AZURE MADE EASY

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"A concise dictionary of all important Microsoft Azure Cloud terms"

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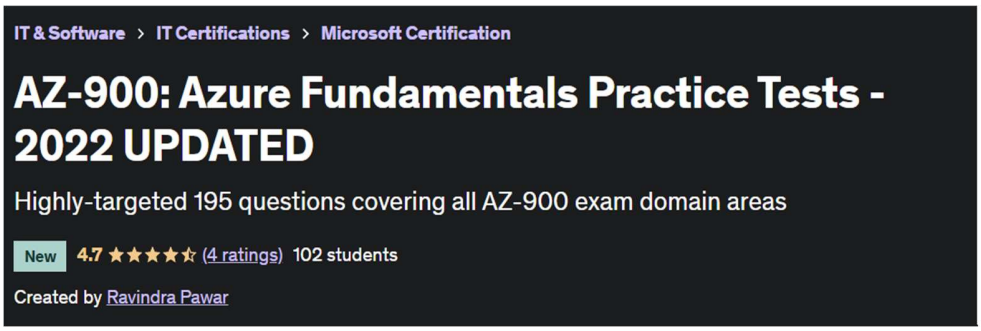

https://www.udemy.com/course/azure-fundamentals-az-900-practice-tests-updated/

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General Cloud Computing Terms

Cloud Computing

Cloud computing is the on-demand delivery of computing/IT services or resources—including servers, storage, networking, databases, software, analytics, etc. —over the internet with pay-as-you-go pricing.

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Pay-as-you-go Pricing Model

The pay-as-you-go (PAYG) pricing model means that users pay based on how much they consume.

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Cloud Service Providers (CSPs)

Cloud Service Providers (CSPs) are the providers of cloud platforms, services, and infrastructure. The top 3 CSPs are Microsoft Azure, Amazon Web Services, and Google Cloud Platform.

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Cloud Tenant

A cloud tenant is an individual, a group, or an organization that consumes cloud services from the cloud service providers.

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Cloud Deployment Model

A cloud deployment model is defined according to where the infrastructure for the deployment resides (in the cloud, on-premises, or both). Deciding which deployment model to employ is one of the most important cloud decisions you will ever make. Public Cloud, Private Cloud, and Hybrid Cloud are the cloud deployment models.

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Cloud Service Model

A cloud service model defines which part of the cloud stack is controlled by the cloud service provider and which part by the tenant. Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) are the cloud service models.

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Shared Responsibility Model

A shared responsibility model is a cloud security framework that dictates which part of the cloud stack's security obligations lie with the cloud service provider and which part's lie with the tenant.

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CapEx

CapEx or Capital Expenditure is the money spent upfront on building and maintaining physical datacenters that included building, power, cooling, networking, racks of servers, and other physical components.

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OpEx

OpEx or Operational Expenditure is the money spent on an ongoing subscription fee for various cloud services provided by cloud service providers.

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Public Cloud

Public cloud is a cloud deployment model where computing resources are owned and operated by a cloud service provider and shared across multiple tenants via the Internet.

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Private Cloud

Private Cloud is a cloud deployment model where the infrastructure is dedicated to a single organization. A private cloud can be hosted either at an organization's own datacenter or at a third-party facility.

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Hybrid Cloud

Hybrid Cloud is a cloud deployment model where some part of the infrastructure resides in an organization's on-premises and some part in the cloud.

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Infrastructure as a Service (IaaS)

IaaS is a cloud service model wherein the cloud service provider takes care of physical networking, physical servers, physical storage, and virtualization. The tenant takes care of the rest— OS (installation, patching, & maintenance of the OS), middleware, runtime, applications, and data.

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Platform as a Service (PaaS)

PaaS is a cloud service model wherein the cloud service provider takes care of physical networking, physical servers, physical storage, virtualization, OS (installation, patching, & maintenance of the OS), middleware, and runtime. The tenant takes care of the applications and related data.

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Software as a Service (SaaS)

SaaS is a cloud service model wherein the cloud service provider takes care of physical

networking, physical servers, physical storage, virtualization, OS (installation, patching, & maintenance of the OS), middleware, runtime, and applications. The tenant is concerned with only their own data.

