
Compute	<ul style="list-style-type: none"> • Virtual Machines (IaaS) – provision Windows and Linux VMs • Cloud Services (PaaS) – create highly available, infinite scalable cloud applications and APIs • Scheduler - invoke & schedule actions/jobs - such as calling HTTP/S endpoints or posting a message to storage queues • Batch – Run large-scale parallel and batch compute jobs • RemoteApp – Deploy Windows client apps in the cloud, run on any device
Web & Mobile	<ul style="list-style-type: none"> • Web Sites – develop, deployment & scale web apps • Mobile Services - scalable & secure backend for your mobile apps • Notification Hubs - easily route cross-platform, personalized push notification messages to millions of users simultaneously, and scale automatically without needing to rearchitect your app • API Management - Publish APIs to developers, partners and employees securely and at scale
Data Services	<ul style="list-style-type: none"> • Storage – Blobs, Tables, Queues & Files Storage - store large amounts of unstructured text/binary data such as video/image & audio. • SQL Database - For applications that need a full featured relational database-as-a-service • DocumentDB – fully managed NoSQL document database that offers query and transactions over schema free data • Cache - High throughput, low latency data access for your application to build fast, scalable cloud applications • Azure Redis Cache - Based on the popular open source Redis Cache, this gives you access to a secure, dedicated Redis cache for your Azure applications. • Azure Search – “Search as a Service” for web and mobile applications without the typical complexities of full-text search
Analytics	<ul style="list-style-type: none"> • HDInsight - Microsoft’s Hadoop-based service for gaining insight from any data, size or location • Machine Learning – Powerful cloud-based predictive analytics • Stream Analytics – Real-time stream processing in the cloud • Data Factory – orchestrate and manage data transformation and movement • Event Hubs – Ingest, persist, and process millions of events/telemetry per second from websites, apps and devices
Storage & Back up	<ul style="list-style-type: none"> • Storage – Blobs, Tables, Queues & Files Storage - store large amounts of unstructured text/binary data such as video/image & audio. • Backup - Automated server backups – stored securely in the cloud • Site Recovery – Orchestrate the protection and recovery of your applications for simplified disaster recovery • StorSimple - A unique hybrid cloud storage solution that lowers costs and improves data protection
Networking	<ul style="list-style-type: none"> • Virtual Networks – provision private networks (a logically isolated section in Azure) and securely connect it to your on-premises resources

	<ul style="list-style-type: none"> • ExpressRoute – Experience fast, dedicated, private connections • Traffic Manager- Traffic Manager allows you to load balance incoming traffic across multiple hosted Microsoft Azure services
Media & CDN	<ul style="list-style-type: none"> • Media Services- Create end-to-end media workflows with flexible and highly scalable encoding, packaging, and distribution services • CDN - delivering content to end-users through a robust network of global data centres
Hybrid Integration	<ul style="list-style-type: none"> • BizTalk Services- Integrate the Enterprise and the Cloud • Service Bus- provides the messaging channel for connecting your cloud apps to your on-premises apps • Backup - Automated server backups – stored securely in the cloud • Site Recovery– Orchestrate the protection and recovery of your applications for simplified disaster recovery
Identity & Access	<ul style="list-style-type: none"> • Active Directory- Secure, enterprise ready identity and access management for the cloud. Synchronise on-premise directories and enable single sign-on • Multi-Factor Authentication- safeguards data/application access while addressing demand for a simple sign-in process
Developer Services	<ul style="list-style-type: none"> • Visual Studio Online- Host code, plan and track projects, and collaborate with team members to ship better software • Application Insights - Detect issues, solve problems and continuously improve your web applications
Operations & Management	<ul style="list-style-type: none"> • Autoscale- configure applications to automatically scale up or down to accommodate current demand, and use auto-scaling rules to minimize costs. (Virtual Machines, Cloud Services, Web Sites, and Mobile Services). • Automation – automate the manual, long-running, error-prone, and frequently repeated tasks that are commonly performed in a cloud environment. (From the System centre team) • Key Vault - Safeguard cryptographic keys and other secrets used by cloud apps and services • Event Hubs – Cloud scale telemetry ingestion from web sites, apps and devices • Operational Insights - an operations management and intelligence service that integrates across System Center with the power of Azure and HDInsight to analyze machine data across environments, enabling actionable insights and better decisions
Marketplace	<ul style="list-style-type: none"> • Microsoft Azure Marketplace - Search and deploy thousands of solutions to simplify the development and management of applications on Azure.

Microsoft Azure Roadmap – Keep up to date:

- Read the [Microsoft Azure Blog](#)
- Sign up for the [Microsoft Azure Newsletter](#)
- Read the [Scott Guthrie's Blog](#)
- Read the [Cloud & Enterprise Blog](#)
- Stay in touch with ALL [Azure service updates](#)
- Provide direct feedback for new features @ [Microsoft Azure feedback](#)
- Request to be part of the [Microsoft Azure Advisory Council](#)

AZURE DEPLOYMENT OPTIONS

- Microsoft provides you with a choice of deployments - PaaS (more managed), IaaS (less managed), and Hybrid deployments. These are discussed in detail in section 4. But in Summary:

	On Premise		Infrastructure (as a Service)		Platform (as a Service)
YOU <i>scale, make resilient and manage</i>	Applications	YOU <i>scale, make resilient, & manage</i>	Applications	YOU <i>Manage</i>	Applications
	Data		Data		Data
	Runtime		Runtime		Runtime
	Middleware		Middleware		Middleware
	O/S	MICROSOF T <i>Managed by vendor</i>	O/S	MICROS OFT <i>Scale, resilienc e and manage ment by vendor</i>	O/S
	Virtualization		Virtualization		Virtualization
	Servers		Servers		Servers
	Storage		Storage		Storage
Networking		Networking		Networking	



AZURE DATACENTRES - “Powering the Microsoft Cloud”

- Global Foundation Services (GFS) – delivers the core infrastructure for Microsoft’s online businesses, and manages, monitors and administers Bing, Hotmail, MSN, Office 365, Xbox Live and Azure, serving 1bn customers, 20m businesses, in 76 markets.
 - <http://www.globalfoundationservices.com/>
- For Microsoft Azure there are 19 Datacentres across 3 continents (growing significantly in 2014 – see table below), which all comply with key industry standards, such as ISO/IEC 27001:2005, for security and reliability.
- Take a tour of the Datacentres:
 - [Long Tour](#),
- To find out your closest Data centre, use the following tool:
 - <http://azurespeedtest.azurewebsites.net/>
- Microsoft Data Centre IP Ranges:
 - <http://www.microsoft.com/en-in/download/details.aspx?id=41653>
- A list of the Microsoft Datacentres are below:
 - [Microsoft Datacentres by Region](#)
 - [Microsoft India Datacentres announcement](#)
 - [Services available by Data centre](#)

Europe	<ul style="list-style-type: none"> • North Europe - Dublin • West Europe - Amsterdam
Asia	<ul style="list-style-type: none"> • South East Asia - Singapore • East Asia - Hong Kong
India	<ul style="list-style-type: none"> • 2015?
United States	<ul style="list-style-type: none"> • North Central US) – Illinois, Chicago • South Central US – San Antonio, Texas • West US – California (Limited DC’s (Compute/Storage)) • East - Virginia (Limited DC’s (Compute/Storage))
Japan	<ul style="list-style-type: none"> • Japan East - Tokyo • Japan West - Kansai
China	<ul style="list-style-type: none"> • Beijing (via 21Vianet) - REQUIRES Local enrolment
Oceania (Late 2014)	<ul style="list-style-type: none"> • Sydney, New South Wales - REQUIRES Local enrolment • Melbourne, Victoria - REQUIRES Local enrolment
South America	<ul style="list-style-type: none"> • Brazil South

AZURE IS OPEN

- Microsoft Azure enables you to use any language, framework, or tool to build applications. Features and services are exposed using open REST protocols.

	MS Integrated	Ecosystem Provided
Languages, Dev Tools & App Containers	Docker, Visual Studio Online, .net, php, python, node.js, Java, Azul	Ruby, Jenkins, BYO
CMS & Apps	WordPress, Drupal, Joomla!	Dozens of .net, PHP CMS and web applications
Devices	Android, Windows, Apple,	Xamarin, Apache Cordova (
Databases	SQL Server, Hadoop, Redis	ClearDB, MySQL, MongoDB, DocDB, DataStax
Management	Chef, Puppet	Ansible, Saltstack
Operating Systems	Windows, Linux, Ubuntu, SUSE, OpenSUSE, OpenLogic, CentOS-based, Oracle Linux, CoreOS	VMDepot, FreeBSD, byo

2. Getting Started with Microsoft Azure

FREE Trial of Microsoft Azure

- <http://azure.microsoft.com/en-in/pricing/free-trial/>
- This provides 1 month free subscription limited to ₹12,100

Key portals for Getting started on Microsoft Azure:

Account Centre	Track your usage & manage your subscription – click on "Account" section.	https://account.windowsazure.com/
Management Portal	Use the management portal to configure and control (deploy and host) your Microsoft Azure services and applications- click the "Manage" button	https://manage.windowsazure.com/
Preview Portal	The first-of-its-kind Microsoft Azure Preview portal is bringing together cross-platform tools, technologies, and services in a single integrated workspace to radically speed up the delivery process and make it much simpler to keep applications in good shape—using what you already know and whatever tool set you like most.	http://azure.microsoft.com/en-in/overview/preview-portal/
Documentation Centre	Documentation to support Build solutions with any language or development platform, OR Target any browser, client or Device, OR Run on Windows or Linux.	http://azure.microsoft.com/en-in/documentation/
EA Portal (Azure Enterprise customers only)	To view and create your enterprise level accounts, subscriptions, pricing, monetary commitment and overage balances	https://ea.azure.com/

Getting Started – A walk through

- There is a nice simple video walkthrough here (ignore the discussion around the Prime challenge – this was a recent research experiment we were running):
 - [Signing Up](#) -
 - [Starting Up a Service](#) (first half)

1. Go to the **Microsoft Azure Free Trial** page and click on [Try it now](#):
 - <http://azure.microsoft.com/en-in/pricing/free-trial/>
2. Sign in with your **Microsoft Account** (Outlook.com, MSN, Hotmail, Live.com)
 - *If you don't have a Microsoft Account you can sign up for a NEW Account [here](#)*
3. This will provide you access to the **Microsoft Azure Account centre**:
 - *This is where you can Track your usage & manage your subscription*
 - If this is the first time you have accessed the Account Centre, you will need to complete some basic information, credit card information and verify your account (you will be sent a mobile text message code),
 - You can add further subscriptions here, e.g. A Credit card based one
4. Click on "Portal" to enter the **Microsoft Azure management portal**
 - *Use the management portal to configure and control (deploy and host) your Microsoft Azure services and applications*
 - At the top of the page it will show your Azure FREE Credit status
 - If you click on your Account name at the top right hand side you can "View your bill"
 - If you click on any of the Azure services on the Left hand side, you can create, configure, and deploy of each individual service (Name, Size, Deployment location, Deployment options).
 - If you are creating a new VM ([See Guidance here](#)) you have a couple of options, you can:
 - create your own image,
 - browse [VM Depot](#)
 - Select one from the VM Gallery.
 - You will need to create a storage account first to store the VM Image (you will also need to register your own VM image so that it appears in your portal under "My Images").
 - Each Cloud service will be given a service URL or DNS Name "xxxxxxx.cloudapp.net"

5. Managing Accounts, Subscriptions and Admin roles

- Some basic principles:
 - <http://msdn.microsoft.com/library/azure/hh531793.aspx>
 - **Microsoft Azure account** - determines how Microsoft Azure usage is reported and who the Account Administrators
 - **Subscriptions** - help you organise access to cloud service resources (reporting, bills, payments), and each subscription can have different billing and payment setup
 - **Account administrator** - (1 per Account) is the person who created the account, and they have access to all subscriptions. Authorized to access the Account Center (create subscriptions, cancel subscriptions, change billing for a subscription, change Service Administrator, and more)
 - **Service administrator** - (1 per subscription) can perform all functions within a subscription including add/remove Co-Administrators. By default the Service Administrator will be the same as the Account Owner. Authorized to access Azure Management Portal for all subscriptions in the account. By default, same as the Account Administrator when a subscription is created.
 - **Co-administrator** - (200 per subscription) –can perform all functions within a subscription except change the Service Administrator and add/remove other co-administrators. Same as Service Administrator, but can't change the association of subscriptions to Azure directories.
 - Real world worth a [read](#)

6. Understanding your usage, billing and Notifications:

- **Review you Invoice (for PAYG):**
 - Login in to <https://account.windowsazure.com> using your Live ID.
 - Click on the "Account" tab.
 - Click on the "Subscriptions" tab.
 - Select the subscription for which you want to download the invoice.
 - Click on "Billing History".
 - Here you will find the invoices based on the billing cycle.
- **Change from "Credit Card" to "Pay by Invoice" (for PAYG)**
 - <http://azure.microsoft.com/en-in/pricing/invoicing/>
- **Understanding your Bill (for PAYG):**
 - Guidance to help you View your bill, understand your balance, understand charges and download usage
 - <http://azure.microsoft.com/en-in/support/understand-your-bill/>
 - <http://azure.microsoft.com/en-in/pricing/faq/virtual-machines-how-do-instance-sizes-get-billed/>

- **Setting up Billing Notifications (for PAYG):**
 - Login to the following website using account administrator's credentials
 - <https://account.windowsazure.com>
 - Click the "Profile" tab.
 - Click "Edit details."
 - Enter the new email ID under the "Email" field.
 - Click "next" to save the changes
- **Where do I find my Usage data on the Azure PAYG Service:**
 - Go to <https://account.windowsazure.com/Subscriptions/>
 - Sign in with your Microsoft Account (Live ID)
 - Under the "Subscriptions" menu screen, select "download usage detail" on the right hand side menu
 - Click on "Download Usage" for the period you would like to review

3. Initial Education, Training & Assistance

Azure Events

- [Azure Vidyapeeth](#) – Azure webinars series
- [Azure Events](#) – Azure India Events schedule
- [Global Azure BootCamp](#)
- [Microsoft India Events Schedule](#)
- [MSDN Events](#) – MSDN Events schedule
- [Developer Technical Communities](#) – Events run by the developer community
- [WW Azure Developer Camps](#) – Worldwide Azure Developer Camps listing

Online Azure Education

- [Microsoft Azure Training Kit](#) - technical content to help you learn how to use Microsoft Azure.
- [Microsoft Virtual Academy](#) – Free online training on Microsoft Azure
- [Microsoft Azure IaaS Technical Fundamentals](#)
- [Microsoft Azure on Channel 9](#) – Channel 9 video content targeting Azure
- [Microsoft Azure Friday](#) - Scott Hanselman's Azure Friday learning session
- [Microsoft Azure "You Tube" channel](#)
- [Microsoft Azure Exam](#)- Developing Microsoft Azure solutions

General Microsoft technical resources to get you up and running:

- [TechNet Virtual Labs](#) - Virtual environments for testing Microsoft's newest products and technologies
- [MSDN Virtual Labs](#) - quickly evaluate and test Microsoft's newest products and technologies through a series of guided, hands-on labs
- [Partner Technical Services](#) – Advisory Services for Microsoft Partners
- [Microsoft Developer Portal](#) - central place for all developers interested in Microsoft platforms
- [Microsoft Azure \(IaaS\) Cost Estimator Tool](#)– Understand on premise Existing Infra vs. Run on Azure
- [Azure Storage Explorer](#)– Free Azure Storage Explorer tool
- [Service Bus Explorer](#) – Free Service Bus Explorer tool
- [Azure India Case Studies](#)
- [Open Source Success Stories on Azure](#)

Tailored Microsoft technical resources to get you up and running:

