



Azure Architect Technologies

AZ-300 Exam Preparation Deck

IDENTITY & ACCESS MANAGEMENT (IAM)

- Conditional Access
- Identity Protection (AIdP)
- Multi-Factor Authentication (MFA)
- Self-Service Password Reset (SSPR)
- Role Based Access Control (RBAC)

Azure Identity Protection



- Azure AD Identity Protection is an Azure service used to intelligently identify risks and vulnerabilities affecting your Azure AD identities. Identity Protection is powered by adaptive machine learning which detects anomalies and suspicious incidents relating to identity.
- You MUST have Azure AD Premium P2 licensing.
- You must create Azure AD Identity Protection, as a new resource.
- **User risk policy:**
 - Policies applying to accounts which Identity Protection has identified as being “at risk”
 - Allows or denies access based on risk level, and can **enforce a password change**
- **Sign-in risk policy:**
 - Policies get applied in real-time, during sign-in, and can therefore be used to prevent sign-in.
 - The allow or deny access based on risk level, and can **enforce the use of MFA**
 - These apply to browser and modern-auth traffic.

Azure MFA & SSPR



- Self-Service Password Reset (SSPR) requires **Azure Premium P1 licensing** for enable cloud-users to reset their passwords.
 - Verification methods that can be used by **both** MFA and SSPR are:
 - SMS / Text Message
 - Voice Call
 - Passwords
 - MFA can be bypassed by non-browser applications using app passwords.
 - Can also bypass MFA using “one-time bypass” using MFA server deployment.
 - Trusted IP / Conditional Access Policies - Named Locations.
-

NETWORKING

- Application Gateway
- Load Balancer
- Virtual Networks
- Network Security Groups

Application Gateway



- Load-balances traffic at Layer-7 of the OSI model.
 - Can only have **one** public IP address assigned.
 - Public IP address cannot be static (unless using **v2 SKU**)
 - Cannot use same port (e.g. port 80) for both public AND private listeners.
 - Rules processed in the order they are listed.
 - Can be deployed as WAF or Standard app GW.
 - **V2 SKU** supports autoscaling, and performance increases.
 - Can perform SSL-termination and path-based URL routing, session affinity...etc.
 - SLA is deferred to the SLA of the virtual machines being load-balanced by the App GW when two or more instances are configured in a resource pool. This is an SLA of **99.95%**
- Backend Pool can be configured for:
 - IP Address or FQDN
 - Virtual Machine
 - VMSS
 - App Services

Virtual Networks



- Virtual Networks are logical network segments built within an Azure resource group.
- Requires two key components for configuration:
 - Address Space (e.g. 10.1.0.0/16)
 - Subnet(s) (e.g. 10.1.0.0/24)
- You **cannot** change/modify the address space for a virtual network that has a VNet peering established/connected.
- In order to add/modify an existing VNet address space, you must ensure no VNet peering is in place and no resources residing in that specific VNet address space are affected.

COMPUTE

- Virtual Machines (IaaS)
- Containers (PaaS)
- App Service (PaaS)
- Functions (PaaS / Serverless)

Virtual Machine Scale Sets (VMSS)



- A virtual machine scale set provides the ability to dynamically scale Virtual Machines (VMs) in and out based on demand.
- Configure **autoscaling** conditions to define; when, why, and how a VMSS will scale.
- Autoscaling can be configured to use one or more profiles:
 - Regular/default profile - rules to scale based on metrics
 - Fixed date profile - certain single date/time
 - Recurrence profile - recurring date/time ranges
- One or more metric rules - used to define what criteria and action to use when autoscaling.
 - Condition: specific metric criteria, e.g. “average CPU reaches 70%”
 - Reponse: specific action to apply if criteria occurs e.g. “increase instances/count by 1”
- No defined SLA - uses uptime/availability SLA associated to virtual machines in the same availability set (99.95%)
- **Fixed date profiles will run first**; if there are multiple fixed date profiles, Autoscale will select the first one.
- If no fixed date profiles exist, Autoscale **will run any recurrence profiles that exist**.
- If no fixed date or recurrence profiles exist - autoscale will run regular/default profiles.
- Autoscale will select which rules to run, after it determines which profile should run.
 - **Scale-out rules** (direction = increase) **will run first**
 - If multiple, autoscale will use the largest scale out rule
 - If no scale out rules should trigger, autoscale will evaluate scale-in rules (direction = decrease)
 - If there are multiple scale-in rules, autoscale will use the largest capacity.