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Geo-distribution

Geo-distribution is a feature of cloud computing which allows you to deploy apps and data to regional datacenters around the globe, thereby ensuring that your customers always have the best performance in their region.

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Azure Availability Zones

Azure availability zones are physically and logically separated datacenters with their own independent power source, network, and cooling. Azure availability zones are connected by a high-performance network with a round-trip latency of less than 2ms.

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Azure Region

An Azure region is a set of data centers deployed within a latency-defined perimeter and connected through a dedicated regional low-latency network. Azure regions are at least 300 miles apart to protect against regional level failures. Azure has 60+ regions in 140+ countries.

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Azure Geography

An Azure geography is a distinct area on the global map that contains at least one or more regions. Azure geographies preserve data residency and compliance boundaries. Azure Geographies let you keep your business-critical data and applications close using fault-tolerant, high-capacity networking infrastructure. Africa, Australia, India, the UK, and the US are some examples of Azure Geographies.

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Availability Set

An availability set in Azure provides high availability to your virtual machines belonging to same group by logically distributing them into different fault and update domains. Availability sets protect you from rack-level hardware failures or host OS update events. An availability set contains up to 3 fault domains and 20 update domains.

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Update Domain

An update domain is a group of host resources that can be updated and rebooted if required at the same time. An update domain contains different servers from different server racks.

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Fault Domain

Fault domains are separate server racks that share a single point of failure. One fault domain is typically one single server rack.

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Availability

Availability is a measure of system uptime for services.

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High Availability

It is the ability to keep services running for extended periods of time with very little downtime.

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Scalability

Scalability is the ability to scale. Scaling is the process of allocating (adding) and deallocating (removing) resources as per demands.

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Autoscaling

It is the ability of scaling automatically as per demands.

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Vertical Scaling

Scaling up (adding more CPUs or RAM) and scaling down (lowering CPUs or RAM) are vertical scaling.

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Scaling Up

Adding more CPUs or RAM to your system is scaling up.

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Scaling Down

Lowering CPUs or RAM from your system is scaling down.

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Horizontal Scaling

Scaling out (adding more virtual machines or containers) and scaling in (removing unneeded virtual machines or containers) are horizontal scaling.

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Scaling Out

Scaling out is adding more virtual machines or containers to meet increasing demands.

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Scaling In

Scaling in is remove unneeded virtual machines or containers to meet decreasing demands.

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Elasticity

Elasticity is the ability to dynamically allocate and deallocate resources without manual intervention.

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Agility

It is the ability to allocate and deallocate resources quickly.

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Disaster Recovery

Disaster recovery is the ability to recover from an event (disaster) that has taken down the service.

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Fault Tolerance

It is a system's ability to continue operating uninterrupted despite the failure of one or more of its components.

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Redundancy

A system of backup or replication that can be quickly called into action when the primary thing fails.

Latency

The amount of time it takes for data to travel from one place to another.

General Azure Terms

Azure Portal

The Azure portal is a web-based, unified console that provides an alternative to command-line tools. With the Azure portal, you can manage your Azure subscription using a graphical user interface. You can build, manage, and monitor everything from simple web apps to complex cloud deployments.

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Azure Cloud Shell

Azure Cloud Shell is a browser-based shell experience to manage and develop Azure resources.

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Azure CLI

The Azure Command-Line Interface (CLI) is a cross-platform command-line tool to connect to Azure and execute administrative commands on Azure resources.

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Azure PowerShell

Azure PowerShell is a set of cmdlets for managing Azure resources directly from PowerShell.

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Azure Resource Manager

Azure Resource Manager is the service that manages and deploys Azure resources. It has a management layer that allows us to create, update, and delete Azure account resources. You interact with Azure Resource Manager through Azure Portal, Azure PowerShell, Azure CLI, or REST clients.

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ARM Templates

ARM Templates are JSON files that let you define and deploy Azure resources through code.

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Azure Resources

An Azure resource is an instance of service that you create. For example, Azure Virtual Machine, Azure Storage Account, Azure Load Balancer, etc.

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Azure Resource Group

An Azure Resource Group is a logical container that holds multiple resources together so you can manage them as a single entity—based on lifecycle and security.