- [Microsoft Technology Centre](#) – Access the latest technology and Microsoft specialists on a 1:1 basis
- [Architecture Design Session \(ADS\)](#) - We'll provide architectural guidance, consultation on preferred practices, and risk analysis to chief technology officers, architects, and senior members of your development team
- [Proof of Concept \(PoC\)](#) - Our architects work closely with key members of your technical staff to transfer knowledge and prove out customized solutions
- [Microsoft Services Premier Support for Microsoft Azure](#)– For companies who want to build business critical, cost effective, robust applications quickly contact Microsoft Services Premier Support for Microsoft Azure
- [Microsoft Azure Partners](#)
- [Microsoft Azure Cloud Design Patterns](#) for Architects

Microsoft Partner Advisory Hours

- For Gold and Silver Partners in Microsoft Partner Network, you allocated a set amount of hours to use Partner Advisory hours. This allocation can be used for “How to” consultative type questions associated with the deployment of Microsoft Azure. NB. They cannot assist with trouble shooting a specific implementation. For full details see [here](#).
- Further details:
 - Web: <https://mspartner.microsoft.com/en/in/Pages/Support/partner-advisory-hours.aspx>
 - Email: askpts@microsoft.com

Useful Azure Articles from Azure MVPs

- [Azure Automation - shutdown azure virtual machine – step by step](#)
- [Upload large files to Azure block blob storage in parallel and Async using C#](#)
- [Performance load balancing using Azure Traffic Manager – step by step guide](#)
- [Multiple web applications in single cloud service web role with multiple SSL certificates and custom domains over https using Server Name Indication](#)
- [Session management using SQL Azure and Update on automatic session clearance](#)

4. Microsoft Azure Technical Documentation

Azure Technical Resources

- [Microsoft Azure Documentation Centre](#)
 - **Azure Services** documentation
 - **Developer centres** for .net, Java, PHP, Python, Ruby, Mobile, Media
 - **Resources** to allow you to build and deploy Azure services
- [Microsoft Azure Server Software Support for Azure VMs](#) - the support policy for running Microsoft server software in the Microsoft Azure Virtual Machine environment (infrastructure-as-a-service)
- [Microsoft Azure Training Kit](#) - technical content to help you learn how to use Microsoft Azure.
- [Microsoft Azure Execution Models](#) – IaaS, PaaS or Websites execution models and deciding which model to use
- [Microsoft Patterns and Practices](#) – Microsoft Azure Guidance site (Greenfield, Brownfield and Hybrid scenario's)
- [Microsoft Azure for the IT Pro](#) – A useful guide for the IT Pro
- [Powershell](#) - is Microsoft's task automation and configuration management framework, consisting of a command-lineshell and associated scripting language built on .NET Framework

Access to Developer Tools, Microsoft Software and Code

- [Azure Download Centre](#) - Get the command-line tools and SDKs
- [Microsoft Azure Script Centre](#) - Microsoft Azure enables you to script and automate virtually everything using Windows PowerShell or the cross platform command line tools, which can be used from Windows, Mac, or Linux
- [MSDN Subscriptions](#) - Subscribers can use Microsoft software to design, develop, test, and demonstrate your apps on as many devices as you need (See section 5 for further details)
- [Microsoft Software Evaluation Centre](#) - Access Software for Evaluation and Trial
- [VM Depot](#) - community-driven catalogue of preconfigured OS's, apps, and development stacks that can easily be deployed on Azure
- [GitHub](#) - collaboration, review, and code management for open source and private development projects
- [Microsoft Azure Pack](#) - The Microsoft Azure Pack delivers Microsoft Azure technologies for you to run inside your datacenter. Offer rich, self-service, multi-tenant services and experiences that are consistent with Microsoft's public cloud offering
- [Microsoft Assessment and Planning Toolkit \(MAP\)](#) - MAP provides detailed readiness assessment reports with extensive hardware and software information, and actionable recommendations to help organizations accelerate their IT infrastructure planning process, and gather more detail on assets that reside within their current environment. MAP also provides server utilization data for Hyper-V server virtualization planning.
- [Elastacloud Liberty Tool](#) - AWS- Liberty is a tool which allows businesses to measure the cost of their Amazon Web Services virtual machines, storage and other components and generate a report demonstrates the cost savings that can be made by migrating to Microsoft Azure
- [Nuget Packages](#) - We publish our Nuget packages here.
- [MSDN Code Gallery](#) - A variety of sample code on Azure available here

SIZING

- Azure Subscription and Service Limits, Quotas, and Constraints:
 - <http://azure.microsoft.com/en-in/documentation/articles/azure-subscription-service-limits/>
- Here are some common asked sizing requests. For Exceptions, please raise Support ticket.

Sizing request		Reference Point
IaaS & PaaS VM Sizing	<ul style="list-style-type: none">• See Link:	<ul style="list-style-type: none">• http://msdn.microsoft.com/en-in/library/windowsazure/dn197896.aspx
Number of Storage Accounts per Subscription	<ul style="list-style-type: none">• 5 – Soft Limit• 20 – Max Limit	<ul style="list-style-type: none">• http://azure.microsoft.com/en-in/documentation/articles/storage-what-is-account/
Storage Account Scalability Targets	<ul style="list-style-type: none">• Capacity – Up to 200 TBs• Transactions – Up to 20,000 entities/messages/blobs per second• Bandwidth is here	<ul style="list-style-type: none">• http://msdn.microsoft.com/en-in/library/dn249410.aspx•
Others	<ul style="list-style-type: none">• https://github.com/richorama/AzureArchitectureReference	

MANAGING YOUR SERVICES

Management Services	http://msdn.microsoft.com/en-in/library/windowsazure/dn306640.aspx
Manage Accounts, Subscriptions and Roles	http://msdn.microsoft.com/en-in/library/windowsazure/hh531793.aspx
Manage Certificates	http://msdn.microsoft.com/en-in/library/windowsazure/gg981929.aspx
Azure Role Based Access Control	<ul style="list-style-type: none">• Role-Based Access Control (RBAC) enables fine-grained control over who can manage what on every Azure service. Accessible on the Azure Preview portal, RBAC makes it possible to grant explicit management/access rights to users and groups on subscription or service levels. RBAC is provided at no additional cost to all Azure subscribers.
Azure Dashboard	http://azure.microsoft.com/en-us/status/

VIRTUAL MACHINES & CLOUD SERVICES – Selecting the Right VM

Azure Deployments defined:

- Microsoft Azure Deployment options – [Azure Fundamentals](#)
- A comparison of [Azure Web Sites, Cloud Services and Virtual Machines comparison](#)
- What should you use? [PaaS or IaaS?](#)
- How to decide if you use Web Sites, Web Roles or VM? [Summary](#)

Infrastructure as a Service (IaaS)	<ul style="list-style-type: none"> • With IaaS you: <ul style="list-style-type: none"> ○ create / configure the environment your application will run in, ○ then deploy your application into this environment (i.e. you create build a complete Windows Server VM image), ○ then add the Microsoft Azure hooks to it, and push the entire VM into the cloud • You're responsible for managing much of this world, doing things such as deploying new patched versions of the OS in each VM.
Platform as a Service (PaaS)	<ul style="list-style-type: none"> • PaaS is a prebuilt runtime set of services (It's as if the environment already exists) where we manage the everything from patching, deploying new OS's, to load balancing, to autoscaling, • You don't have to create VMs explicitly, and your Application package contains all the application artifacts – code, schema, data etc. All you have to do is build or deploy your application and components. (Azure bootstraps a VM, installs the code and starts up the VM for you. Load balances multiple instances and manages all OS patching and instance resilience and lifecycle) • We advise statelessness for applications on PaaS (nothing kept in memory). • The PaaS services and the fabric controller take care of deploying your app across the services you use, and each Service (DB, messaging, web etc.) provides scale and resilience capabilities for your apps • There are two types of PaaS Cloud services / VMs. <ul style="list-style-type: none"> ○ Web roles - are Windows VMs with IIS enabled. ○ Worker roles - are Windows VMs with IIS disabled
Web Sites	<p>Azure Web Sites enables you to deploy web applications on a scalable and reliable cloud infrastructure. Developers and web site owners can quickly scale up and out to meet their traffic and application needs. We offer continuous integration with a wide variety of tools as well as robust language support</p>
Mobile Services	<p>Microsoft Azure Mobile Services accelerates development by providing turnkey way to store data in the cloud, authenticate users, and send push notifications...this saves you building these components yourself</p>

Here is a walkthrough of the options for PaaS and IaaS:

1. DEPLOYMENT OPTIONS

	Worker Roles (PaaS)	Virtual Machines (IaaS)
Overview	<ul style="list-style-type: none">PaaS is a prebuilt runtime set of services (It's as if the environment already exists) and we manage the everything from patching, deploying new OS's, to load balancing, to autoscaling	<ul style="list-style-type: none">You're responsible for managing much of this world, doing things such as deploying new patched versions of the OS in each VM
Storage	<ul style="list-style-type: none">Non-Persistent Storage	<ul style="list-style-type: none">Persistent StorageEasily add additional storage
Deployment	<ul style="list-style-type: none">Stock VHDs	<ul style="list-style-type: none">Build VHD directly in the cloud or build the VHD offsite and upload
Networking	<ul style="list-style-type: none">Internal and input endpoints configured through service model	<ul style="list-style-type: none">Internal endpoints are open by default. Access control with firewall on guest OS. Input endpoints controlled through portal, service model or API/Script
Primary	<ul style="list-style-type: none">Stateless (nothing kept in memory) scale-out applications	<ul style="list-style-type: none">Applications that require persistent storage to easily run in Microsoft Azure

2. OPERATING SYSTEM

- Windows** – PaaS + IaaS
 - Windows Server 2012, Windows Server 2008 R2
- Linux** –IaaS only
 - [Create a Virtual Machine Running Linux](#)
 - [Linux Distributions](#) - SUSE, Canonical Ubuntu, Centos by Open Logix, Oracle Linux, OpenSuse

4. TYPE OF VM

- **General Purpose – BASIC TIER** – Does not include load balancer and auto-scaling capabilities. Suited for single instance production applications, development workloads, test servers and batch processing applications that might not require these features.
- **General Purpose – STANDARD TIER(A-Series)**-Provides an optimal set of compute, memory and IO resources for running a wide array of applications. These instances include both auto-scaling and load balancing capabilities at no additional cost.
- **Optimised Compute – (D-series)** - virtual machines feature solid state drives (SSDs) and 60% faster processors than the A-series and are also available for web or worker roles in Azure Cloud Services. This series is ideal for applications that demand faster CPUs, better local disk performance, or higher memories.
- **Optimised Compute – (DS-series)** - We have a new variant of the D-series sizes called “DS” that are specifically targeted for Premium Storage. The pricing and billing meters for the DS sizes are the same as D-series.
- **G-series VMs**—G-series will provide more memory and more local Solid State Drive (SSD) storage than any current VM size in the public cloud. The largest G-series will offer 448 GB RAM and 6.5 TB of local SSD storage. Alongside this massive memory and local SSD storage, the G-series will also provide unparalleled computational performance
- **Network optimized: fast networking with Infiniband support** - Available in select data centers. Adds a 40Gbit/s InfiniBand network with remote direct memory access (RDMA) technology. Ideal for Message Passing Interface (MPI) applications, high-performance clusters, modeling and simulations, video encoding, and other compute or network intensive scenarios.

5. SIZE OF VM

- Microsoft Azure Instance Sizing for VM's and Cloud Service sizes:
- <http://msdn.microsoft.com/en-in/library/windowsazure/dn197896.aspx>

6. VM IMAGES and SOFTWARE FOR YOUR VM

- **Microsoft** - List of what Microsoft Software supported by Microsoft Azure VM:
 - <http://support.microsoft.com/kb/2721672>
- **Azure Marketplace / Store Gallery** - find and purchase add-ons, and use them to create great applications
 - <http://azure.microsoft.com/en-in/marketplace/>
- **Virtual Machine Images**
 - You can create a virtual machine in Microsoft Azure by using one of the following three methods.
 - FYI - Once you instantiate a virtual machine image, you are responsible for patching, configuring and maintaining the operating system and other software within your virtual machine.

Platform Image	<ul style="list-style-type: none"> • You can create your own virtual machine directly in the cloud by using an image that is provided in the Image Gallery of the Microsoft Azure Management Portal: • To do this, you can use: <ul style="list-style-type: none"> ○ the Management Portal, ○ PowerShell, ○ the programmable API interface (REST); ○ the command-line tools provided for Mac and Linux desktops. • After you create the virtual machine, you can log on to the machine to manage it. <ul style="list-style-type: none"> ○ For a VM that is Windows, you use the Connect button in the Management Portal to start a Remote Desktop Connection. ○ For a VM that is running the Linux OS, you use a Secure Shell (SSH) client to logon. • We refresh the base images periodically, but Microsoft Azure does not force updates to the operating system disks already deployed by customers. Similarly, Linux partners will refresh the Linux base images periodically. • For detailed information on how to create, deploy, and manage virtual machines see: <ul style="list-style-type: none"> ○ http://azure.microsoft.com/en-in/downloads/ • Oracle VM Images for Azure: <ul style="list-style-type: none"> ○ http://msdn.microsoft.com/library/azure/dn439770.aspx
Use your own image	<ul style="list-style-type: none"> • You can use the Add-AzureVHD cmdlet to upload your own VHD file as an image to Microsoft Azure. • Simply upload your image to your Blob storage account and use that image to instantiate a new virtual machine. • Info on Creating and Uploading a Virtual Hard Disk that Contains the Windows Server Operating System: <ul style="list-style-type: none"> ○ http://azure.microsoft.com/en-in/documentation/articles/virtual-machines-create-upload-vhd-windows-server/
Use your own disk	<ul style="list-style-type: none"> • An OS image is a virtual hard drive file that you can use as a template to create a new virtual machine. An image is a template because it doesn't have specific settings like a configured virtual machine, such as the computer name and user account settings. • You might not be able to use an image because of specific application settings that need to persist. In this case, you can use the Add-AzureVHD cmdlet to upload the VHD file as a disk and then you can create a virtual machine from the disk. For example, your disk may already have SQL Server installed. If you create your own virtual machines and install SQL Server on them, you are responsible for making sure that the appropriate licenses are in place. • http://msdn.microsoft.com/library/azure/jj672979.aspx

7. REDUNDANCY & HIGH AVAILABILITY

- **With PaaS** – we provide all the load balancing and management layer to detect failures and will automatically start a new server and deploy your application there in case of an infrastructure issue within Azure DC.
- **With IaaS** – we will triple replicate the disks, such that in the case of a disk failure, Azure uses one of the other disks to allow you to rerun the service. You are responsible for the patching and monitoring of the VM.
- **Affinity Groups** - is a way to tell the Fabric Controller that Azure elements, e.g. Compute and Storage, should always be together or close to one another. The Fabric Controller searches for the best suited Storage Container in the same Cluster, and thus reducing the latency, and increasing the performance. This container will be automatically triple replicated by Azure for Redundancy purposes. Therefore if there is e.g. a hardware fault, Azure detects that the VM is unavailable and kick starts a NEW VM from the replicated image.
- **Single VM Implementations:**
 - No Availability SLA is provided for Single VM implementations. If there is a failure of a Single VM, our monitoring will pick this up, and we will look to restart it or create a copy from the "triple replicated" disk.
 - Additionally we will turn off VMs every so often so we can patch the underlying host machine. So if you have one box, you will have downtime.
- **Multiple VM Implementations:**
 - **Availability Sets in IaaS**- To help ensure the availability of your application, we strongly recommend using multiple virtual machines to provide redundancy (they need to be identical VMs). To do this, configure more than one virtual machine to perform the same function or role. This is deployed across fault domains and update domains and thus ensures your application is not affected by single points of failure e.g. hardware failure or upgrade. The Azure load balancer ensure one VM is not overwhelmed with all of the workload
 - NB. Important to note that we ONLY guarantee the SLA when you deploy two or more role instances in different fault and upgrade domains, your Internet facing roles will have external connectivity at least 99.95% of the time.
 - <http://azure.microsoft.com/en-in/documentation/articles/virtual-machines-manage-availability/>

8. ADD DISKS

- You can attach virtual local disks to the machine. Each disk is 1 TB and there is a fixed limit per VM. Details on attaching a disk can be found here:
 - [How to attach a Data Disk to a VM](#)
 - [Managing Disks and Images](#)
 - [Maximum Number of Data Disks per VM](#)

9. Notes on VM's

- **What should you NOT run in an Azure VM:**
 - Those which are not supported on Azure (the inverse of the list above)
 - Those whose perf/HA/technical requirements cannot be supported by Azure
 - Those whose single server spec requirements exceed Azure VM sizes
 - Those which need high speed network/IO to resources NOT hosted in Azure
 - Clustered Virtual machines are required
 - Anything earlier than Windows Server 2008 R2
 - 16-Bit and 32-bit operating systems are not supported (but 32 bit process running on a 64bit OS are)
- **Autoscaling Cloud Services:**
 - **Autoscale** - configure applications to automatically scale up or down to accommodate current demand, and use auto-scaling rules to minimize costs. ([Virtual Machines](#), [Cloud Services](#), [Web Sites](#), and Mobile Services).
 - [http://msdn.microsoft.com/en-in/library/hh680945\(v=pandp.50\).aspx](http://msdn.microsoft.com/en-in/library/hh680945(v=pandp.50).aspx)
- **Azure Load Balancing vs Traffic Manager**
 - Microsoft Azure offers load balancing services for virtual machines (IaaS) and cloud services (PaaS) hosted in the Microsoft Azure cloud. For PaaS, we manage load balancing for you, for IaaS you need to set it up.

