



Azure Fundamentals

Lesson Objectives

At the end of this module you will be able to:

- ✓ Understand the fundamentals of Microsoft Azure
- ✓ Get an overview of Azure services
- ✓ Get an idea of Azure portal and its navigation



Microsoft Azure



- Microsoft Azure is a comprehensive cloud platform that enables solutions based on individual challenges and needs - with the benefits of a public cloud service.
- Azure can be described as a growing collection of integrated cloud services that developers and IT professionals can use to build, deploy, and manage applications through a global network of datacenters.



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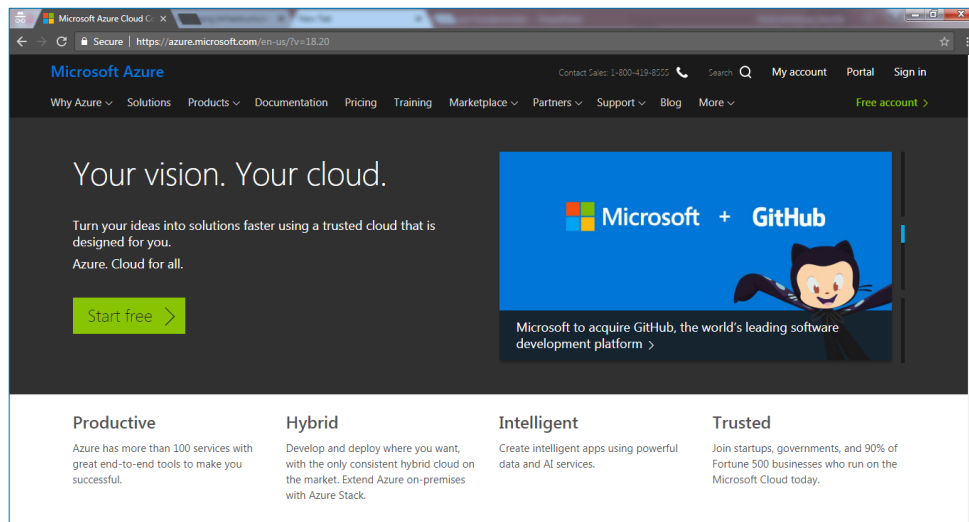
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It is introduced as Windows Azure and renamed as Microsoft Azure in 2014.

With Azure, you get the freedom to build and deploy wherever you want, using the tools, applications, and frameworks of your choice. You can store data using relational SQL databases, NoSQL table stores, and unstructured blob storages, and optionally use Hadoop and business intelligence services to data-mine it. You can take advantage of Microsoft Azure's robust capabilities to enable scalable distributed applications, as well as deliver hybrid solutions that run across a cloud and on-premise enterprise environment.

Microsoft Azure can provide a bridge from your data center to the cloud.

Getting Started with Azure



The evaluation process works with Azure is that you'll receive 200 dollars in service credit that you can apply to any Azure service. The limitation is that it expires in one month, so you'll want to get started kicking the tires, so to speak, as quickly as you can.

Besides the public Azure trial, there are other ways to obtain credit for Azure services. For instance, if your business has a Microsoft developer network, or a MSDN subscription, there'll be built-in service credit there, depending upon your subscription level.

You'll also need a credit card. Now, note that the credit card is used simply for identity verification. Over the course of the month, you'll not be charged at all because you'll be using your \$200. If you go through the \$200 within a month, then any services you have running will stop, but you will not be charged. Even at the end of your trial, your account will not be automatically switched to a pay-as-you-go model.

Azure Datacenters



Source: azure.microsoft.com

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Regions

A region is a set of datacenters deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network.

With more global regions than any other cloud provider, Azure gives customers the flexibility to deploy applications where they need to.

Geographies

A geography is a discrete market, typically containing two or more regions, that preserves data residency and compliance boundaries. Geographies allow customers with specific data-residency and compliance needs to keep their data and applications close. Geographies are fault-tolerant to withstand complete region failure through their connection to our dedicated high-capacity networking infrastructure.

Availability Zones

Availability Zones are physically separate locations within an Azure region. Each Availability Zone is made up of one or more datacenters equipped with independent power, cooling, and networking. Availability Zones allow customers to run mission-critical applications with high availability and low-latency replication.