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Azure Subscription

Azure Subscription is a logical unit of Azure services that is linked to an Azure account. You cannot create and build solutions in Azure without a subscription.

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Management Groups

An Azure Management group is logical containers that allows you to manage access, policy, and compliance across multiple Azure Subscriptions under one umbrella.

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Azure Compute Terms

Virtual Machine

A virtual machine is a computer file, typically called an image, that behaves like an actual computer.

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Azure Virtual Machines

Azure Virtual Machines are image service instances that provide on-demand and scalable computing resources with usage-based pricing.

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Azure Virtual Machine Scale Sets

Azure virtual machine scale sets let you create and manage a group of load-balanced VMs. The number of VM instances can automatically increase or decrease in response to demand or a defined schedule.

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Azure App Service

Azure app service is a fully PaaS-based offering wherein you can host enterprise-grade web applications, REST APIs, and mobile back ends.

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Azure Container Instances

Azure Container Instances is a solution for any scenario that can operate in isolated containers, without orchestration.

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Azure Storage

A storage account is a container that groups a set of Azure Storage services together – like, blob storage, file shares, table storage, and que storage.

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Blob Storage

Azure blob storage is an offering to store an enormous amount of unstructured data that

may come in form of images, text, files, videos, or a mix of all these types.

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Azure File Share

Azure File Share (Azure Files) offers fully managed file shares in the cloud. A file share is a network storage location that you can surface as local storage to your client operating system. Azure Files supports two industry-standard file sharing protocols: Server Message Block (SMB) and Network File System (NFS).

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Table Storage

Azure Table storage is a service that stores non-relational structured data (also known as structured NoSQL data) in the cloud, providing a key/attribute store with a schemaless design. Because Table storage is schemaless, it's easy to adapt your data as the needs of your application evolve.

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Que Storage

Azure Queue Storage is a service for storing large numbers of messages. You access messages from anywhere in the world via authenticated calls using HTTP or HTTPS. A queue message can be up to 64 KB in size. A queue may contain millions of messages, up to the total capacity limit of a storage account.

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Az Copy

AzCopy is a command-line utility that you can use to copy blobs or files to or from a storage account.

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Azure File Sync

Azure File Sync centralizes your company's file shares in Azure File Shares (Azure Files). Azure File Sync transforms Windows Servers running on-premises or in the cloud into a quick cache of your Azure file share.

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Azure Storage Hot Tier

An online storage access tier optimized for storing data that is accessed or modified frequently. The hot tier has the highest storage costs, but the lowest access costs.

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Cool Tier

An online tier optimized for storing data that is infrequently accessed or modified.

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Archive Tier

The Archive tier is a storage access tier for storing data that is rarely accessed. The Archive access tier has the lowest storage cost, but higher data retrieval costs and latency compared to the Hot and Cool tiers.

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LRS

Locally redundant storage (LRS) replicates your storage account three times within a single data center in the primary region. LRS is the lowest-cost redundancy option and offers the least durability compared to other options.

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ZRS

Zone-redundant storage (ZRS) replicates your storage account synchronously across three Azure availability zones in the primary region. Each availability zone is a separate physical location with independent power, cooling, and networking.

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GRS

Geo-redundant storage (GRS) copies your data synchronously three times within a single physical location in the primary region using LRS. It then copies your data asynchronously to

a single physical location in the secondary region.

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GZRS

Geo-zone-redundant storage (GZRS) copies your data synchronously across three Azure availability zones in the primary region using ZRS. It then copies your data asynchronously to a single physical location in the secondary region.

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RAGZRS

It is a geo-zone-redundant storage (GZRS) storage account with a read access to the secondary region.

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Azure Active Directory Terms

Identity

The fact of being something or someone. A user with username and password. Also, it can be an application or server with a secret keys or certificates.

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Role

It is simply a collection of permissions that can be assigned to an identity.

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Security Principal

It is a user, a group, a service principal, or a managed identity.

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Service Principal

It is an app or a server that can be given an identity.

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Authentication

Authentication is the process of verifying who a user is.

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Authorization

Authorization is the process of verifying what resources a user has access to and what they can do with them.