What	Overview	When to Use
Azure Load Balancer	<ul style="list-style-type: none"> • Load balancing allows your application to scale and provides resiliency to application failures among other benefits. • Load Balancing a VM • Load Balancing Capability 	<ul style="list-style-type: none"> • Works only with VMs that are in the same region • Only does Round Robin • Works at the TCP/UDP level, routing traffic between one or more private endpoints that sit behind a public endpoint
Azure Traffic Manager	<ul style="list-style-type: none"> • Traffic Manager allows you to load balance incoming traffic across multiple hosted Azure services across the world. Ensuring that your users requests always go to the closest server • By effectively managing traffic, you can ensure high performance, availability and resiliency of your applications. • NB. Traffic manager does not actually route traffic, it just serves to the caller the DNS name of the public endpoint where their traffic should go according to the policies in effect • Traffic Manager Overview 	<ul style="list-style-type: none"> • It can work across regions • It offers traffic management policies/Methods: <ul style="list-style-type: none"> ○ Round Robin ○ Failover ○ performance • It works at the DNS level, "routing" traffic between one or more public endpoints that sit behind a common DNS name

STORAGE & DATABASES

- Microsoft Azure offers multiple data management services to help manage your data in the cloud. For help in choosing the right solution go to: [Cloud Storage Scenarios](#) also worth reading: [Database options](#)

Storage "Storage as a Service"	<p>Four Types of Storage:</p> <ul style="list-style-type: none">• Blob - For streaming and storing documents, videos, pictures, backups, and other unstructured text or binary data,• File - Share files between applications running in your virtual machines using familiar Windows APIs or file REST API. Azure Files creates a shared file system using the SMB 2.1 protocol.• Page Blobs & Disks - Optimized for random read and write operations, page blobs are ideal for VHD images• Tables & Queues - Tables offer NoSQL storage for unstructured and semi-structured data—ideal for web applications, address books, and other user data. Queues provide a reliable messaging solution for your apps <p>Four Redundancy Options:</p> <ul style="list-style-type: none">• Locally redundant storage (LRS): we maintain 3 replicas of data within a single sub-region to provide high durability.• Zone Redundant Storage (ZRS): we store an equivalent of three replicas of data across 2 to 3 facilities within a single region or across regions for higher durability. ZRS capability is only available for Block Blob Storage type currently.• Geographically redundant storage (GRS): we provide additional data durability by replicating between two sub-regions. In both sub-regions, we maintain 3 replicas of data.• Read-Access Geo Redundant Storage (RA-GRS) provides read access of your secondary storage replica, when the storage account on the primary location is unavailable <p>Scalability and performance targets:</p> <ul style="list-style-type: none">• http://msdn.microsoft.com/en-in/library/windowsazure/dn249410.aspx <p>NEW Premium Storage Level:</p> <ul style="list-style-type: none">• Premium Storage is high performance Solid State Drive (SSD) based Storage designed to support I/O intensive workloads with significantly high throughput and low latency. With Premium Storage, you can provision a persistent disk and configure its size and performance characteristics to meet your application requirements. "Page Blobs and Disks" Storage type
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SQL Database “Database as a Service”	<ul style="list-style-type: none"> SQL Database is a relational database-as-a-service offering. It supports existing SQL Server libraries and APIs, allowing you to reuse code and scripts (but without the need to manage virtual machines or infrastructure). It includes: <ul style="list-style-type: none"> Predictable performance guarantees (99.9% SLA). Built-in backup support, with point-in-time data restore Automatically replicate to another Azure region of your choice (a disaster recovery policy designed for your needs). Auditing: The new auditing feature tracks and logs all events that occur on your database, such as updates and queries against data. Dashboard views and reports provide at-a-glance insight into database events. Gain knowledge about what is happening in your database, and identify trends, discrepancies and anomalies. Replication -Any data in the databases is triple replicated within the Data centre in order to provide a reliable service. More info SQL Database Service Tiers: <ul style="list-style-type: none"> Basic - for light transactional workloads Standard - for transactional workloads Premium - for mission-critical databases <table border="1" data-bbox="421 560 1906 970"> <thead> <tr> <th></th> <th>Basic</th> <th>Standard</th> <th>Premium</th> </tr> </thead> <tbody> <tr> <td>DB Limit</td> <td>2 GB</td> <td>250 GB</td> <td>500 GB</td> </tr> <tr> <td>Point in Time Restore</td> <td>Any point within 7 Days</td> <td>Any point within 14 Days</td> <td>Any point within 35 Days</td> </tr> <tr> <td>Disaster Recovery</td> <td>Geo-restore to any region</td> <td>Standard Geo-replication, offline secondary</td> <td>Active Geo-replication, up to 4 online (Readable) secondaries</td> </tr> <tr> <td>DB Throughput Units</td> <td>5</td> <td>Up to 100</td> <td>Up to 800</td> </tr> <tr> <td>Performance Objectives</td> <td>Transaction rate per hour</td> <td>Transaction rate per Minute</td> <td>Transaction rate per Second</td> </tr> </tbody> </table> 		Basic	Standard	Premium	DB Limit	2 GB	250 GB	500 GB	Point in Time Restore	Any point within 7 Days	Any point within 14 Days	Any point within 35 Days	Disaster Recovery	Geo-restore to any region	Standard Geo-replication, offline secondary	Active Geo-replication, up to 4 online (Readable) secondaries	DB Throughput Units	5	Up to 100	Up to 800	Performance Objectives	Transaction rate per hour	Transaction rate per Minute	Transaction rate per Second
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SQL Server on a Virtual Machine	<ul style="list-style-type: none"> For applications that need full SQL Server functionality, Virtual Machines is an ideal solution. You will find SQL Server 2012 and SQL Server 2008 R2 images offered, including standard, web and enterprise editions. <i>You will need to manage OS, middleware, Runtime</i> <i>More Info:</i> <ul style="list-style-type: none"> http://msdn.microsoft.com/en-in/library/windowsazure/jj823132.aspx 																								

IDENTITY AND ACCESS

- Identity management, provisioning, role management, and authentication are key services both on-premises and through the (hybrid) cloud. Unsurprisingly, identity becomes a service where identity "bridges" in the cloud talk to on-premises directories or the directories themselves move and/or are located in the cloud:
- <http://www.microsoft.com/en-in/download/details.aspx?id=36391>

Microsoft Azure AD Access Control	<p>Microsoft Azure AD Access Control (also known as Access Control Service or ACS) enables centralized authentication and authorization for your cloud application by working with standards-based identity providers, including Windows Server Active Directory as well as consumer web identities such as Microsoft Account, Yahoo!, and Facebook. This is FREE.</p> <ul style="list-style-type: none"> • How to use Access Control • Understanding Microsoft Azure Access control and Integration with Microsoft Azure Active Directory
Microsoft Azure Active Directory	<p>Azure Active Directory is a service that provides comprehensive identity and access management capabilities in the cloud. It combines directory services, advanced identity governance, application access management and a rich standards-based platform for developers. Three levels (Detailed Comparison of Versions here):</p> <ol style="list-style-type: none"> 1. FREE AAD - you can manage user accounts, synchronize with on-premises directories, get single sign on across Azure, Office 365, and thousands of popular SaaS applications like Salesforce, Workday, Concur, DocuSign, Google Apps, Box, ServiceNow, Dropbox, etc. 2. BASIC AAD - provides application access and self-service identity management requirements for task workers with cloud-first needs. You get all the capabilities that AAD Free has to offer, plus group-based access management, self-service password reset for cloud applications, Azure Active Directory application proxy (to publish on-premises web applications using Azure Active Directory), customizable environment for launching enterprise and consumer cloud applications, and an enterprise-level SLA of 99.9 percent uptime. 3. PREMIUM AAD - you get all of the capabilities that he AAD Basic editions have to offer, plus additional feature-rich enterprise-level identity management capabilities explained below.
Azure Active Directory Sync	<ul style="list-style-type: none"> • Microsoft Azure Active Directory Sync Services - Azure AD Sync allows you to onboard to Azure Active Directory and Office 365 with a single forest or multi forest on-prem Active Directory. • http://www.microsoft.com/en-in/download/details.aspx?id=44225 • http://msdn.microsoft.com/en-in/library/azure/dn790204.aspx
Azure Multi-Factor Authentication	<p>Provides an extra layer of authentication, in addition to a user's account credentials, to secure employee, customer, and partner access. It can used for both on-premises & cloud apps</p> <ul style="list-style-type: none"> • Overview

CONNECTIVITY

Connectivity Scenarios for existing Infrastructure and Networks

"PUBLIC" Internet Connection to Microsoft Azure			
Scenario 1: IPSec VPN over internet	Microsoft Azure Virtual Network	What is it? Customer uses encrypted link over public internet to interact with Azure. This could be: <ul style="list-style-type: none"> Secure Point to site connectivity Secure Site-to-site VPN Connectivity Multiple Site to Site VNET to VNET connectivity 	Things to be aware of: <ul style="list-style-type: none"> Greater networking costs and latency since data is hair pinned through a customer data center Data travels over the open Internet to connect to cloud Bandwidth is limited
ExpressRoute – "PRIVATE", dedicated, high-throughput network connection			
Scenario 2: Carrier provided WAN	Private Connectivity to Azure	What is it? <ul style="list-style-type: none"> Connection from a WAN provided by Network Service Provider Azure becomes another site on the customer's WAN network. The routing is managed by the network service provider The service provider will provide redundant connectivity for High Availability 	Things to be aware of: <ul style="list-style-type: none"> Avoids risks from exposure to Internet Avoids complexity and added costs Provides lower latency, higher bandwidth and greater availability Full Technical details, Options and Availability: <ul style="list-style-type: none"> http://msdn.microsoft.com/library/azure/dn606309.aspx
Scenario 3: Meet Azure at peering exchange location	Private Site to Site Connectivity to Azure	Customer connects/Peers to Azure at ExpressRoute Exchange Provider <ul style="list-style-type: none"> The routing is managed by the customer The customer must establish a pair of cross connects through the exchange provider 	

BUSINESS CONTINUITY, DR & HIGH AVAILABILITY

- Business Continuity plans are really dependent on what capabilities of Microsoft Azure you are using, in what scenario you are using, and what are your RTO (Recovery Time objective) and RPO (Recovery point object)
- Planning for failures and disasters in the Cloud requires you to recognize the failures quickly and implement a strategy that matches your tolerance for the application's downtime. Additionally you have to consider the extent of data loss the application can tolerate without adverse business consequences as it is restored.
- Availability problems can be classified into three broad categories:
 - Failure of individual servers, devices, or network connectivity
 - Corruption, unwanted modification, or deletion of data
 - Widespread loss of facilities
- With the cloud, each decision has a cost implication (e.g. building redundant services running in another datacenter)
- I would encourage looking at our:
 - [Business continuity planning guide](#) walks you through scenarios for specific Azure capabilities
 - [Disaster Recovery and High Availability Resources](#)

- Here are some common features we have been asked about:

FEATURE	What can you use / do:
STORAGE Geo-Redundancy	<ul style="list-style-type: none"> Locally redundant storage (LRS): we maintain multiple replicas of data within a single region to provide high durability. Geographically redundant storage (GRS): we provide additional data durability by asynchronously replicating between two regions hundreds of miles apart within the same geo. In both regions, we maintain multiple replicas of data. Read-Access Geographically redundant storage (RA-GRS): Customers can use this service to access their data when the storage account in the primary region is unavailable allowing higher read availability over GRS.
STORAGE Import/Export	<ul style="list-style-type: none"> Microsoft Azure Import/Export enables you to move large amounts of your data into and out of Windows Azure Blob Storage. Transporting your data from your hard disk drives to Azure is simple and easy. It can be completed by using secure transport to our datacenters and Microsoft's high-speed secure internal network to transfer the data. Data Recovery – if you want to retrieve large amounts of data stored in Microsoft Azure Blob Storage, you can use Import/Export to transfer the data to a storage device and have it delivered to you at your desired location.
STORAGE StorSimple – Cloud Integrated Storage	<ul style="list-style-type: none"> StorSimple cloud-integrated storage provides an on-premises enterprise-grade storage area network (SAN) that integrates seamlessly with Microsoft Azure Blob storage to enable unlimited capacity scaling, significantly lower cost of ownership and automated data protection in the cloud
VMs Microsoft Azure Backup	<ul style="list-style-type: none"> Microsoft Azure Backup helps you protect important server data off-site with automated backup to Microsoft Azure. Manage cloud backups from the familiar backup tools in Windows Server, Windows Server Essentials, or System Center Data Protection Manager. NB. You cannot back an Azure VM to Microsoft Azure Backup
VMs Microsoft Azure Traffic Manager	<ul style="list-style-type: none"> Traffic Manager enables you to improve the availability of your critical applications by monitoring your hosted services in Microsoft Azure and providing automatic failover capabilities when a service goes down, within and across geographic regions.
DATABASE SQL Database	<ul style="list-style-type: none"> Microsoft Azure SQL Database, formerly SQL Azure, is a fully managed relational database service that includes built-in high availability as there are Two datacenter replicas built-in for every SQL database

PREVIEW SERVICES

Microsoft Azure Preview Services:

- All Preview Services are listed here:
 - <http://azure.microsoft.com/en-in/services/preview/>
- They represent the latest capabilities that have been added to our cloud platform. These features are in a state of development and carry NO SLA or support other than forums. Please see supplemental terms for Preview services:
 - <http://azure.microsoft.com/en-in/support/legal/preview-supplemental-terms/>
- Previews may be subject to reduced or different security, compliance and privacy commitments, as further explained in the Privacy Statement, Trust Center, and any additional notices provided with
- the Preview. We may change or discontinue Previews at any time without notice. We also may choose not to release a Preview into "General Availability".

5. Microsoft Azure for Test & Development

Why use Microsoft Azure for Test and Development?