Confidence in the trusted cloud



- Azure has more comprehensive compliance coverage with more than 70 compliance offerings



ISO/IEC



CSA/CCM



ITAR



CJIS

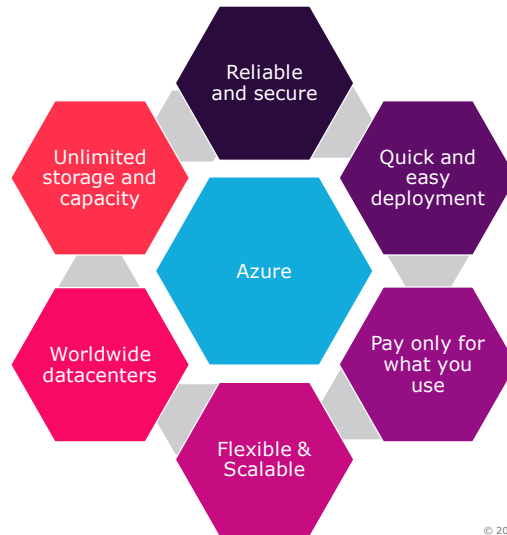


HIPAA



IRS
1075

Benefits of Microsoft Azure

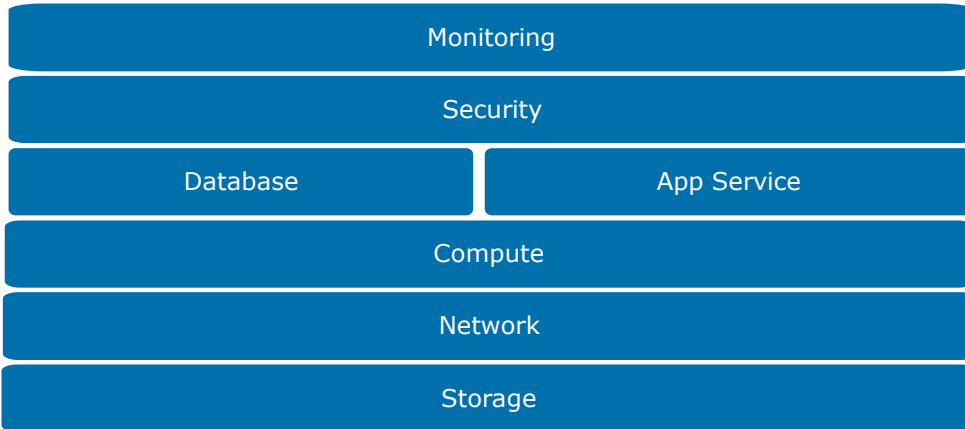


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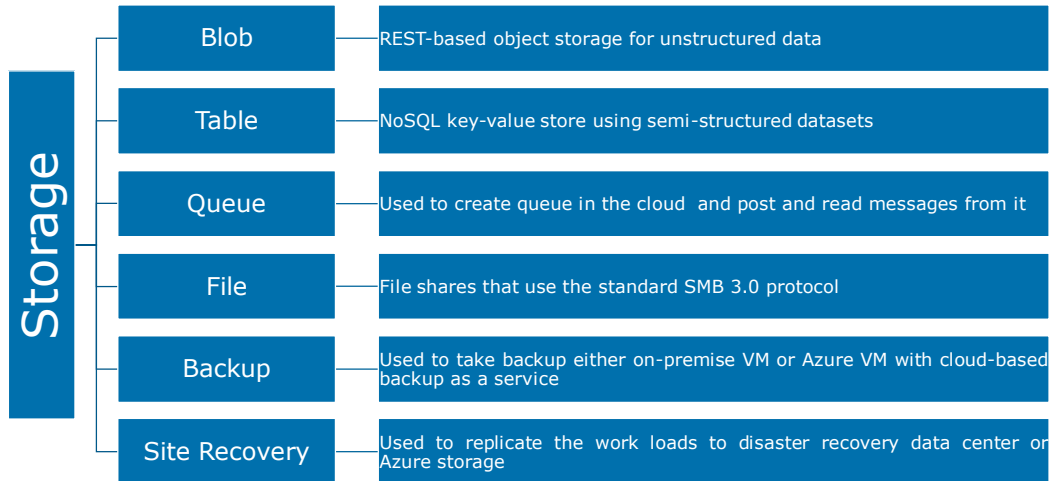
Azure Services