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Azure Active Directory

Azure Active Directory (Azure AD) is a cloud-based identity and access management service.

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Azure AD Tenant

An Azure AD tenant is a reserved Azure AD service instance that an organization receives and owns once it signs up for a Microsoft cloud service such as Azure, Microsoft Intune, or Microsoft 365. Each tenant represents an

organization, and is distinct and separate from other Azure AD tenants.

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Azure AD Security Groups

Azure AD Security Groups are used for managing objects (users) in Azure AD. You can group several Azure users in an Azure AD Security Group and apply licenses and group permissions. This saves you from a lot administrative overhead.

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MS365 Groups

Microsoft 365 Security groups are used to ensure that a group of users have consistent permissions to a set of related resources. They are used to establish a single set of permissions across Microsoft 365 apps including Outlook, SharePoint, OneNote, Skype for Business, Planner, Power BI, and Dynamics CRM.

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Guest User

Guest users sign in to your apps and services with their own work, school, or social identities. They use their own identities and credentials, whether or not they have an Azure AD account. You don't need to manage external accounts or passwords. You don't need to sync accounts or manage account lifecycles.

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Azure B2B

Azure Active Directory (Azure AD) B2B collaboration is a feature within External Identities that lets you invite guest users to collaborate with your organization.

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Azure B2C

This service allows businesses to build customer facing applications, and then allow anyone to sign up into those applications with their personal email or social media accounts.

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Seamless Single Sign-on

Azure Active Directory Seamless Single Sign-On (Azure AD Seamless SSO) automatically signs users in when they are on their corporate devices connected to your corporate network. When enabled, users don't need to type in their passwords to sign in to Azure AD, and usually, even type in their usernames.

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Multi-factor Authentication

Multi-factor authentication is a process in which users are prompted during the sign-in process for an additional form of identification, such as a code on their cellphone or a fingerprint scan.

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Conditional Access

Azure Active Directory (AD) Conditional Access provides added security by allowing access to your applications across cloud and on-premises, for example, only from trusted and compliant devices. It is a policy-based approach. You can configure a Conditional Access policy with the required conditions to apply the access controls.

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Azure AD Role

Azure AD roles are used to manage Azure AD resources in a directory such as create or edit users, assign administrative roles to others, reset user passwords, manage user licenses, and manage domains.

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Azure RBAC

Azure role-based access control (Azure RBAC) is a system that provides fine-grained access management of Azure resources. Using Azure RBAC, you can segregate duties within your

team and grant only the amount of access to users that they need to perform their jobs (principle of least privilege). The role assigned through this is called Azure RBAC Role.

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Principle of least privilege

It is a concept in computer security that limits users' access rights to only what are strictly required to do their jobs.

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Azure Networking Terms

Virtual Network

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks.

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Subnets

Subnets enable you to segment the virtual network into one or more sub-networks and allocate a portion of the virtual network's address space to each subnet. You can then deploy Azure resources in a specific subnet.

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Network Security Groups

Azure Network Security Groups are used to filter network traffic between Azure resources in an Azure virtual network. A network security group contains security rules that allow or deny

inbound network traffic to, or outbound network traffic from, several types of Azure resources.

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Application Security Groups

Application Security Groups service helps to manage the security of Virtual Machines by grouping them according the applications that runs on them.

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Service Endpoint

An Azure Service Endpoint allows Azure VNET to be connected to an Azure service to enable more secure connections. For example, you can connect your VM subnet to Azure storage account. This way only your VMs in that particular subnet can communicate with your storage account over Microsoft Private Backbone network.

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Private Endpoint

A private endpoint is a network interface that uses a private IP address from your virtual network. This network interface connects you privately and securely to a service that's powered by Azure Private Link. By enabling a private endpoint, you're bringing the service into your virtual network.

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VNET Peering

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. The virtual networks appear as one for connectivity purposes. The traffic between virtual machines in peered virtual networks uses the Microsoft backbone infrastructure. Peering VNETS cannot have overlapping address spaces.

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Azure VPN Gateway

Azure VPN Gateway enables you to establish secure, cross-premises connectivity between your virtual network within Azure and on-premises IT infrastructure.