- **Microsoft Azure Platform** - enables you to develop and test applications faster, at reduced cost, and with the flexibility to deploy in the cloud or on-premises.
- **MSDN** – Provides you with free monetary credits and software
- **Visual Studio / Visual Studio Online** – A phenomenal integration story

No Charge for stopped VMs	As of June 2013, you no longer need to delete VMs to stop charges. Simply stop the VM, and we preserve the deployment state and configuration, but also stop charging.
Pay by the Minute Billing	We are billing at a per-minute granularity. So if you run a VM (or Cloud Service, or Web Site, or Mobile Service) for only 6 minutes in an hour, we now only charge you for the actual 6 minutes of compute usage
MSDN Use Rights	MSDN dev/test software licenses (e.g. SQL Server, SharePoint, BizTalk, etc) can now be used in Azure.
Heavily Discounted MSDN Dev/Test Rates	There is a new billing rate for customers who have MSDN subscriptions. You can now spin up <u>any number</u> of Windows Server, SQL Server, SharePoint Server, and BizTalk Server VMs for Dev/Test scenarios using Microsoft Azure and get up to 40% off
MSDN Monetary Credits	Every MSDN subscriber gets up to \$150 per month of Azure monetary credits that can be used for Dev/Test purposes.
Portal Support for Tracking MSDN Monetary Credit Usage	Microsoft Azure customers to track their monetary credit usage. The top of the Microsoft Azure Management Portal now includes "Credit Status UI" that enables customers to quickly check their current status

Popular Scenarios for using Microsoft Azure in Test and Development:

- Development and Test sandbox
- Develop Windows / Linux apps on VM's
- Create repeatable dev and test environments using scripting
- Testing load or scalability
- Accelerate sharepoint development

MSDN Subscriptions

- [MSDN Subscriptions](#) - Subscribers can use Microsoft software to design, develop, test, and demonstrate your apps on as many devices as you need
 - [What is included in the MSDN Subscription?](#)
 - Access to the Microsoft Software and Visual Studio online (TFS)
 - Access to Technical Support Incidents
 - Access to FREE Microsoft Azure
 - Access to developer accounts for O365, W8, WP8 Store
 - [MSDN Subscription Levels](#)
 - [How to get started with your MSDN Subscription?](#)
 - MSDN benefits cannot be pooled under one "uber-subscription" which has all the credits from all the subscriptions pooled
 - You can allow anybody you like to be a co-admin of your subscription. But if that's an MSDN subscription with say \$100/month, then they're all going to share it.
 - Azure resources can be moved from one subscription to another
 - MSDN gives you access to Windows Client OS images which can only be used on an individual Azure subscription for testing purposes.
 - MSDN provides lower prices (as they don't include the additional licence, e.g. SQL)
 - Usage is specifically for dev/test use, there's no SLA, and it's billed via credit card or monthly invoice, etc.
 - MSDN Offer: <http://azure.microsoft.com/en-in/offers/ms-azr-0023p/>
 - There is a definitive details on Page 16 (Cloud Use rights): [VS and MSDN Licensing Whitepaper](#)

MSDN Microsoft Azure Monetary Credits

- Every MSDN subscriber gets up to \$150 per month of monetary credits that can be used to run any Microsoft Azure resource for Dev/Test purposes.
 - MSDN Professional Subscribers get \$50/month,
 - MSDN Premium Subscribers get \$100/month,
 - MSDN Ultimate Subscribers get \$150/month
- To put this in Perspective, \$100 a month could be used for:
 - 3 x Windows Server VMs for 16 hours a day, every day of the month.
 - 80 x Windows Server VMs (with SQL, SharePoint, etc) to use in a load-test for 20 hours:
 - 50 x Hadoop cluster nodes for 10 hours of a dev/test MapReduce run
 - 100 x web-sites with a SQL Database for dev / test

Useful Further Information:

- [Getting Started with MSDN and Azure](#)
- [Using your MSDN Subscription to spin up a VM](#)
- Getting Started with Microsoft Azure for Development & Test:
 - <http://azure.microsoft.com/en-in/solutions/dev-test/#getstarted>
- Useful Video's:
 - [Step-by-step: Getting setup on Azure with your MSDN benefits](#)
 - [Getting Started with Microsoft Azure for Development & Test](#)
 - [Deploy Automatically to Azure using Visual Studio Release management](#)
- [Visual Studio](#)
- [Visual Studio Online](#) (Includes five free Basic users and includes shared monthly resources for build and load testing)

6. Microsoft Azure Pricing

Microsoft Azure operates on a “utility” based pricing mode, in that you consume the services and pay for what you use. It is therefore vital to understand how the components are priced and metered, and how these costs scale in production, as the costs may not scale uniformly.

There are generally 3 areas of Cloud computing costs you need to think about:

- **Compute** – How much compute power are you using? (Per hour)
- **Storage** – How much data you are storing? (GB / month)
- **Bandwidth** – How big are the transactions going through the system? (GB)

To assess the typical usage of your application, we suggest you:

1. **Architecture Walk through**- Walk through the Architecture to understand what components you use and what and how they change with growth in your solution.
2. **Usage Assumption** - Overlay your Assumptions of a Small, Medium and Large Users
3. **Beta Customer Test**- Analyse a Beta customer’s usage to test the above hypothesis
4. **Business Growth** – Apply your customer acquisition/business growth projections (High, Medium & Low), and understand how existing customers usage will grow?

For Azure specifics, please review:

- [Pricing Overview](#)
- [Pricing Calculator](#)
- Azure prices are illustrated per hour and based on the assumption of 744 hours a month
- Important to note that regions / geography deployment do impact costs
- Some specific Feature FAQ's:

Programme	Offer
VMs (IaaS)	<ul style="list-style-type: none">• When customers shut down their VM (VMs only), the billing meters will stop as well (i.e. you don't need to delete)• All VM Billing is converted into SMALL instance hours<ul style="list-style-type: none">• http://azure.microsoft.com/en-in/pricing/faq/virtual-machines-how-do-instance-sizes-get-billed/
Cloud Services (VMs, Web, Worker Role)	<ul style="list-style-type: none">• Some services e.g. VMs, Web & Worker roles, and SQL Server are charged per minute but they are listed as hourly rates. We will bill based on total number of minutes when your VMs run for a partial hour.
SQL Server running in a VM (IaaS)	<ul style="list-style-type: none">• The virtual machine instance price does not include any Storage cost associated with the image running in the virtual machines (i.e. the size of the SQL database).• The SQL Server rates below do not include the hourly rates for Windows Server Virtual Machines. The cost of underlying Windows Server VMs will be billed separately• The local drives should be used for the installation files only. You need to add on the price of Blob Storage (you attach to VMs)
Bandwidth	<ul style="list-style-type: none">• Bandwidth or Data transfer pricing is listed in the link below.• We do not charge for data going into the data centres• http://azure.microsoft.com/en-in/pricing/details/data-transfers/

Microsoft Azure Purchasing Options

Contracting with Microsoft for Azure:

- As a service provider building solutions on the Microsoft Azure platform, you will be driving Microsoft Azure usage either directly or indirectly.
- There are three aspects you need to think about,
 - Who will contract with Microsoft for the Azure Usage?>>Will you contract directly or will you use your customers Azure Subscription?
 - How much Azure will you be using over the next 12 months?>>How certain are you of this usage?
 - What contracting mechanism will you or your customer use?>>Pay as you Go, Open Distribution, MOSA Commitment or EA Commitment
- There will be implications for either option including Security, Access control, Data privacy, Raising a Support tickets, Control of changes and updates, workload separation, and price transparency
- Your solution costs will change over time, and your understanding of customer use patterns will becoming increasingly sophisticated. Work with your account team or reseller to understand what the most efficient way to buy Azure.

Member offers & FREE Trials:

- Before you commit to any purchase model, explore the many free Azure options available: <http://azure.microsoft.com/en-in/pricing/member-offers/>

Programme	Offer	
FREE Trial	<ul style="list-style-type: none">• ₹12,100 to use for 1 month	<ul style="list-style-type: none">• http://azure.microsoft.com/en-in/pricing/free-trial/
MSDN	<ul style="list-style-type: none">• Professional: ₹3,100 per month of Azure• Premium: ₹6,100 per month of Azure• Ultimate: ₹9,100 per month of Azure	<ul style="list-style-type: none">• MSDN Subscription allowance
MPN	<ul style="list-style-type: none">• ₹6,008.75 Azure credits each month	<ul style="list-style-type: none">• MPN allowance
BizSpark	<ul style="list-style-type: none">• ₹9,100 Azure credits each month	<ul style="list-style-type: none">• BizSpark allowance

Purchase Options

- <http://azure.microsoft.com/en-in/pricing/purchase-options/>

	Pay As You Go (PAYG)	Open	MOSA Monetary Commitment (DRAFT)	Enterprise Agreement / Server and Cloud Enrolment
What is it?	<i>Azure utility based pricing and contracting model, that is billed monthly in arrears based on your actual usage</i>	<i>Packaged Upfront Monetary commitment model that allows you to buy "Azure Credits" from your local reseller (think Prepayment cards). OR Become a reseller and sell Azure to your customer, and let them manage their own subscription</i>	<i>Azure monetary commitment based model with discounts driven by commitment level</i>	<i>Azure Enterprise Upfront monetary commitment model, with discounts and incentives driven by commitment level. Allows you to present your customer with a complete solution for your Application or service</i>
Ideal for Companies	<ul style="list-style-type: none"> • Billing <\$500 a month • Taking their first steps on Azure 	<ul style="list-style-type: none"> • Work closely with a Microsoft resellers • You or your customers want to purchase Azure upfront • Would like to resell Azure to customers, but not own the subscription 	<ul style="list-style-type: none"> • Billing >\$500 a month • Looking for volume discounts based on upfront commitments • Would like to present one bill to the customer as part of your SaaS solution 	<ul style="list-style-type: none"> • Billing > \$24,000 p.a. • Need to manage multiple subscriptions on an Enterprise level and need access to the Azure EA portal • Looking for volume discounts based on upfront commitments • Would like to present one bill to the customer as part of your SaaS solution
Minimum Monetary Commitment	<ul style="list-style-type: none"> • Not a commitment model 	<ul style="list-style-type: none"> • Minimum of +\$100 (£61.09) commitment units 	<ul style="list-style-type: none"> • Minimum of >\$500 a month for 6 months 	<ul style="list-style-type: none"> • Minimum of \$24,000
Invoicing Frequency	<ul style="list-style-type: none"> • Monthly (in arrears) 	<ul style="list-style-type: none"> • Billed on sale of Azure Credit SKU 	<ul style="list-style-type: none"> • Dependent on whether you commit to payments 1, 6, 12 months in advance 	<ul style="list-style-type: none"> • Prepay 12 months upfront
Invoice Entity	<ul style="list-style-type: none"> • Directly from Microsoft 	<ul style="list-style-type: none"> • Direct from Microsoft, but administered via Reseller 	<ul style="list-style-type: none"> • Directly from Microsoft 	<ul style="list-style-type: none"> • Directly from Microsoft but managed by Microsoft License Solution Provider (LSP)
Payment Types	<ul style="list-style-type: none"> • Credit Card • Invoice Payment 	<ul style="list-style-type: none"> • Credit Card • Invoice Payment 	<ul style="list-style-type: none"> • Credit Card • Invoice Payment 	<ul style="list-style-type: none"> • Invoice Payment
Time Commitments	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • 12 month commitment 	<ul style="list-style-type: none"> • 6 Months Commitments, or • 12 months Commitments 	<ul style="list-style-type: none"> • 36 Month Commitment and agreement, but with the ability to reduce/increase in Year 2/3
Pricing & Discounts	<ul style="list-style-type: none"> • A number of Azure components have baked 	<ul style="list-style-type: none"> • Each Azure credit SKU = \$100 	Discounts factored by: <ul style="list-style-type: none"> • How much you commit to pay? 	<ul style="list-style-type: none"> • Work with the same resellers from whom you may currently purchase Microsoft software

	in discounts based on Volume	<ul style="list-style-type: none"> Any discounts on this are to be negotiated with your reseller. 	<ul style="list-style-type: none"> How long you commit to do it? How much you prepay? (monthly or Total) 	
Additional Benefits / Incentives	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> Subscription usage monitored by reseller 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> FREE Azure Credits – MS will credit to the EA portal the first 90 days usage (max 25% of initial commitment) FREE Deployment Funds – To be spent with MCS or an Azure partner for consultancy related to Azure
Access to EA Portal	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> No 	<ul style="list-style-type: none"> Yes
Agreement Type	<ul style="list-style-type: none"> Microsoft Online Services Agreement (MOSA) – included in Services Terms PAYG Offer details 	<ul style="list-style-type: none"> Volume Licensing terms - Open, Open Value etc Open Offer details 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Volume Licensing terms – Enterprise agreement and Server and Cloud Enrolment EA Offer details
Highlighted Terms and Conditions	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Azure credit expires 12 months from each credit activation date If Azure credit key is not activated within 5 years, credit will expire Reseller & Customer will be notified of balance Service will stop if the account is not topped up in time. Unutilized monetary credit from Open cannot be transferred to EA 	<ul style="list-style-type: none"> If you have an unused commitment balance at the end of a billing month, it will be rolled over as a credit to future billing months until the end of your offer term. 	<ul style="list-style-type: none"> Azure monetary commitment is a “use it or lose it agreement. It must be used within 12 months or you will lose the balance There is more detail in the Appendix
Support	<ul style="list-style-type: none"> All Support Packages are available for purchase 	<ul style="list-style-type: none"> All Support Packages are available for purchase 	<ul style="list-style-type: none"> All Support Packages are available for purchase 	<ul style="list-style-type: none"> Developer Support excluded from EA/SCE agreement
Where to sign up	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/pricing/purchase-options/ 	<ul style="list-style-type: none"> Contact your local Microsoft reseller or search online: Pinpoint 	<ul style="list-style-type: none"> http://www.windowsazure.com/en-in/pricing/purchase-options/ 	<ul style="list-style-type: none"> Contact your account manager or LSP, or search online for an LSP: Pinpoint

7. Microsoft Azure Support

The fastest way to get a response to your technical or account issues is through raising a ticket via the portal. Account and Billing support tickets are provided free of charge, and Technical support is available via one of the support packages listed below.

Please note, during an outage, it is vital that you raise a support ticket to ensure that you get the best support experience.

1. ALWAYS Check the Azure Status Dashboard

- Check the Status Dashboard to understand if there is an ongoing issue related to the service:
- <http://azure.microsoft.com/en-in/status/>

2. Get Support - Select a Microsoft Azure Support Offerings

- <http://azure.microsoft.com/en-in/support/plans/>
- [Support FAQ's](#)

Name	Price	Response Time	Detail
Core	Included	NA	<ul style="list-style-type: none"> • Forum support • Account/Billing management
Developer	₹1,742.54 a month	<8 Hours	<ul style="list-style-type: none"> • Unlimited break/fix via Web Submission • <u>NB. Not available for Azure EA</u>
Standard	₹18,026.25 a month	<2 Hours	<ul style="list-style-type: none"> • Unlimited break/fix via Web Submission • 3 x Telephone call backs per month
Pro-Direct	₹60,087.50 a month	<1 Hour	<ul style="list-style-type: none"> • Unlimited Telephone call backs with Priority handling • Escalation services • Pooled A/C management • Some Proactive services
Premier	Custom Learn more	<1Hour Minimum	<ul style="list-style-type: none"> • Unlimited Priority Telephone • Assigned ADM • Bespoke Proactive services/mentoring • Rapid Response option

3. Collect the necessary information for a Support ticket

- What information will the ask for → Click this [link](#)

4. Understand the Severity of the Incident:

- You are in control of the ticket priority, please review the ticket Severity levels below, and notify the allocated engineer if the severity changes:

Severity	Access Point			
		Developer	Standard	Pro-Direct
A	Critical business impact – Customer’s business has significant loss or degradation of services and it requires urgent attention.	8 Hours	2 Hours	1 Hour
B	Moderate business impact - Customer’s business has moderate loss or degradation of services but work can reasonably continue	8 Hours	4 Hours	2 Hours
C	Minimum business impact - Customer’s business is functioning with minor or no service impediments	8 Hours	8 Hours	4 Hours

5. Raise a Support Incident

Method	Access Point
Portal	Access the portal to raise a support ticket
Web Ticket	http://azure.microsoft.com/en-in/support/options/
Forum Post	http://azure.microsoft.com/en-in/support/forums/

- For Escalations:
 - Subscription Management: wasmsec@microsoft.com
 - Technical Support: wats@microsoft.com
 - Professional Direct Escalation: PDAzure@microsoft.com

6. Check the Additional Microsoft Azure Support Options and resources:

- [Microsoft Azure Status Dashboard](#) - Is there a services issue/incident?
- [Microsoft Azure Known Issues](#) - Is there a known problem?
- [Microsoft Azure Forums](#) - Do other people have a similar problem?
- [Microsoft Azure Blog](#) - For Major Azure product announcements
- [Microsoft Azure Twitter Feed](#) - For all things Microsoft Azure