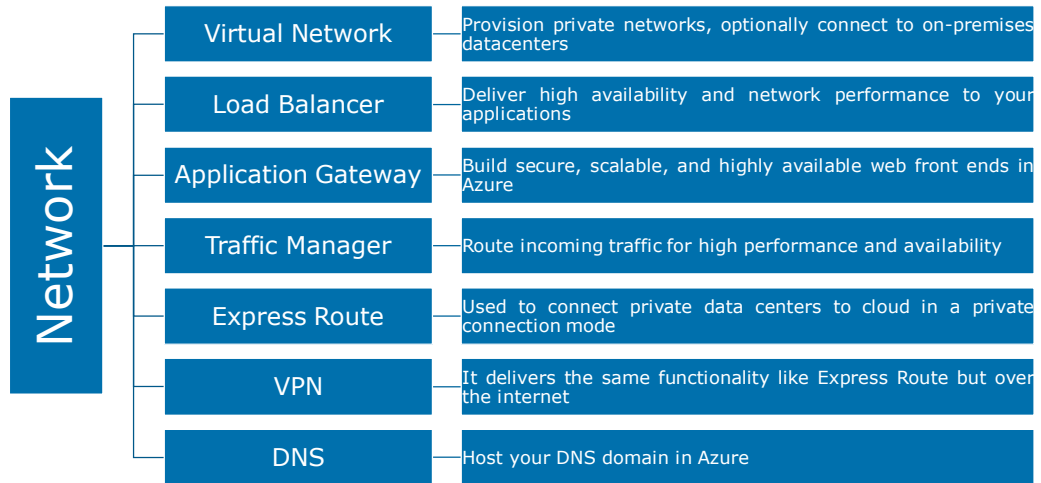
- The world of Azure is large and changes fast. Currently there are 89 main services.