Availability Sets



- Availability Sets provide a **99.95%** connectivity/uptime guarantee when **two or more** virtual machine instances are deployed in the same Availability Set.
- Uses the logical groupings to ensure virtual machine instances performing the same tasks are deployed across separate underlying physical infrastructure.
- Uses **Fault Domains (FD)** and **Update Domains (UD)**.

Virtual Machines (IaaS)

- New-AzResourceGroup -name "rg-name" -location <loc>
- New-AzVM -name MyVm -ResourceGroupName <rg-name> -location <location>

```
{
  "location": "westus",
  "plan": {
    "publisher": "microsoft-ads",
    "product": "windows-data-science-vm",
    "name": "windows2016"
  },
  "properties": {
    "hardwareProfile": {
      "vmSize": "Standard_D1_v2"
    },
    "storageProfile": {
      "imageReference": {
        "sku": "windows2016",
        "publisher": "microsoft-ads",
        "version": "latest",
        "offer": "windows-data-science-vm"
      },
      "osDisk": {
        "caching": "ReadWrite",
        "managedDisk": {
          "storageAccountType": "Standard_LRS"
        },
        "name": "myVMosdisk",
        "createOption": "FromImage"
      }
    },
    "osProfile": {
      "adminUsername": "{your-username}",
      "computerName": "myVM",
      "adminPassword": "{your-password}"
    },
    "networkProfile": {
      "networkInterfaces": [
        {
          "id": "/subscriptions/{subscription-id}/resourceGroups/myResourceGroup/providers/Microsoft.Network/networkInterfaces/{nic-name}",
          "properties": {
            "primary": true
          }
        }
      ]
    }
  }
}
```

Azure App Service - Web Apps



- Functionality will be determined by the underlying App Service / App Service Plan.
- Supports Windows/Linux platforms
- Provides capability of integration with on-prem environments using Hybrid Connections.
- WebJobs can run in two main ways:
 - Continuous
 - Start immediately once created.
 - Supports remote debugging.
 - Can be restarted if job ends
 - Runs on all instances the the web app runs on, within server farm (app service plan).
 - Store copies of runtime files in **App_Data/jobs/continuous**
 - Triggered
 - Only start once triggered manually, or based on a schedule.
 - Remote debugging **NOT supported** for triggered/scheduled webjobs.

[App Service plans - Azure App Service](https://azure.microsoft.com/en-us/pricing/details/app-service/plans/)

- App service plans also provide load-balancing and scalability features.
- <https://azure.microsoft.com/en-us/pricing/details/app-service/plans/>
- Web Apps can be deployed using either;
 - **Docker containers**
 - **Code.**
- Web Apps require a unique name and uses the namespace/URI; **mywebapp.azurewebsites.net**

Azure App Service Plans

	FREE	SHARED	BASIC	STANDARD	PREMIUM	ISOLATED *	APP SERVICE LINUX
– Limits **							
Apps	10	100	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Disk space	1 GB	1 GB	10 GB	50 GB	250 GB	1 TB	
Max instances			Up to 3	Up to 10	Up to 30	Up to 100	
SLA			99.95%	99.95%	99.95%	99.95%	
Functions on App Service Plans *			✓	✓	✓	✓	
– App Deployment							
Continuous Deployment *	✓	✓	✓	✓	✓	✓ ³	✓
Deployment Slots				✓	✓	✓	✓
Docker (Containers)							✓ ¹

App Service Plan Tiers:

- F1 = Free Tier
- D1 = Shared
- B1 = Basic
- S1 = Standard
- P1 = Premium

Azure App Service Plans (Cont.)

	FREE	SHARED	BASIC	STANDARD	PREMIUM	ISOLATED *	APP SERVICE LINUX
– Scale							
Auto-scale				✓	✓	✓	✓
Integrated Load Balancer		✓	✓	✓	✓	✓	✓
Traffic Manager ³				✓	✓	✓	
– Settings							
64-bit			✓	✓	✓	✓	✓
App Service Advisor *			✓	✓	✓	✓	✓
Always On			✓	✓	✓	✓	

Azure App Service Plans (Cont.)