IMPORTANT NOTES ON SUPPORT:

- **Preview Services** - Support is limited to Support Forums
- **Support Plan** - You cannot raise Technical support tickets without a Support plan
- **EA Customers & Support** - EA Customers must buy Support via their LSP/LAR
- **Support Entitlement** - The flat monthly cost for Azure Support covers the entire account regardless of how many subscriptions you have under the account or how much usage you have. All subscriptions under an account share the same support plan.
- **Raising a Ticket** - To submit a support incident about a particular Azure subscription, you must be the Service Administrator or Co-Administrator ([To add Co-Administrator](#)).
- **Root Cause Analysis** - Root Cause Analysis: All requests for the RCA of this incident can be made by submitting a support request
- **Planned Maintenance** - Notices are sent to customers running 1 VM in IaaS (i.e. no SLA). Email sent to Azure subscription Admin ONLY, typically 2-5 days' notice

7. Support for MSDN, TechNet, or Microsoft Partner Network (MPN) users and partners

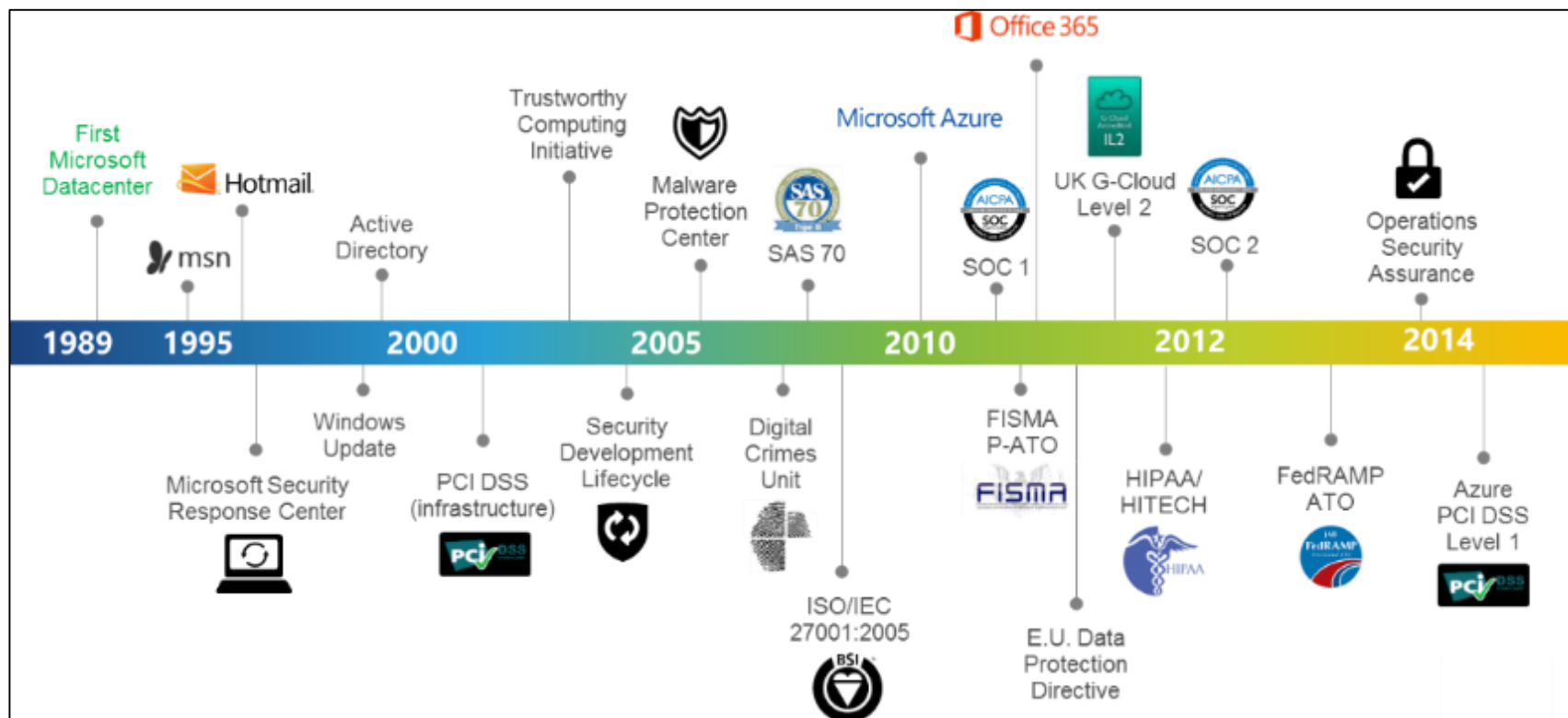
- **I have a Microsoft subscription (such as MSDN, TechNet, or MPN) that includes a number of technical incidents. Can I use those for Azure technical incidents?**
 - Yes, in the incident submittal form, under "Other support options," click on the link to submit a technical incident utilizing Microsoft Professional Contract Support
- **I am an MPN partner. Can I use my MPN benefits to submit Azure technical incidents?**
 - Yes. In the incident submittal form, there will be a link to submit a technical incident utilizing MPN benefits
- **Will MPN partners be able to access their traditional MPN Benefits for Azure?**
 - Yes. The partner will still be able to utilize the same MPN benefits they have for other products
- **I am developing applications on behalf of or assisting my client that is running on Azure. How do I get support?**
 - You can get support from Azure in one of two ways. One is to purchase support for your account. You can purchase an Azure Support plan from your Azure account, and any subscription under the account is covered by the same support plan. The other way is to get support from your client's account. If you manage the deployment on a subscription under your client's account as a Service Administrator or Co-Administrator, then you can use your own Partner benefits to submit a support incident or your client must have an Azure Support plan to cover the support for that subscription.

8. Microsoft Azure Security, Privacy and Compliance

Our experience in online and cloud services started nearly 20 years ago with the launch of MSN and is closely related to our investments in security and compliance. We have applied the principles of Trustworthy Computing that Bill Gates outlined in 2002 and the Security Development Lifecycle practices to our cloud and online services.

Our cloud infrastructure has been demonstrating security capabilities through certifications and attestations since 2007, when we first received a SAS 70.

Since then, we have also added many other certifications and attestations such as ISO 27001, SOC 1 and 2, PCI-DSS and a FedRAMP P-ATO issued by the Joint Authorization Board.



Microsoft strives to take a leadership role when it comes to security, privacy, and compliance practices. We employ robust policies and processes to ensure we deliver a trusted cloud environment and we openly share the results of our third-party audits that review the effectiveness of our internal controls with prospective customers and partners. Here are the key links:

Microsoft Azure Trust Centre:

- [Trust Centre - Home](#)
- [Trust Centre - Security](#)
- [Trust Centre - Privacy](#)
- [Trust Centre - Compliance](#)
- [FAQ's](#)

Security:

- [Standard Response to Security and Privacy RFI](#)
- [Microsoft Azure Cloud Security Alliance STAR submission](#)
- [GFS Security and Compliance](#)
- [Penetration Testing Approval Form](#) - We understand that security assessment is also an important part of our customers' application development and deployment. To initiate penetration testing, please download the Penetration Testing Approval Form [here](#) and then contact Support.

Privacy:

- [Customer Data, EU Data Protection Directive etc](#)
- [Privacy Statement](#)
- [Data Protection Whitepaper](#)
- [Official Blog of Brad Smith](#) - Microsoft Commentary from General Counsel & Executive VP, Legal & Corporate Affairs

Microsoft Azure Specific Documentation:

	What is it?
ISO 27001	<ul style="list-style-type: none"> ISO27001 Formally specifies a management system that is intended to bring information security under explicit management control. Microsoft Azure is committed to annual ISO/IEC 27001:2005 certification. The certificate issued by the British Standards Institution (BSI) is publically available. It includes over 130 security controls, and it maps Microsoft Azure controls to control objectives contained in Annex A of ISO/IEC 27001:2005. <ul style="list-style-type: none"> ISO 27001 certificate Microsoft Azure ISO 27001 controls
SSAE 16 / ISAE 3402 SOC Reports	<ul style="list-style-type: none"> Accounting standard relied upon as the authoritative guidance for reporting on service organizations (SOC 1, SOC 2, SOC 3) Annual audit, controls monitored for 6 months, 10 domains, detailed audit report shared with customers under NDA Microsoft Azure has been audited against the Service Organization Control (SOC) reporting framework for: <ul style="list-style-type: none"> The SOC 1 Type 2 audit report attests to the design and operating effectiveness of Microsoft Azure controls. The SOC 2 Type 2 audit included a further examination of Microsoft Azure controls related to security, availability, and confidentiality. Microsoft Azure is audited annually to ensure that security controls are maintained. We have also just published the Independent Service Auditor's Report from Deloitte & Touche for our cloud infrastructure To get access to the reports please contact your Account representative
Payment Card Industry (PCI) Data Security Standards (DSS) Level 1	<ul style="list-style-type: none"> Microsoft Azure is Level 1 compliant under the Payment Card Industry (PCI) Data Security Standards (DSS) as verified by an independent Qualified Security Assessor (QSA), allowing merchants to establish a secure cardholder environment and to achieve their own certification. The PCI DSS is an information security standard designed to prevent fraud through increased controls around credit card data. PCI certification is required for all organizations that store, process or transmit payment cardholder data. Customers can reduce the complexity of their PCI DSS certification by using compliant Microsoft Azure services. Scope: The Information Security Management System (ISMS) for Microsoft Azure, including infrastructure, development, operations and support for Compute, Data Services, App Services and Network Services are in scope for the PCI DSS Attestation of Compliance. The Microsoft Azure PCI Attestation of Compliance and Microsoft Azure Customer PCI Guide are available for immediate download.
E.U. Data Protection Directive	<ul style="list-style-type: none"> Law that sets a baseline for handling personal data in the EU, Microsoft complies through EU-US Safe Harbor Framework EU regulators and customers asking for EU Model Clauses <ul style="list-style-type: none"> Customer Data, EU Data Protection Directive etc For our Enterprise agreement customers, we have: <ul style="list-style-type: none"> A Data Processing Agreement that details our compliance with the E.U. Data Protection Directive and related security requirements for Microsoft Azure core features within ISO/IEC 27001:2005 scope. E.U. Model Contractual Clauses that provide additional contractual guarantees around transfers of personal data for Microsoft Azure core features within ISO/IEC 27001:2005 scope.
Article 29 Working Party	<ul style="list-style-type: none"> The European Union's data protection authorities have found that Microsoft's enterprise cloud contracts meet the high standards of EU privacy law. This ensures that our customers can use Microsoft services to move data freely through our cloud from Europe to the rest of the world

	<ul style="list-style-type: none"> • The EU's 28 data protection authorities acted through their "Article 29 Working Party" to provide this approval via a joint letter. • By acknowledging that Microsoft's contractual commitments meet the requirements of the EU's "model clauses," Europe's privacy regulators have said, in effect, that personal data stored in Microsoft's enterprise cloud is subject to Europe's rigorous privacy standards no matter where that data is located. This is especially significant given that Europe's Data Protection Directive sets such a high bar for privacy protection • Meaning customers can be reassured that no matter where their data is located in the world it is protected to a standard which is no lower than that required by the EU data protection authorities • http://blogs.microsoft.com/blog/2014/04/10/privacy-authorities-across-europe-approve-microsofts-cloud-commitments/
Safe Harbor Certification	<ul style="list-style-type: none"> • US-EU Safe Harbor is a streamlined process for US companies to comply with the EU Directive 95/46/EC on the protection of personal data. • Intended for organizations within the EU or US that store customer data, the Safe Harbor Principles are designed to prevent accidental information disclosure or loss. US companies can opt into the program as long as they adhere to the 7 principles outlined in the Directive. <ul style="list-style-type: none"> • Safe Harbor Certification
Law Enforcement Requests Report	<ul style="list-style-type: none"> • Microsoft's Law Enforcement Requests Report for the first six months of 2013. This is our second Law Enforcement Requests Report and it covers the period from January to June 2013. • The report details the number of requests for data we received from law enforcement agencies around the world, and how Microsoft responds to those requests. It covers requests for data relating to all of Microsoft's online and cloud services, including Skype: <ul style="list-style-type: none"> • http://www.microsoft.com/about/corporatecitizenship/en-in/reporting/transparency/
HIPAA	<ul style="list-style-type: none"> • HIPAA and the HITECH Act are United States laws that apply to most doctors' offices, hospitals, health insurance companies, and other companies involved in the healthcare industry that may have access to patient information (called Protected Health Information or PHI). In many circumstances, for a covered healthcare company to use a service like Microsoft Azure, the service provider must agree in writing to adhere to certain security and privacy provisions set forth in HIPAA and the HITECH Act. • This is ONLY available to Enterprise agreement customers. <ul style="list-style-type: none"> • HIPAA Business Associate Agreement (BAA) • Microsoft Azure HIPAA Implementation Guidance
FISMA	<ul style="list-style-type: none"> • U.S. Federal law enacted in 2002, based on NIST 800 series, 18 control domains, in-depth audit, documentation heavy • Applies to all U.S. Federal agencies, New FedRAMP became effective in June 2012 • http://blogs.technet.com/b/gfs/archive/2010/12/02/microsoft-s-cloud-infrastructure-receives-fisma-approval.aspx
Microsoft Vendor Privacy Assurance Program	<ul style="list-style-type: none"> • We require subcontractors to join Microsoft's Vendor Privacy Assurance Program, to meet our privacy requirements by contract, and to undergo regular privacy training. We contractually obligate subcontractors that work in facilities or on equipment controlled by Microsoft to follow our privacy standards. All other subcontractors are contractually obligated to follow privacy standards equivalent to our own. <ul style="list-style-type: none"> • Microsoft Azure List of Subcontractors

9. Microsoft Azure Marketing Support for ISVs

As a valued Microsoft Azure ISV (Independent Services Vendor), you may be eligible for valuable Go-to-Market programs. Contact your Microsoft Azure representative for further details.

Microsoft Go To Market (GTM) Programme:

- Microsoft has designed a GTM program to help you promote and grow your Microsoft Azure applications while giving you technology insights that help you expand your cloud capabilities.
- To join the program, Tune in to [Partner Community news](#), or contact AzureGTMPartner@Microsoft.com
 - <http://www.MicrosoftGoToMarket.com>

Promote your Solution using:

- Joint Case Studies,
- Microsoft Social Media,
- Guest blogging on MSDN/TechNet,
- Press releases and joint PR work,
 - [Microsoft Azure Press Release Template \(1.2 & 1.3\)](#)
- [Partner Blog on Channel 9](#)

Marketing Opportunities

- Co-marketing funds,
- Discounted Marketing offers
- [Marketing Made Easy](#) with Resource IT
- [Partner Marketing Centre](#)

Building Channels to Grow or influence your sales

- [Cloud Channel Development](#) materials
- [Pinpoint](#) to identify new partners

Events

- [Microsoft Led Events](#)
- [Run your own @ MSFT](#)
- [Tools to run an Event](#)

Microsoft Showcases for your Application or Service

- [Azure Marketplace](#): - a global online market where ISVs and Data Publishers can publish and sell finished applications and premium datasets
- [Microsoft PinPoint](#): - Find the applications and services you need most
- [Windows Phone Marketplace](#): - For all Windows Phone Apps
- [Dynamics Marketplace](#): - Boost productivity with Dynamics solutions
- [Office 365 Marketplace](#): - innovative professional services and applications from Microsoft partners
- [Windows 8 Store](#): Included as part of the OS on every Windows 8 device

Interested in Building a Windows 8 / Windows Phone 8 App for your solution?

- <http://appstudio.windows.com/>
- <http://developer.microsoft.com/>

Interested in working with Dynamics CRM Resource Kit:

- <http://aka.ms/CrmResourceKit>

10. Microsoft Partner Network (MPN) and BizSpark for Azure ISVs

Microsoft Partner Network (MPN)

What is MPN?