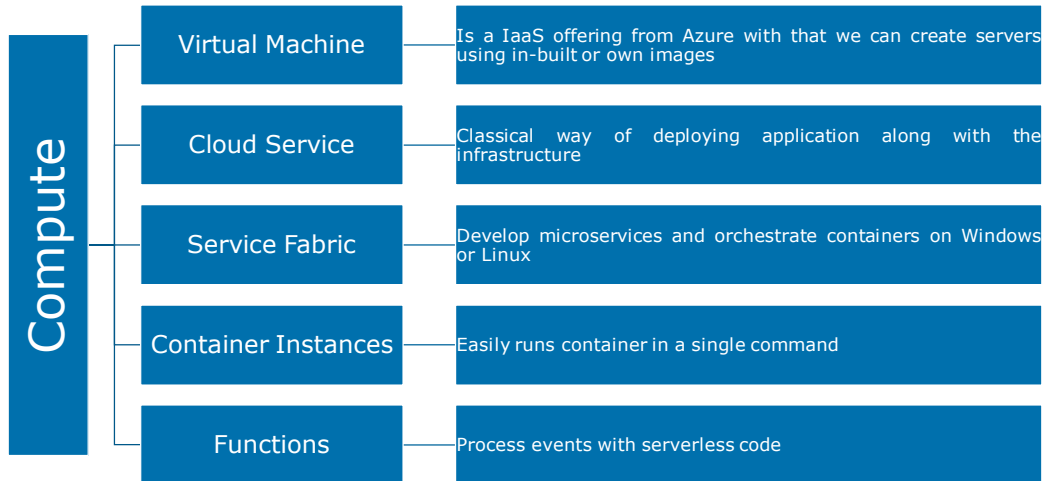
Azure Storage Service



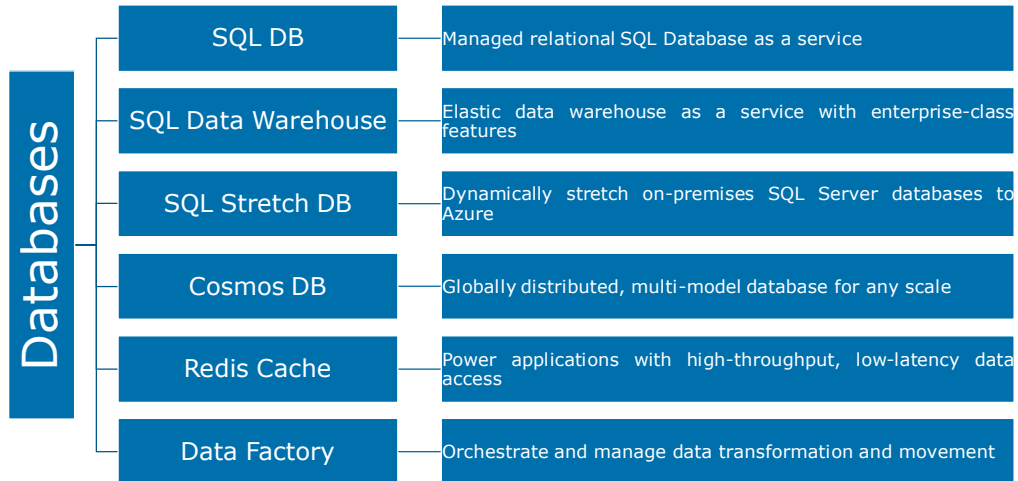
Azure Network Service



Azure Compute Service



Azure Databases



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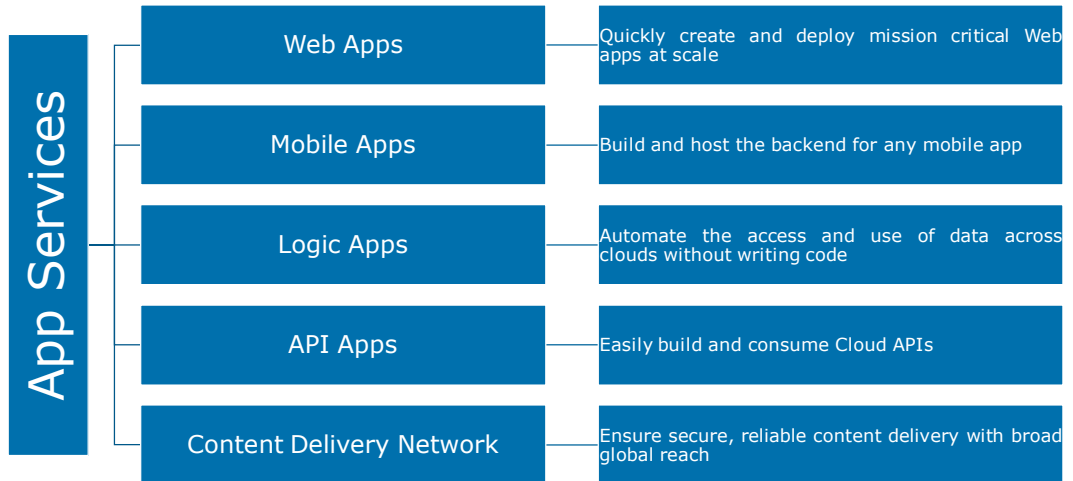
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SQL Data Warehouse is a cloud-based Enterprise Data Warehouse (EDW) that leverages Massively Parallel Processing (MPP) to quickly run complex queries across petabytes of data.