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Azure Site to Site VPN

A Site-to-Site VPN gateway connection is used to connect your on-premises network to an Azure virtual network over a VPN tunnel.

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Azure Point to Site VPN

A Point-to-Site (P2S) VPN connection helps to create a secure connection tunnel to your Azure virtual network (VNet) from individual client computer devices.

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Azure ExpressRoute

Azure ExpressRoute lets you extend your on-premises networks into the Azure over a private

connection with the help of a dedicated connectivity provider.

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Azure DNS

Azure DNS is a hosting service for DNS domains that provides name resolution by using Microsoft Azure infrastructure.

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Azure Load Balancer

An Azure load balancer is a Layer-4 (TCP, UDP) load balancer that provides high availability by distributing incoming traffic among healthy VMs. A load balancer health probe monitors a given port on each VM and only distributes traffic to an operational VM.

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Azure Application Gateway

Azure Application Gateway is a web traffic load balancer that enables you to manage traffic to your web applications.

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Azure Traffic Manager

Azure Traffic Manager is a DNS-based traffic load balancer. This service allows you to distribute traffic to your public facing applications across the global Azure regions.

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Azure Front Door

It is an application delivery network (ADN) as a service that offers Layer 7 load-balancing capabilities for applications.

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Azure Policy, Monitoring, Backup Terms

Azure Policy

The Azure Policy is a free Azure service that permits you to make policies, and assign them to your Azure environment, and receive alerts or take action in cases of non-compliance with these policies.

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Azure Blueprints

Azure Blueprints is a service by Microsoft Azure to build and deploy the repeatable collection of Azure resources by ensuring the same standards, security, and requirements. They have four artifacts (components) – resource groups, role assignments, policy assignments, and ARM templates.

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Resource Locks

Azure Resource Locks help you prevent accidental deletion or modification of your Azure resources by users. There are two locks – delete lock and read-only lock.

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Service Trust Portal

The Service Trust Portal is Microsoft's public site for publishing audit reports and other compliance-related information associated with Microsoft's cloud services.

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Azure Advisor

Azure Advisor analyses your configurations and usage telemetry and offers personalized, actionable recommendations to help you optimize your Azure resources for reliability, security, operational excellence, performance and cost.

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Azure Service Health

Azure Service Health helps you stay informed and take action when Azure service issues like outages and planned maintenance affect your Azure resources.

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Azure Monitor

Azure Monitor helps you understand how your applications are performing and proactively identifies issues affecting them and the resources they depend on.

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Log Analytics Workspace

Log Analytics Workspace is a tool in the Azure portal that can be connected to various Azure services to receive various kinds of logs. You can edit and run log queries from data collected by Azure Log Analytics Workspace and interactively analyze their results.

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Application Insights

Azure Application Insights service helps you understand how your app is performing and how it is being used.

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Azure Site Recovery

Azure Site Recovery replicates your Azure workloads from a primary site to a secondary location. In the event of a disaster, you can quickly failover to your secondary location.

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Azure Security Terms

Zero Trust

Zero Trust is a cybersecurity framework based on the principle of maintaining strict access controls and not trusting anyone by default, even those already inside the organization.

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Defense-In-Depth

Defense-in-depth is a cybersecurity approach that uses multiple layers of security for holistic protection.

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Azure Firewall

Azure Firewall is a cloud-based, fully-managed firewall service that protects your Azure virtual network resources. It comes with built-in high availability and unrestricted cloud scalability.

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Microsoft Defender For Cloud

Microsoft Defender for Cloud is a centralized cloud security management solution that

provides security controls and tools to enable proactive protection to your cloud resources against emerging threats.

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Azure Costing Terms

Azure Pricing Calculator

Azure Pricing Calculator is a free cost management tool that you can use to estimate your cloud costs for new Azure deployments.

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Azure Total Cost of Ownership (TCO) Calculator

The Azure Total Cost of Ownership(TCO) Calculator is used to estimate the cost savings you can achieve by migrating on-premises workloads to Azure.

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Resource Tags

Azure tags are name-value pairs that are assigned related resources to categorize them in Azure Portal. Resource tagging helps in identifying resources by purpose, owner, environment, department, etc. It also helps in optimizing your cloud costs.

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