- The [Microsoft Partner Network](#) (MPN) is Microsoft's core Partner program. When you join MPN you receive a set of core benefits that can help you save time and money while you strengthen your capabilities, better serve customers, and build connections.

What are the MPN Levels?

There are essentially 4 levels of Partner Members in MPN:

1. Network Members get access to the [Core Benefits](#)
2. [Action Pack](#) Subscription Members - costs ₹22,100
 - [Overview](#)
 - [Detail Benefits and Requirements](#)
 - [FAQ](#)
3. Silver [Competency](#)—reflect partners with consistent capability, expertise, commitment
4. Gold [Competency](#) - demonstrate best-in-class capability within a specific solution area

What are the most appropriate competencies for an ISV/CSV?

- The programme continues to evolve and the [MPN disclosure guide](#) outlines future changes. At this moment, as an ISV or CSV, the most appropriate Competencies are:

Type of Competency	Key Links
Application Development Competency	<ul style="list-style-type: none">• Guide• Detailed requirements and benefits• Software and Online Services benefits• MPN software licensing benefits FAQ• Partner Benefits Statement

Cloud Platform Competency

- [Detailed requirements and benefits](#)
- [Software and Online Services benefits](#)
- [MPN software licensing benefits FAQ](#)
- [Partner Benefits Statement](#)

What are the Gold or Silver Competency Benefits?

- There are lots of benefits associated with each competency including:
 - [MSDN Subscriptions](#)
 - [Internal use Rights software](#)
 - Free Azure usage
 - Education
 - MPN competency logo
 - [Partner Advisory hours](#)
 - Product support
 - Signature cloud support
 - [Run an event @ Microsoft](#)

Microsoft BizSpark

Overview

- The Microsoft *BizSpark* 3 year program provides technology, support, visibility, and community to promising start-ups and entrepreneurs at no charge. Start-ups become part of the BizSpark ecosystem and get access to investors, advisors, and valuable offers to help run their businesses, find talent, and obtain financing.
- Home Page: <http://www.microsoft.com/bizspark/>
- FAQ's: <http://www.microsoft.com/bizspark/faqs.aspx>
- Microsoft Ventures: <https://www.microsoftventures.com/>

Criteria

- Developing Software
- Privately held
- Less than 5 years old
- Making Less than US \$1 million in annual revenue

Key Benefits:

- **Software:**
 - BizSpark members receive access to Not-For-Resale software versions equivalent to those included in the Visual Studio Ultimate with Microsoft Developer Network subscription. BizSpark software is for design, development, test, and demo only. For the most up to date listing of this products click [products by benefit level](#) and then click **Visual Studio Ultimate with MSDN** tab for a representative list of products.
 - To download the software, go to [Microsoft Developer Network](#) site for the most up to date listing of our software products; to access any of this software, please ensure you are signed into your BizSpark account with the appropriate Microsoft Account. There is a product key section here: <https://msdn.microsoft.com/en-in/subscriptions/keys/>
- **Microsoft Azure**
 - BizSpark subscribers are eligible for the entire term of their BizSpark membership for a ₹9,100 monthly amount of Azure resources. Offer details: [BizSpark Azure](#).
- **Support**
 - Each start-up receives four technical support incidents, managed by Microsoft. Once you connect with [Microsoft Developer Network support](#), please provide them your BizSpark Subscriber ID. They will provide this service without a charge. In addition, you have the opportunity to [access technical resources, product training and business tools](#) for your start-up
- **Exclusive Offers:**
 - Exclusive offers for Bizspark members: <http://www.microsoft.com/bizspark/offers/default.aspx>

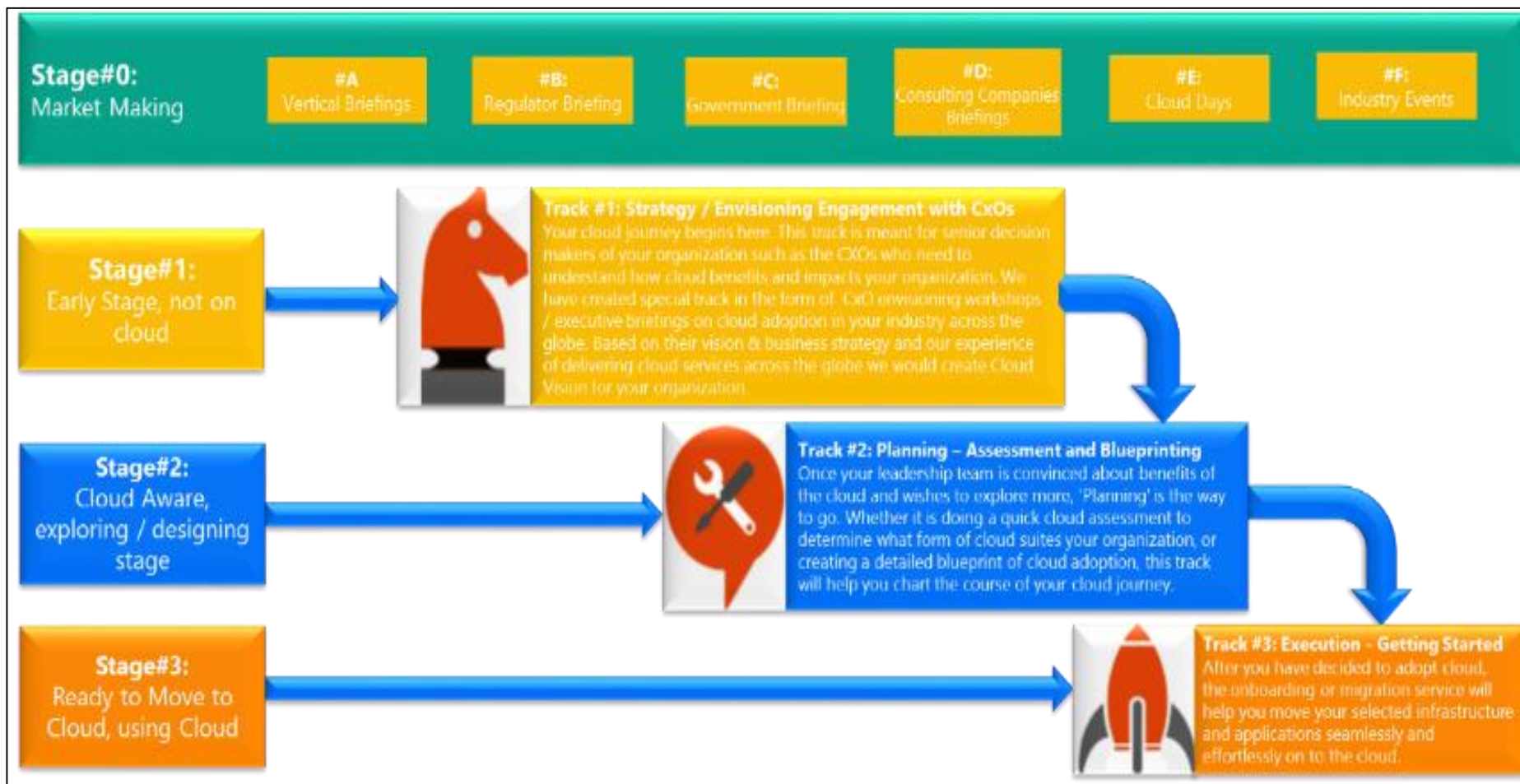
11. India Cloud Geo and Cloud Accelerator Program

In his first visit to India as Microsoft CEO, Satya Nadella announced in September 2014 that Microsoft will offer commercial cloud services – Azure and Office 365 – from local datacenters by the end of 2015. This is expected to accelerate public and hybrid cloud adoption significantly in India. Organizations in the country will benefit from data sovereignty, lower latency and geo redundancy with the availability of local infrastructure.

“Microsoft is deeply committed to helping people and organizations thrive in our mobile-first and cloud-first world – that’s why we are proud to offer our commercial cloud services through datacenters in India,” said Satya Nadella, CEO of Microsoft. “With more than 250 million Indians using Internet-connected devices today, there is incredible demand and opportunity for India with Microsoft’s cloud services.”

Microsoft will deliver the cloud services from 3 regions in India. With Microsoft’s hyperscale cloud services available from local regions, we expect large scale cloud adoption in customer segments with low penetration of cloud till now – BFSI, Public Sector, etc.

To assist key customers create cloud adoption roadmap, make cloud part of their IT strategy and adopt Microsoft cloud, we have developed “Cloud Accelerator Program”.



To assist key customers create cloud adoption roadmap, make cloud part of their IT strategy and adopt Microsoft cloud, we have developed “**Cloud Accelerator Program**”.

1. **Market Making** – getting our customers and key segments familiarized with cloud and its benefit. Also work government and regulators to create favourable environment for cloud adoption.
2. **Envisioning** – Workshops with customers CxOs to help them make Cloud as part of their organizational and IT Strategy, cloud led innovation and transformation.
3. **Cloud Assessment and Blueprinting** – Assess the IT environment of customer’s organization, create cloud clear roadmap for cloud adoption, including impact on regulatory landscape and cost benefit analysis.
4. **Migration and Cloud Adoption**–Perform migrations of existing workloads to cloud or help customers build new environments on cloud.

Customer can choose to enter at appropriate stage of the program based on their cloud readiness. These program modules are delivered by Microsoft services or by Microsoft chosen partners, working along with Microsoft to ensure highest level of delivery quality. Following is the partner ecosystem that supported Microsoft's India Cloud Geo and Cloud Accelerator Program:

1. **Assessment Partner** – consulting organization and system integration companies who can perform deep dive assessment of your IT environment.
2. **Migration Partner**– Partners who can migrate our on-premise, third party hosted or another cloud hosted applications to Microsoft Cloud – systems integrators and born in cloud companies.
3. **Application Partners**–Partners who can port your applications to cloud – whether they are standard out of box applications or customer line of business applications.
4. **Hosting Partners**–Partners from datacentre and hosting industry who can provide hybrid cloud and DR on Cloud solutions, using Microsoft Azure.
5. **ExpressRoute Partners**–Partners from telecommunication industry who can provide fast, secure and reliable connectivity to Microsoft Azure from your office, making hosting of business critical applications on Microsoft Azure possible.

More information about Microsoft's India Geo and Cloud Accelerator Program is available at:

<http://www.microsoft.com/india/datacenter/default.aspx#Our-Programs>

12. Microsoft Azure vs. Amazon Web Services

Wondering which cloud is right for you?

Microsoft Azure enables you to extend your existing IT investments into the public cloud and choose between infrastructure and platform services, providing you with the flexibility to choose the best solution for your needs. Find out why Azure is right for your organization.

Hybrid capability, your way

The Microsoft hybrid cloud leverages both on-premises resources and the public cloud without the need for complex workarounds or other products and vendors. Easily move workloads between your datacenter, service providers, and Azure—and build hybrid applications that leverage resources across all three. Unlike Amazon Web Service's cloud-only approach, Azure gives you lots of options for an effective hybrid cloud strategy without forcing you to snap to a rigid all-or-nothing approach.

- Find out why Microsoft Azure [is a more complete hybrid platform](#) than AWS
- See [why EasyJet](#) chose Azure to improve its service and scalability

Better together with IaaS and PaaS

In contrast to AWS, Microsoft offers a full range of cloud computing options, from Infrastructure-as-a-service (IaaS) to fully managed Platform-as-a-service (PaaS). Choose IaaS services and own the full stack and management duties, or deploy higher level PaaS services and focus on your applications while Azure handles the rest. PaaS services can reduce costs, complexity, and management effort, while providing seamless scalability and high availability.

- [Find out how Callaway](#) improved its IT scalability using Azure's IaaS and PaaS capabilities

True hybrid storage

Azure offers enterprise-grade storage solutions for on-premises, cloud and hybrid environments with enhanced security and governance. Unlike AWS, Azure's hybrid storage options offer cloud storage solutions that integrate with your datacenter, so you can take full advantage of elasticity and lower costs in the cloud while leveraging on-premises performance. [Learn more.](#)

- [See how Microsoft offers more hybrid storage options than AWS](#)
- [GF Health Products](#) used Azure to instantly expand storage into the Cloud

DevOps reimaged

Unlike AWS, Microsoft offers developers and IT Pros end-to-end integrated DevOps solutions for on-premises, hybrid, and cloud scenarios—solutions designed to be open and integrate easily with your existing DevOps tools. The new Azure Management Portal with Visual Studio Online and Application Insights makes collaboration easier between developers and IT Pros, increasing value through the application lifecycle. Start a project, check in and test code, set up continuous integration and deployment, and monitor application health and usage telemetry—all from a single place. [Learn more](#)

- [Find out how Xerox](#) leverages Microsoft to enhance its DevOps capabilities
- [Gartner Positions Microsoft in the Application Development Life Cycle Management \(ADLM\) Leaders Quadrant](#)

The identity platform that works harder

Microsoft has a long history of developing successful identity and access management technologies, and Active Directory is used by thousands enterprises of all sizes. While AWS's identity service only focuses on its own cloud, Azure Active Directory provides a comprehensive identity and access management cloud solution to help control access to thousands of Microsoft and non-Microsoft applications in the public cloud. [Learn more](#)

- [See why Azure offers a more comprehensive identity solution than AWS](#)
- [Find out how Walsh Group](#) gained unprecedented scalability with Azure Active Directory

First-class integration

Unlike AWS, Azure doesn't limit you to third-party integration solutions so you can take full advantage of the cloud at every layer of the stack. Microsoft BizTalk Server 2013 R2 and Service Bus work together to enable customers to extend on-premises integration solutions to the cloud, and Azure BizTalk Services provides business-to-business, enterprise application integration, and hybrid connection capabilities. Microsoft BizTalk is a leading enterprise-class solution with first-party integration across on-premises, infrastructure-as-a-service, and platform-as-a-service. [Learn more](#)

- [Find out how Azure](#) can seamlessly extend your existing integration platform into the Cloud
- [Gartner report on Microsoft's Integration Platform](#)
- [See how Mimeo boosted its revenue using Azure BizTalk Services](#)

Designed for security

Microsoft has unmatched experience running trusted online services around the globe, and operates groundbreaking centers of excellence on digital crime, security response, and malware protection. Azure was designed and built using the Microsoft Security Development Lifecycle, a comprehensive approach for writing more secure code, and our specialized teams of engineers use cutting-edge practices to stay ahead of emerging threats. [Learn more](#)

- [See how Readify took advantage of Azure's security capabilities](#)
- [Whitepaper: Security, Privacy and Compliance in Microsoft Azure](#)
- [Learn more about Microsoft's approach to Cloud Security](#)

Committed to cloud privacy

Microsoft leads the industry in its commitment to safeguard the privacy of customer data in the cloud. The Azure privacy policy prohibits the use and sharing of customer data for advertising and operational audits help ensure that Microsoft personnel don't have standing access to customer data. We're the first and only cloud provider to receive joint approval from the European Union's Article 29 Working Party for our strong contractual commitments to comply with rigorous EU privacy laws. We've also advocated for customers rights and greater transparency around government surveillance and legal requests for customer data. [Learn more](#)

- [Microsoft leads the way with adoption of the first international privacy standards](#)
- [Whitepaper: Security, Privacy and Compliance in Microsoft Azure](#)
- The [Electronic Frontier Foundation](#) gives Microsoft 6 stars in its 2014 report





13. Microsoft Azure India Case Studies

S.No.	Organization	Case Study
1	AppPoint	Software Vendor Speeds Development, Taps New Markets with Cloud-Based Solution
2	Business Intelligenze	Business Intelligence Firm Attracts New Customers with Cloud Solution
3	CentraLogic Consultancy	Cloud-based CRM ERP Helps Customers Organize, Conduct, Monitor, and Stay Focused
4	Cloud Munch	Solutions Firm Uses the Cloud to Speed Release Cycles and Cut IT Costs by more than 20 Percent
5	Cognosys Technologies	IT Firm Enhances Application Performance, Offers Scalability, Low Latency, and Compatibility to Customers with CogCache
6	Cognosys Technologies	Cognosys Facilitates Microsoft Azure Transitions in Minutes, Exponentially Reduces Go To Market Time
7	directdialogs	SaaS Based Cardless Loyalty Startup Accelerates Time-to-Market with Cloud Services
8	eDreams Edusoft	Educationalist Chooses Microsofts Public Private Cloud as its Platform for Personalized Learning