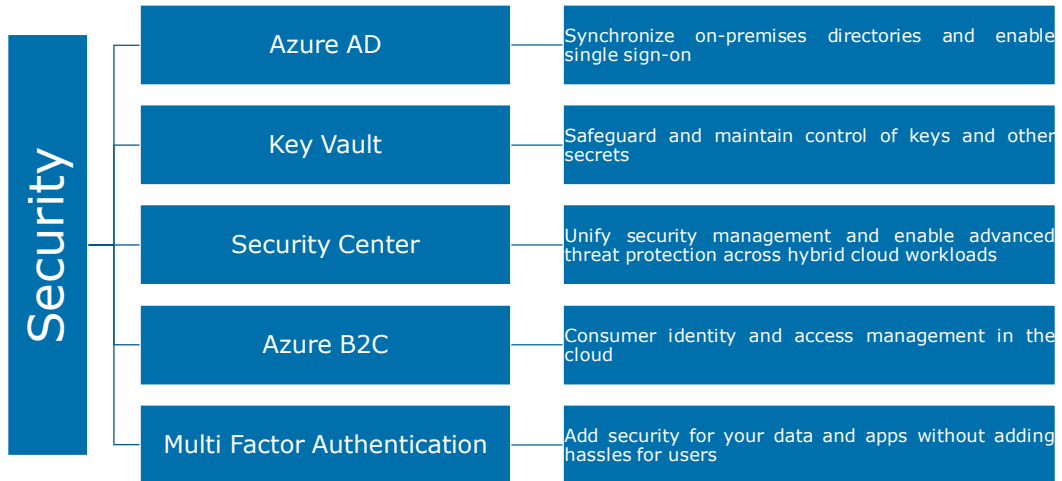
Azure Data Factory service is a fully managed service for composing data storage, processing, and movement services into streamlined, scalable, and reliable data production pipelines. Developers can use Data Factory to transform semi-structured, unstructured and structured data from on-premises and cloud sources into trusted information

Azure Redis Cache is based on the popular open-source Redis cache. It is typically used as a cache to improve the performance and scalability of systems that rely heavily on backend data-stores. Performance is improved by temporarily copying frequently accessed data to fast storage located close to the application. With Redis cache, this fast storage is located in-memory with Redis Cache instead of being loaded from disk by a database.

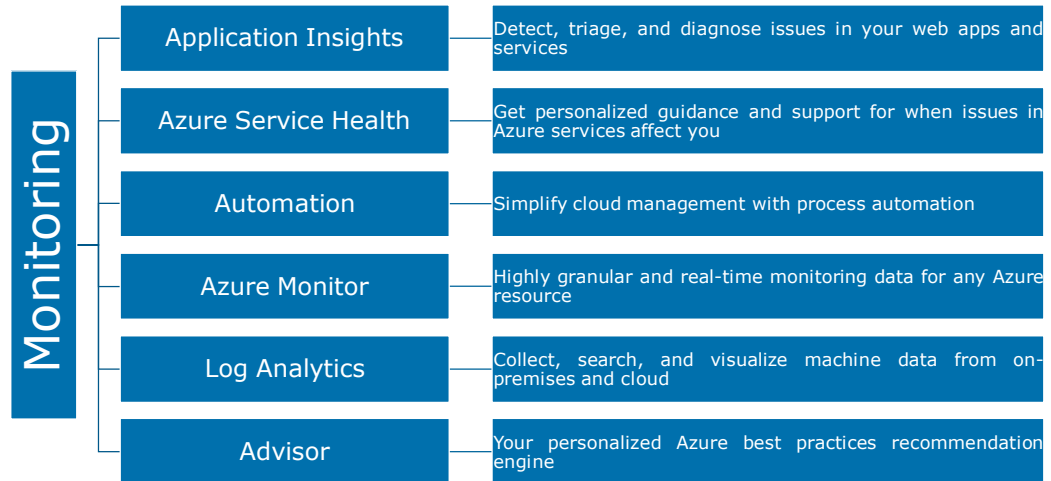
Azure App Services



Azure Security



Azure Monitoring

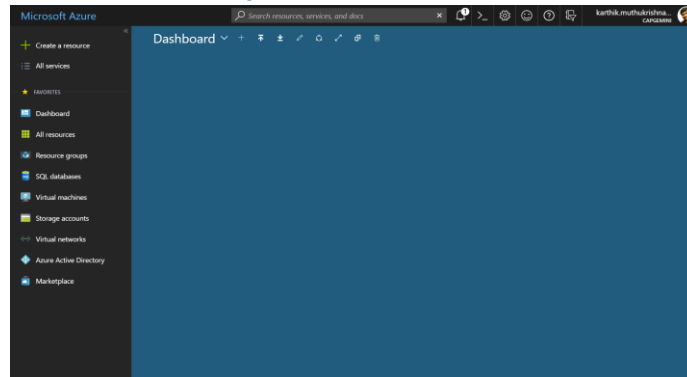


Microsoft Azure Portal



- Azure portal helps us to view and manage all of your applications in one unified hub

portal.azure.com



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Accessing All the Services



Microsoft Azure

Search resources, services, and docs

karthik.muthukrishna... CAPGEMINI

Create a resource

All services

FAVORITES

- Dashboard
- All resources
- Resource groups
- SQL databases
- Virtual machines
- Storage accounts
- Virtual networks
- Azure Active Directory
- Marketplace

All services

Filter

By category

Collapse all | Expand all

GENERAL (14)

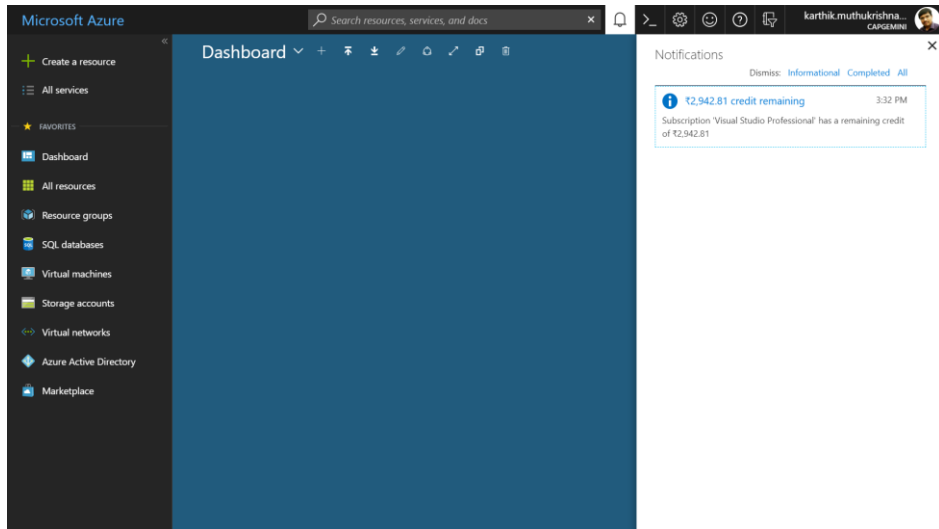
- Dashboard
- Recent
- Subscriptions
- Cost Management + Billing
- Marketplace
- Service Health
- Tags
- All resources
- Management Groups
- Resource groups
- Reservations
- Help + support
- Templates
- What's new

COMPUTE (20)

- Virtual machines
- Virtual machine scale sets
- Function Apps
- Container instances
- Service Fabric clusters
- Kubernetes services
- Virtual machines (classic)
- Container services
- App Services
- Batch accounts
- Cloud services (classic)
- Availability sets

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Notification Icon



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Portal Settings



Microsoft Azure

Search resources, services, and docs

Dashboard

Create a resource

All services

FAVORITES

Dashboard

All resources

Resource groups

SQL databases

Virtual machines

Storage accounts

Virtual networks

Azure Active Directory

Marketplace

Portal settings

Looking for the global subscription filter? [click here](#)

Log me out when inactive

Never

Choose a theme

None White Black

High contrast theme

None White Black

Toast notifications

Enable Disable

Allow double-click on dashboard to change theme

Enable Disable

Language (requires refresh)

English

Regional format (requires refresh)

English (United States)