9	Enthrall Technologies Private Limited	Solution Provider Uses Cloud Platform to Generate Paperless MIS Reports Quickly for the Government
10	Essar Group	Multinational Conglomerate Improves Service Offerings with Cloud Power
11	FCB Ulka Advertisings	Advertising Firm Brings in Innovation and Transformation by Leveraging Hybrid Cloud Solution
12	Flick2Know Technologies	Solution Provider Uses the Cloud to Meet Customer Needs, Improve Insight, and Automate Sales Tracking
13	G7 CR	Cloud Enabled SMEs Avail Benefits of Human Resource Management Suite at Low Cost
14	Gameizon	Gaming Company Embraces the Cloud to Improve Service, Simplify IT, and Reduce Costs
15	Getit	Search Provider Embraces the Cloud, Scales Up Performance, Cuts Costs
16	Gradatim	ISV Moves Microfinance Platform to the Cloud, Shortens Deployments by 84 Percent
17	Gradient Networks	Software Firm Increases Performance, Minimizes Costs with Online Service for Mobile Recharge Outlets
18	Icertis	Technology Firm Transforms Business with Scalable Cloud Solution
19	ICICI Lombard	Financial Services Major Prepares for the Future with Microsoft Azure, Bets on Hybrid Cloud
20	Indiaplaza	Online Retailer Scales for Demand, Improves Latency by Using Cloud Services
21	iNube Software Solutions	Product Company Adopts Cloud Services, Saves Customers 20 Percent in Costs
22	MeritTrac	Skills Assessment Company uses Cloud to Launch Innovative Solution for Digital Distribution and Verification of Convocation Certificates
23	Mobius Knowledge Services	Quickly Acquire, Analyze and Discover Trends in Big Data On Microsoft Azure Delivers Competitive Intelligence to Retailers
24	Nanobi Data and Analytics	App Store in the Cloud Democratizes Analytics Adoption Across Businesses
25	Oztern	Technology Provider uses Cloud to Offer a Comprehensive eLearning suite, Reduces IT Infrastructure Requirements by 70 Percent

26	Paramatrix Technologies Pvt Ltd	IT Services Firm Adopts Cloud Services, Reduces Costs by 25 to 35 Percent
27	QuantumID Technologies	Enterprise Mobility Tracking Solutions Provider Grows Business with Cloud Computing
28	Sportingmindz Technology	Product Development Company Reduces Costs, Achieves On-Demand Scalability with Cloud Solution
29	Swaas Systems	Services Firm Builds Customer Equity and Sales with a Cloud-Based Solution for Pharmaceuticals
30	Symphony Services	Software Firm Expands Opportunities, Extends Cloud Services to Customers
31	United Mobile Apps	Technology Developer Gains Confidence to Scale Without Worrying About Initial Investment

14. Microsoft Azure ISV App wins

<p>Acuvate-SeeMe</p>  <p>To Know More</p> <p>SEEMe App has been specifically designed to help organizations with the following issues: 1. Time to get Information for always on Business 2. SAP Reports not UX/UI Friendly 3. Senior Management and Field Personnel On the move. 4. Tracking Key KPI's and Feeling the Pulse of Business 5. Need for Costly Business Intelligence Tools for Mobile BI. Salient Features: Role based reports, Fetch data from LOB systems, Drill down capability, Ability to chat/call any user using either Skype/Lync, Department wise reports, Ability to add favourites, Updates using Live tiles.</p>	<p>Audit Manager</p>  <p>To Know More</p> <p>The Audit Manager app from RBEI helps auditors perform audits of vendors/suppliers etc. The app allows creation of audits based upon predefined templates and the ability to import questionnaires and export audit reports</p>
<p>BALM- Asset Liability Management</p>  <p>To Know More</p> <p>BALM is an ALM solution that provides visibility to interest rate, market and liquidity risk and return at a bank level making it easier for banks to control risk and rewards. Banks can monitor and analyse various</p>	<p>BI Analytics Solution</p>  <p>To Know More</p> <p>The analytics tree is a BI Analytics app that provides solution to various business problem for different domain.</p>

parameters to help maximize profitability and capital, and always have just enough liquidity to meet current needs, without exposing bottom line to risk of substantial losses. Following are various parameters that can be monitored through BALM: Return (Earning Per Share, Net interest margin, Return on equity, Return on assets), Credit Risk (Non-performing loans to total loans), Interest Rate Risk (Earning at risk, Economic value of equity, Market value of investment at risk), Liquidity Risk (Liquidity gap, cost to close, MCO), Capital (Risk weighted assets, Available capital, CRAR, Leverage ratio).

BizApp Studio



To Know More

AppsOnMobile is AppPoint's smart client interface for solutions developed using its business application infrastructure BizAPP Studio and AppsOnAzure. This application infrastructure offers a unique point and click approach to develop and deliver multi device compatible cloud enabled business applications. With AppsOnMobile, these applications are enabled for Offline support with intelligent synchronization framework, Service aggregation and mobile workflow support, Controlled delivery of applications and relevant data, Platform specific interface ensuring optimal user experience and seamless device integration, Accessing information while you are offline and take actions.

chARM EHR - Zoho Medical Mine



To Know More

ChARM EHR is an Integrated Electronic Health Records, Clinic Management, Lab, Pharma and Billing solution for small and medium-sized clinics and nursing homes. ChARM EHR is cutting-edge, technologically innovative and cloud based solution build of ZOHO cloud platform with an intuitive user interface. ChARM is mobile ready - works on popular tablet browsers. Also packaged are native apps addressing specific needs such as Patient Kiosk, Appointment Scheduler, Chart Note etc. ChARM is standards compliant - HIPAA & HITECH and Meaningful Use certified

eKYC Account Opening



To Know More

Sales force automation for bank representatives in the field. Allows agents to open new customer accounts, and complete KYC verification using documents or Aadhaar

Envy Dine



To Know More

Envy Dine is a tablet based restaurant solution that provides restaurant's menu on a table for order taking. Features: Multi outlets/restaurants of a hotel On-the-fly menus for different outlets/restaurants of a hotel Steward can take orders, see previous orders, current order, view changes made and approve newest order Tightly integrated with IDS PMS to care of complete order taking process.

Fortune next ERP



To Know More

Leading solution provider for Hospitality industry. 3200 customers across 40 countries. Group companies are RoomsTonight, IDSNext, IDSFortune and RezNext. The mobility app name is Envy Check-In - is a Front Desk Solution to provide front desk guest check-in solution for hotels. • Envy Check-in is a truly mobile app from the house of IDS NEXT • Sleek app that allows for simplified and fast guest check-in • Green application designed to help your hotel save paper and costs from printing of guest registration forms • Do away with storage issues related to guest registration forms • Secure app that allows hotels to retrieve guests details quickly • Personalize check-in for frequent and regular guests • Excellent solution for hotel properties across segments to bring down costs

Gieom -Operations and Learning Manual



To Know More

GIEOM is a Cloud deployed (or in-house, based on your choice) Business Excellence software product that enables Knowledge Workers collaborate with colleagues for Operational and Business improvements and manage this information anytime, anywhere on any device.. The GIEOM software is a comprehensive Business Excellence tool which allows businesses to manage changes to their Business Paths, Regulations & Policies, Skills & Competencies and Business Performance. It enables employees monitor progress using personalised Business Operations analytics generated intelligently by the software in their area of responsibility and create targeted actions for course correction and interventions.

GlobalSpace – GloEdge



To Know More

GloEDGE is "Enhanced digital & graphics experience" enabling platform for pharma enterprise. Its a one stop content management & analytics platform which helps a Pharma company manage their promotion & marketing strategy. GloEDGE is the strategic aid to top management of Pharma company where as its an enhanced customer interface tool for front line sales person.

GoDB-MEAP



To Know More

GoDB Tech is a software product firm specializing in mobility solutions for enterprises - to mobilize business processes outside their corporate walls. Mobile solutions are built using the proven Mobile Enterprise Application Platform (MEAP) - GoDB Mobile platform, which powers business critical applications at many Fortune 500 companies. The MEAP platform has been deployed at over 250 Indian enterprises like Unilever, ITC, Reliance Capital, ICICI Group companies etc.

Gramener Visualization Platform



[To Know More](#)

Gramener provides a visualization platform for visualizing huge quantities of data in easy to understand graphs etc.

Harness Touch (Commercial)



[To Know More](#)

Harness Touch's Touch-on-Cloud is a versatile learning operating system that can transform classrooms into collaborative learning centers with high learning outcomes. Touch-on-Cloud revolutionizes education delivery through smart engineering along 3 themes - Create, Connect and EnGauge It is a learning operating system that Makes classrooms with student devices collaborative, efficient and engaging Blends proprietary and open content in a jiffy Facilitates social learning interactions between students, teachers and parents Powers distance learning through best-in-class video-conferencing Makes content available on the cloud for use at home

Hotel Management Solution



[To Know More](#)

ShawMan is a software products development organization from India where it is a name to reckon with in the Hospitality & Food Services industry. An ISO 9001-2008 and SEI CMMI Level 3 certified company, and the only Indian software company in Hospitality vertical to be PA-DSS certified too.

Learning management System



[To Know More](#)

Excellent Azure based learning management system targeting comprehensive learning management, trainings, course scheduling and progress tracking for employees. Also integrates an HR module to enable Skill matrices , resource alignment and training calendars creation

McGraw Hill App



[To Know More](#)

McGraw Hill Test Assessment offerings for competitive exams in India. App is feature complete with UX overview and build below.

Mobile Field Force Management



[To Know More](#)

The app supports all field force and sales force automation scenarios across vertical like Banking, FMCG , Services and insurance.

Moneyware Integra



[To Know More](#)

Sales force automation for wealth management sales agents. Allows field employees to demo product catalogues, CRM and asset management and tracking through their Windows 8 tablet

Pharma Solution



[To Know More](#)

Sales force automation for pharma sales agents in the field. The application allows field agents to demo product catalogues, manage customer appointments, CRM, CLM on their handheld devices

Synoverge-CEODashboard



[To Know More](#)

Popular dash boarding solution. Gives 360 degree view of P&L, core action items, projects, KPIs for each business etc.

TabMagic



[To Know More](#)

It is a sales enabling software application for L.I.C. agents. It empowers agents to give high quality and instant advice to their customers. They can delight their customers through its striking presentations of insurance solutions.

Transportation Management



To Know More

Icertis Transportation Management is a robust set of capabilities that helps organizations address transportation challenges

VaahanCheck



To Know More

Vehicle Insurance Preinspection app. Presents tremendous opportunities for tablet sales. The app developed for Win 8.1 platform has the following key features: •VC APP has been built on the concepts of operation and cost optimization and gives an edge over current manual – paper based survey's conducted by Insurance agents. •It has Motor Pre-Inspection Lead capturing module with pre-Inspection Agency Management. •Rule engine to route and assign lead to agency as per pin/city and weightage of agency. •Assign lead to another agency if first agency is not responding or agency system is down. •Easy to integrate this with Insurance company and Agency system. •Pre-Inspection using Mobile device with Geo-Location and Inspection time capturing. •SMS & email alerts for Lead creation & assignment, Lead status tracking, etc. •Various Lead Reports, Option to convert Pre-Inspection Report to PDF format, with Vehicle Photos. •The hub page gives quick information to the assigned agent. •Agent can share the feedback or memo's via emails, SMS alerts and make a call to customer using Tablet. Following features are unique to the Windows 8.1 app.

VAutoMate



To Know More

This App enables the Sales executives to deliver results quite literally with their fingertips. The App allows users (Consumers and Dealer sales exe to accessorize the vehicles with scores of accessories for their choice of cars and help them visualize the look and feel. The product Price and part numbers linked thru DMS (Dealer Management System) and the Order sent directly to DMS. The app has its in-built intelligence to suggest products and a cool Stylometer that helps in getting your style quotient up while you fit accessories. The App also doubles up as a Dash-board for the executives who can avail training via the knowledge management module as well as follow up with their sales enquiries.

VRtical



To Know More

Real-estate tablet solution from vector form covering following feature areas. • 360 experience centres in Sales office. • Sales Scenarios (Product offering and enquiry & Booking and Customize "Your Home/Office") • Customer Scenarios (project milestone history of particular unit/ payment history/Scheduled invoices) • Resident Scenarios (Home Automation; Maintenance schedules/Info/support ticket; concierge - Reserve a spa time, or tennis/squash/racketball court) This opportunity and application has been reviewed by the Devices field team and approved to be bundled to enable tablet sales in the Hospitality industry EPG and CA accounts.

Verticalised CRM solution on Dynamics platform for Insurance sector



[To Know More](#)

They are the largest partner for Pivotal which is widely used in banks in India. They are now building solutions on Microsoft CRM Dynamics and we believe a Windows 8 app would go a long way to differentiate our service.

VBond Vita



[To Know More](#)

Vbond Vita is World Class Clinic Management System on Cloud for Doctors and Clinics on Tablets. Per inputs from the field Device team it is relevant to the CA customers as a W8 commercial solution. The solution is sold through associations and directly to customer organizations. With Vita, Doctors can "Carry their Clinic" Anytime, Anywhere to manage patients, EMR, e-prescription, Referrals, Appointments, Lab Management etc. Vbond Vita has comprehensive features to manage customer relationships for Hospitals, Diagnostic Centres and Health & Wellness Centres In the Current Scenarios, a Standard Clinic Management System with Data Storage facilities will cost anywhere from 3 Lacs to 15+ Lacs. In addition to cost, there is significant running maintenance, IT expertise, down-time management and so on. Along with the above considerations, Transformation of a regular Clinic to an e-Clinic will further need the Doctors to adapt and learn the New Software Systems. These procedures will deviate the Doctor from his regular practice and in many cases are not fully utilized. With occasions of downtime and IT failure, the Clinics tend to resort to normal practices and the Automation solutions become redundant.

Wide Angle



To Know More

WideAngle is a Closed loop marketing and Customer Relationship Management product for Pharma Companies (users Medical Representatives) - aimed at providing a scientific approach to solve pharma sales and marketing challenges. WideAngle helps build customer equity by understanding customer preferences across high impact channels. WideAngle offers a unique delivery mechanism for product messages with the power of tablets and cloud computing. You can show appealing and relevant content (Pharma product info/videos) anytime anywhere customized to a doctor based on his content consumption pattern. You can draw instant feedback from a visit on the product messaging and know what message works best for you. WideAngle has been designed keeping the medical representative & the doctor interaction in complete context apart from the business owner's interest as the backbone. Marketing organization inside a pharmaceutical company were never to understand what was happening other than unstructured surveys and review meetings with the sales team. WideAngle innovates a newer set of metrics, hitherto unavailable in the world. Various app features: 1. Tour Plan for Medical Representative (MR) 2. MR-Doctor, Chemist Mapping and selection 3. Doctor-Product mapping and digital asset display based on region, specialty, category, campaign 4. Video Streaming – Make your content any time anywhere, online or offline and with an option to protect your product message IP 5. Deeper insights of your Doctors - Doctor analytical capture like face time with doctor, time spent on a product content, like and dislike on product message etc. 6. Daily Call Report Auto-Fill using doctor data and analytical data.

CRM Next



To Know More

The app has been specially designed to help organizations with issues related to accurately tracking leads and opportunities, scheduling appointments, following up with contacts, managing tasks, tracking payments and updating quotes thus providing 360 degree view of their CRM operations. CRMNext Dashboard App has been specifically designed to help organizations with the following issues: • Accurately track leads and opportunities • Schedule appointments • Follow up with contacts • Manage tasks • Track payments and update quotes Following are key-features of the solution: • 360 degree view of CRM operations • Plug & Play Facility to various environments • Easy to navigate through drill down features to provide a top – down information flow • Flexibility of managing various customer relationships and business aspects on-the-fly • Built on proven technology platform

DoCircuit



[To Know More](#)

300+ colleges globally across 150 countries with a user base of 70000 users already on board. The application popularity can be envisaged from the user base growth rate is 20%. Target segment is K11 K12 and STEM. For the current base more than 60% traffic comes from India. Top users are IIT Private colleges and publishers like Pearson and McGraw Hill as well as online learning providers like IEEE. Already a Azure enabled solution on the server side this is a great fit for devices as the simulator is a mix of offline and online functionality.