Restore default settings

Export all settings

Delete all settings and private dashboards

Apply Cancel

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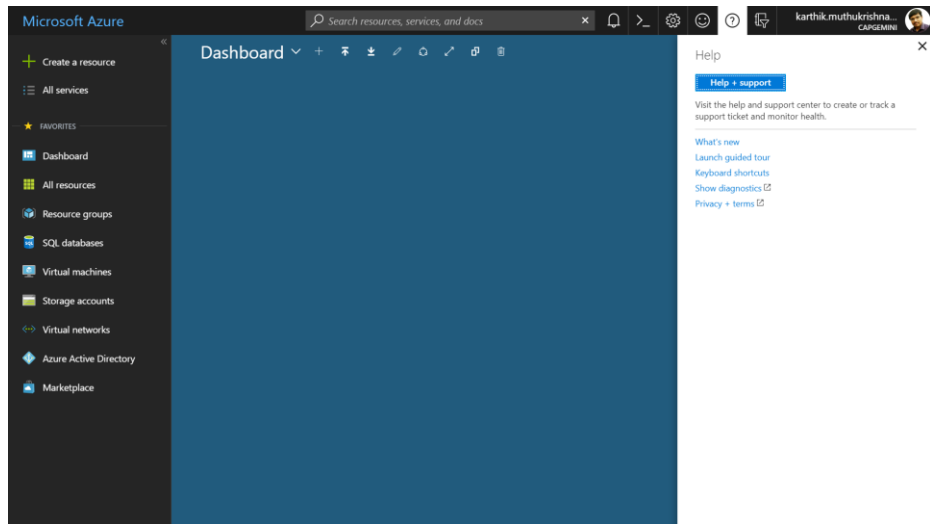
Azure Search(resources, services, and docs)



The screenshot shows the Microsoft Azure portal interface. On the left is a navigation sidebar with options like 'Create a resource', 'All services', and 'FAVORITES'. The main area displays a search for 'Virtual Machine'. A search results pane is open, showing categories: RESOURCES (0 results), RESOURCE GROUPS (0 results), SERVICES (0 results), and MARKETPLACE (All results). Under SERVICES, 'Virtual machines (classic)' is selected. Under MARKETPLACE, several items are listed: 'Red Hat Enterprise Linux 7.2', 'Ubuntu Server 16.04 LTS', 'SQL Server 2016 SP1 Enterprise on Windows Server 2016', and 'Windows Server 2016 Datacenter'. A 'DOCUMENTATION' section at the bottom lists links like 'Azure virtual machine scale sets overview' and 'Introduction to Azure Data Science Virtual Machine'. On the right, a table shows subscription details with columns for 'CURRENT COST' and 'STATUS'. The status 'Active' is shown with a green checkmark.

	CURRENT COST	STATUS
Imin	₹457.19	Active

Azure Portal Help



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Editing Azure Dashboard



Add, pin, move, and resize your tiles. [Done customizing](#)

Tile Gallery

Find tiles by

General

Categories

All

All resources

Resource groups

Marketplace

ARM Actions

ARM Data

Clock

Video

Quickstart tutorials

Dashboard

Chennai, Kolkata... [Edit](#)

3:52 PM

SATURDAY, MAY 12, 2018

Edit clock

Location:

(UTC+05:30) Chennai, Kolkata, Mumbai, N...

Time format:

12 hour 24 hour

Done Reset

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Azure Portal Navigation(Blades)



The screenshot displays the Microsoft Azure portal interface. On the left is a dark sidebar with navigation options: 'Create a resource', 'All services', and 'FAVORITES' including 'Dashboard', 'All resources', 'Resource groups', 'SQL databases', 'Virtual machines', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', and 'Marketplace'. The main area shows a breadcrumb trail: 'Home > SQL databases > SQL Database > Server > New server'. Three blades are open: 'SQL Database' (with fields for Database name, Subscription, Resource group, Select source, Server, Pricing tier, and Collation), 'Server' (showing 'No servers found'), and 'New server' (with fields for Server name, Server admin login, Password, Confirm password, Location, and a checkbox for 'Allow azure services to access server'). The 'New server' blade has a 'Select' button at the bottom.

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Azure Marketplace



Microsoft Azure

Search resources, services, and docs

Home > Marketplace > Everything

Marketplace

My Saved List

Everything

Compute

Networking

Storage

Web

Mobile

Containers

Databases

Analytics

AI + Machine Learning

Internet of Things

Integration

Security

Identity

Filter

Search Everything

Red Hat Enterprise Linux 7.5

Red Hat

Red Hat Enterprise Linux 7 is the world's leading enterprise platform built to meet the needs of today's modern enterprise.

Create

Users interested in Virtual network also viewed

Windows Server

Virtual network

Network security

Storage account -

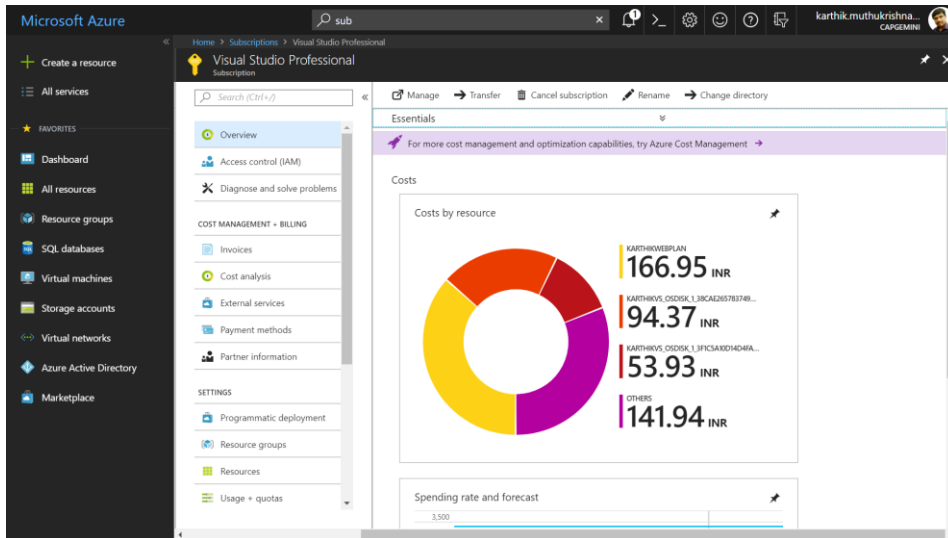
Windows Server

Load balancer

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Azure Subscription Details



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Azure Free Services



Microsoft Azure

Free services

Home > Free services

Free services

Services free for 12 months with the Azure free account

Services that are included for free with your Azure free account. You can use these services within the limits listed below without getting charged. To learn more, see the [Azure free account FAQ](#)

 Windows Virtual Machine COMPUTE	 Linux Virtual Machine COMPUTE	 Azure Managed Disks STORAGE
750 hours B1S Create Windows virtual machines with on-demand capacity in seconds. Learn more	750 hours B1S Create Linux virtual machines with on-demand capacity in seconds. Learn more	64 GB x 2 Get premium, secured disk storage for Azure Virtual Machines with simplified management. Learn more
Create	Create	
 Azure Blob Storage STORAGE	 Azure File Storage STORAGE	 SQL Database DATABASES
5 GB LRS hot block	5 GB LRS File Storage	250 GB

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Azure Developer Tools



- Although Azure portal is a great way to work with Azure resources, Microsoft offers a comprehensive set of development tools for any developer using any platform or language to deliver cloud applications.

Tool	Description
Visual Studio	Get all the power and capabilities you need to easily develop, debug, deploy, manage and diagnose cloud-scale applications on Azure, using a full-featured IDE
Visual Studio Code	Edit and debug code quickly with a lightweight code editor that runs on macOS, Linux and Windows streamlined for building and deploying Node.js and Java apps to the cloud using serverless computing, containers or managed Web Apps
SDKs	Download and install language-specific SDKs and tools for your platform of choice, including .NET, Java, Node.js, Python and Go
CLIs	Use a Azure CLI / PowerShell command-line interface to create and manage services and automate everyday tasks in Azure
REST APIs	REST APIs allow us to interact with nearly every type of resource in Azure programmatically

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Microsoft Azure can provide a bridge from your data center to the cloud.

Summary



- Microsoft Azure is an open, flexible, enterprise-grade cloud computing platform
- Azure gives customers the flexibility to deploy applications where they need to by providing more global regions than any other cloud provider
- Using Azure Portal you can view and manage all of your applications in one unified hub and stay on top of the things that matter most by pinning them to your dashboard



Summary



- Azure Marketplace is the premier destination for all your software needs which is certified and optimized to run on Azure
- The Azure CLI 2.0 is Microsoft's cross-platform command line experience for managing Azure resources
- Azure PowerShell provides a set of cmdlets that use the Azure Resource Manager model for managing your Azure resources.
- REST APIs allow us to interact with nearly every type of resource in Azure programmatically





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