EBSiNotify



[To Know More](#)

EBSiNotify extends the Oracle EBusiness suite on to mobile devices by providing a notification workflow.

15. Frequently Asked Questions

Microsoft Azure Purchasing FAQs:

- <http://azure.microsoft.com/en-in/pricing/faq/>

Microsoft Azure VM Pricing FAQs

- <http://azure.microsoft.com/en-in/pricing/licensing-faq/>

Microsoft Azure Store FAQs:

- <http://azure.microsoft.com/en-in/marketplace/partner-program/>

Microsoft Azure Support FAQs:

- <http://azure.microsoft.com/en-in/support/faq/>

Microsoft Azure Trust Centre FAQs

- <http://azure.microsoft.com/en-in/support/trust-center/faq/>

MICROSOFT RELATIONSHIP

• **How can I swap Confidential Information with Microsoft?**

- If you are a member of the Microsoft Partner Network, you will have agreed to the following T's & C's. Section 7 contains the confidential terms.
- If you would like specific terms and conditions, your Microsoft contact can provide a specific NDA if you provide Company Name, Address, Authorised Signatory and Job title.

SUBSCRIPTIONS

- **Can I move services between subscriptions?**

- Yes it is possible to move the services deployed under one EA subscription to another EA but you need to make sure you are the service administrator for both subscriptions.
- To do this, sign into management portal <https://manage.windowsazure.com> and create a billing support case.
- The process is called Data Migration is subject to certain terms and conditions and also depends upon the kind of services that are deployed. There are some services that can be migrated, some that do not support migration and some that need to be migrated manually. Please be aware that a partial migration is not possible, that is migrating a few services to the destination and retaining the rest in the source.
- Here are some keys things to remember:
 - The destination subscription should be empty for a normal migration otherwise we need to perform a forced migration.
 - The Service Administrator should be same for both source and destination.
 - Tenants in Preview cannot be moved.
 - The SQL Databases if any, should be migrated manually. We will provide the steps to do the same.
 - Deprecated Services will not be migrated.
 - Migration of Caching (older version) will be done by engaging the Ops team.
 - Active Directory will not be migrated.

- **What is the MICROSOFT AZURE ENTERPRISE PORTAL?**

- The EA Portal will allow you to manage your usage, accounts, and pricing.
- Annual invoice for monetary commitment and maximum of 4 quarterly overage invoices
- Summary level visibility of service usage and costs across all accounts and subscriptions
- Periodic usage notifications (daily, weekly or monthly) to inform the customer of their remaining monetary commitment OR quarterly overage
- Ability to download detail usage records and view cost at the account and subscription levels. Useful to note on the EA Portal:
- Demo videos of the EA Portal:

[Enterprise Azure Overview - Aug 16](#)

[Role of Account Owner Direct or Indirect Oct 17](#)

[Role of the Direct Customer Ent Admin Oct 17](#)

Appendix 1 – Useful Tools and Third Party Tools and Enablers

Attached are some common technologies deployed with Microsoft Azure. Some of these are available to deploy via the Microsoft Azure Marketplace: <http://azure.microsoft.com/en-in/marketplace/>

In the Microsoft Azure Store you can Discover, purchase, and provision application and data services from Microsoft partners. These services can be combined with Microsoft Azure services from Microsoft to build powerful cloud solutions (and managed through the Azure management portal with service usage included on a single bill from Microsoft).

<p>Barracuda Firewall <i>"Protecting Azure IaaS/PaaS application"</i></p>	Barracuda	<ul style="list-style-type: none"> If a business has an application hosted on Microsoft Azure, it will at some point be exposed to the internet in order to be commercially useful. The public internet brings with it both customers and attackers. As the value of the data within an application increases, so does its attractiveness to attackers. Use Barracuda Networks Web Application Firewall virtual device to protect Azure IaaS web servers or PaaS web roles 	<ul style="list-style-type: none"> http://blogs.msdn.com/b/msftashwin/archive/2014/01/28/how-to-setup-and-protect-an-azure-application-with-a-barracuda-firewall-v3.aspx
<p>New Relic <i>"Azure Application Performance"</i></p>	New Relic	<ul style="list-style-type: none"> New Relic is the all-in-one web application performance tool that lets you see performance from the end user experience, through servers, and down to the line of app code. 	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/marketplace/partners/new-relic/new-relic/
<p>Azure Operational Insights</p>	Microsoft	<ul style="list-style-type: none"> Gain deeper insight into your environments by: <ul style="list-style-type: none"> Collect, search for and visualize machine data, Manage and forecast the capacity of your infrastructure, Assess the safety and security of your servers Track server configuration changes Proactively avoid workload problems Ensure that your servers are up to date 	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/services/operational-insights/
<p>AzCopy <i>"Uploading / Downloading files to Azure Blob Storage"</i></p>	Microsoft	<ul style="list-style-type: none"> One of the frequent requests we receive is for a simple way to upload or download files between Microsoft Azure Blob Storage and their local file system. We're pleased to release AzCopy (Beta Version), which is a command line utility which allows Microsoft Azure Storage customers to do just that. The utility is designed to simplify the task of transferring data in to and out of a Microsoft Azure Storage account. Customers can use this as a standalone tool or incorporate this utility in an existing application. 	<ul style="list-style-type: none"> http://blogs.msdn.com/b/windowsazurestorage/archive/2012/12/03/az-copy-uploading-downloading-files-for-windows-azure-blobs.aspx

Migration Tools

<p>Microsoft Virtual Machine Converter Solution Accelerator <i>"Convert VMware-based VMs to Hyper-V®-based VMs"</i></p>	<p>Microsoft</p>	<ul style="list-style-type: none"> Convert virtual machines and disks from VMware hosts to Hyper-V hosts and Microsoft Azure or convert computers and disks to Hyper-V hosts. This page contains only setup files and a list of Windows PowerShell cmdlets that are related to MVMC. For a detailed document, see Microsoft Virtual Machine Converter 3.0 	<ul style="list-style-type: none"> http://www.microsoft.com/en-in/download/details.aspx?id=42497
<p>Azure Migration Accelerator <i>"Move physical, VMware, AWS and Hyper-V virtual machines to Azure"</i></p>	<p>Microsoft</p>	<ul style="list-style-type: none"> Migration Accelerator (MA), for Azure. Spawned from the technology of our InMage acquisition the MA is designed to seamlessly migrate physical, VMware, Amazon Web Services and Microsoft Hyper-V workloads into Azure: <ul style="list-style-type: none"> Migration cutovers to Azure in as little as minutes Automated asset discovery and migration Auto-provisioned target Azure VM's Near zero downtime and data loss Multi-tier application support Automated networking reconfiguration 	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/features/migration-accelerator/ http://azure.microsoft.com/blog/2014/09/04/introducing-microsoft-migration-accelerator/
<p>Azure Websites Migration Assistant <i>"Move Web sites to Azure"</i></p>	<p>Microsoft</p>	<ul style="list-style-type: none"> Azure Websites Migration Assistant will analyze your IIS installation and identify which sites can be migrated to the cloud, highlighting any elements that cannot be migrated or are unsupported on the platform. After the installation has been analyzed, the Migration Assistant will also create the websites and databases required to support your sites. It then moves on to migrating your configuration and content over to the newly created websites and databases in Azure. 	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/downloads/migration-assistant/?clid=0x409
<p>Vision Solutions Double Take <i>"Convert VMware to Hyper-V and VMWare to Azure"</i></p>	<p>Vision Solutions</p>	<ul style="list-style-type: none"> Double take Move tool from Vision can migrate VMware to Hyper-V and VMware to Azure. 	<ul style="list-style-type: none"> http://www.visionsolutions.com/Products/DT-Move.aspx
<p>AWS to Microsoft Azure Migrator <i>"Move from Amazon VMs to Azure VMs"</i></p>	<p>Dot Net Solutions</p>	<ul style="list-style-type: none"> Azure Migrator is a free tool, developed by DOT NET Solutions and it can pull in VMs to Azure from anywhere, including AWS, in a few simple and easy steps (see: http://miteshc.wordpress.com/2014/03/20/migratevm-fromaws-toazure/) 	<ul style="list-style-type: none"> http://www.azuremigrator.net/
<p>Migration Assistant – Oracle to SQL Server or SQL Database on Azure</p>	<p>Microsoft</p>	<ul style="list-style-type: none"> Microsoft SQL Server Migration Assistant (SSMA) for Oracle is a tool to automate migration from Oracle database to SQL Server and Azure SQL DB 	<ul style="list-style-type: none"> http://www.microsoft.com/en-in/download/details.aspx?id=43689
<p>Migration Assistant – IBM DB2 to SQL Server or SQL Database on Azure</p>	<p>Microsoft</p>	<ul style="list-style-type: none"> Microsoft SQL Server Migration Assistant (SSMA) for DB2 is a tool to automate migration from DB2 databases to SQL Server and Azure SQL DB 	<ul style="list-style-type: none"> http://www.microsoft.com/en-in/download/details.aspx?id=45296
<p>Argentum</p>	<p>Fedr8</p>	<ul style="list-style-type: none"> You understand the value of cloud computing and would like to move your legacy applications to the Cloud, but you feel they are just too old, too complex and it is just too much risk to move them. Argentum is the fastest, most secure and cost effective way to get your complex legacy applications into your chosen cloud platform. It helps you integrate, secure and optimize your applications into your chosen cloud, enabling you to reduce your expensive legacy operating costs, reduce risk and decrease time to value. 	<ul style="list-style-type: none"> http://argentumanalytics.com/

Appendix 2 – Third Party Solutions

Attached are some common technologies deployed with Microsoft Azure. Some of these are available to deploy via the Microsoft Azure Marketplace: <http://azure.microsoft.com/en-in/marketplace/>

	SAP	Oracle	IBM
Landing Page	http://azure.microsoft.com/sap/	http://azure.microsoft.com/oracle/	http://news.microsoft.com/2014/10/22/msibmpr/
Product Included	<ul style="list-style-type: none"> SAP Business Suite Software (Windows) SAP Business All-in-One (Windows) SAP NetWeaver Application Server ABAP (Windows) SAP HANA Developer Edition (SUSE, Linux) 	<ul style="list-style-type: none"> For the latest list of “License included” images see: http://msdn.microsoft.com/en-in/library/dn439770.aspx 	<ul style="list-style-type: none"> For the latest list of BYOL: <ul style="list-style-type: none"> http://www-01.ibm.com/software/passportadvantage/licensing_for_Microsoft_Azure.html#byoshtable
3rd Party Licence Model	<ul style="list-style-type: none"> Customers who have SAP licenses can use them to deploy SAP software in Microsoft Azure. 	<ul style="list-style-type: none"> Licensing Oracle Software in the Cloud Computing Environments <ul style="list-style-type: none"> http://www.oracle.com/in/corporate/pricing/cloud-licensing-070579.pdf Use a license-included VM image - Microsoft provides pre-configured, Windows Server based VM images that include licenses for Oracle Database and/or Oracle WebLogic Server, and images that include the Java Development Kit. Bring your own license, use a pre-configured VM - Oracle offers pre-configured Oracle Linux images with Oracle Database and/or Oracle WebLogic Server to make it simpler for you to get started. Bring your own license, build your own VM - Start a Windows Server or Oracle Linux virtual machine; install and configure the additional Oracle software yourself. 	<ul style="list-style-type: none"> IBM - Bring Your Own Software and License (BYOSL) and Bring Your Own License (BYOL) - Licensing terms: <ul style="list-style-type: none"> http://www-01.ibm.com/software/passportadvantage/licensing_for_Microsoft_Azure.html
Pricing	<ul style="list-style-type: none"> Customers will consume and pay for the underlying Microsoft Azure services as with any other deployment. 	<ul style="list-style-type: none"> http://azure.microsoft.com/en-in/pricing/details/virtual-machines/#oracle-software Customers will consume and pay for the underlying Microsoft Azure services as with any other deployment. Free trial, MSDN, BizSpark, and Microsoft Partner Network member benefits (monetary credits) don't apply to license-included Oracle images, which are billed separately 	<ul style="list-style-type: none"> Customers will consume and pay for the underlying Microsoft Azure services as with any other deployment.

Support	<ul style="list-style-type: none"> • SAP will provide support for SAP products and services, • Microsoft will provide support for Microsoft products and services, including Microsoft Azure platform services • For SAP HANA Developer Edition, support is provided through community support. 	<ul style="list-style-type: none"> • For customers who bring their own Oracle licenses and are on support, Oracle will deliver support directly to the customers running Oracle software on Windows Server Hyper-V and Azure. • For the "license included" offerings, click here for more details: <ul style="list-style-type: none"> • http://dl.msopentech.com/license/oracle/support-EN.html 	<ul style="list-style-type: none"> • For customers who bring their own IBM licenses and are on support, IBM will deliver support directly to the customers running IBM software
Further Information	<ul style="list-style-type: none"> • Running SAP Applications on the Azure: • http://blogs.msdn.com/b/saponsqlserver/ • SAP on Microsoft Azure • http://scn.sap.com/docs/DOC-56602 • SAP Notes for Windows and Linux in Public Cloud (IaaS) Environments • http://scn.sap.com/docs/DOC-56601 • Frequently Asked Questions: Microsoft Azure • http://scn.sap.com/docs/DOC-56406 	<ul style="list-style-type: none"> • Oracle's Landing page • Oracle VM Pricing • Oracle's Licensing mobility page 	<ul style="list-style-type: none"> • http://msopentech.com/blog/2014/11/04/ibm-websphere-mq-db2-now-microsoft-azure/

Appendix 3 – Moving to the Cloud

- **What part of my application or service do I move to the cloud?**

- We have seen a huge increase in Software companies / ISVs moving applications and services to the cloud. Where to start is often a hurdle in itself, and which one is right for you, is largely dependent on:
 - Data requirements
 - Compliance requirements
 - Your Customer Acceptance
 - Economics of running your solution into the cloud
 - Time, costs and resources
- Here is a list of the approaches we have seen to date::

	Approach	What is it?
1.	Lift and Shift to IaaS	<ul style="list-style-type: none"> • Move an existing service or application running in a virtualized environment to Microsoft Azure IaaS.
2.	Move a specific geographic workload to Azure	<ul style="list-style-type: none"> • You may have existing workloads that are able to run in your own DC, or 3rd party DC, that are limited by the latency issues related to geographically dispersed customers. • Moving certain geographies to Microsoft Azure allows you to expand your global footprint to service these clients better.
3.	Burst High workloads to Azure	<ul style="list-style-type: none"> • Burst your key compute workloads to Microsoft Azure to benefit from scalable and economic compute power
4.	Move a functional requirement to Azure	<ul style="list-style-type: none"> • Move a specific functional requirement to Azure. For example, you could move your unstructured data requirements to Microsoft Azure "storage as a service".
5.	Move a product module to Microsoft Azure	<ul style="list-style-type: none"> • Re-platform a module of application to test client needs, wants, and to gain experience of running a cloud service
6.	Re-Platform to PaaS	<ul style="list-style-type: none"> • Re-platform the entire application to PaaS to benefit from full cloud computing capabilities

- **Impact on Moving to the cloud on your IT (Application Management, Incident Management, Monitoring and Control and Infrastructure Management)?**

- Once you make a decision to move to the cloud, you need to understand the potential implications on how you operate the service with your client:

	What is it?
What Remains?	<ul style="list-style-type: none"> • User Access, User Provisioning, Diagnosing ACL issues • Data integrity and Lifecycle • Regulatory requirements • Compliance • Monitoring • Capacity decisions
NEW Accountabilities	<ul style="list-style-type: none"> • Bill management / reconciliation / audit • Charge-back • Budget management • Single Sign-On • Deployment, Versioning and environment management • Training