	FREE	SHARED	BASIC	STANDARD	PREMIUM	ISOLATED [*]	APP SERVICE LINUX
Remote Debugging (.NET)	✓	✓	✓	✓	✓	✓ ³	
Remote Profiling (.NET)			✓	✓	✓	✓ ³	
Security Scanning [*]	✓	✓	✓	✓	✓	✓	
Session Affinity	✓	✓	✓	✓	✓	✓	✓
SSL (IP/SNI)			✓	✓	✓	✓	✓
App Service Managed Certificates (Public Preview) ⁸			✓	✓	✓	✓	✓
Web Sockets ⁴	✓	✓	✓	✓	✓	✓	✓

Functions - Serverless



Azure functions enable rapid deployment of code which can be triggered by a range of events, all without the need of managing the underlying infrastructure. This capability is often referred to as “serverless”.

- Functions are created in a function app.
- Enable cost savings when using the **consumption plan** - pay only for execution time.
- Integrates with a number of Azure services.
- Parent container is the Azure Function App, which defines the following properties;
 - Hosting Plan
 - Consumption Plan - manages resources and scale; billed only for execution time.
 - App Service Plan (Free, Shared, Basic, Standard, Premium, Isolated, and App Service Linux)
 - Free/Basic/Shared - DOES NOT support autoscaling.

- Consumption Plan **does not** have any integration with virtual networks.
- **Durable Functions** - For background jobs, or tasks you need to ensure that only one instance (**singleton**) of a particular orchestrator runs at a time.
- Durable Functions assign a specific instance ID to an orchestrator when creating it.
- Durable Functions is an extension of Azure Functions that lets you write stateful functions in a serverless compute environment. Let's you define stateful workflows by writing **orchestrator functions** and stateful entities by writing **entity functions** using the Azure Functions programming model.

Azure Logic Apps



Logic Apps are often referred to as “**workflow-as-a-service.**” Using either graphical design or code, it is possible to build workflows which integrate and control services in response to triggers.

- Underlying code uses Workflow Definition Language in JSON
- On-premises connectors: Access on-prem resources with the **on-premises data gateway.**
- In order for Logic Apps to access resources in virtual networks to can create an **integration service environment (ISE).**
- An ISE is a dedicated instance of the Logic Apps Service that uses dedicated resources and runs separately from the “global” multi-tenant Logic Apps service.
- To support high throughput, enable this feature within the **workflow settings** within the Logic App.
- **Settings -> Workflow settings -> High Throughput - > Enable.**
- An **integrated services environment (ISE)** requires an Azure virtual network (VNET) and must have **four empty subnets** that aren't delegated to any service for creating and deploying resources in your ISE.
- Each subnet supports a different Logic Apps component.

DATABASES

- Azure SQL Database
- Azure Cosmos DB

Azure SQL Database



- Uses the following naming setting:
 - **name.database.windows.net**
- Pricing tier sets resource and storage limits
- Pricing model is based on either;
 - Database Transaction Units (DTU)
 - vCPU - A clearer view of actual underlying resources, with control over storage and CPU.
- Azure SQL DB deployment options:
 - **Single Database**: Managed SQL DB server, recommended for cloud-born applications.
 - **Elastic pools**: A resource pool intended to be shared by multiple single databases.
 - **Managed instance**: Intended for databases migrated from on-premises with near 100% compatibility with on-premises SQL server.
- Elastic pools can improve and simplify the manageability of scale when multiple databases are involved.
- Pools are suitable when multiple DB's have lower utilisation and infrequent utilisation spikes.
- Two main methods for encryption:
 - **1. Transparent Data Encryption (TDE).**
 - Encrypted at rest.
 - Performs encrypt/decrypt on the underlying server, transparent to the application.
 - **2. Always Encrypted.**
 - Confidential data/sensitive information is encrypted client-side.
- Azure Database Migration Service (DMS)
 - Feature/service used to migrate on-prem SQL servers to Azure SQL database.

Cosmos DB



- Cosmos DB is an advanced database service designed for global data distribution and accessibility. Microsoft manages the underlying infrastructure to provide scale, availability, performance, and replication for a range of non-relational data types.
- Main features of Cosmos DB include:
 - Five (5) well defined consistency levels for data replication spanning strong <-> eventual
 - Elastic horizontal scalability and single-digit millisecond accessibility.
 - Support for multiple data types and APIs, including **SQL, MongoDB, Cassandra, and Gremlin**
 - Server-side programming including stored procedures, triggers, and user defined functions.
- 1 RU is calculated as the throughput required to read a 1KB document.
- Can be provisioned at either the **Database** or **Container** layer.

Cosmos DB is made up of the following components:

1. **Cosmos DB Accounts:**
 - a. Name: establishes the URI:
 - i. **Name.documents.azure.com**
 - b. API: for data type API
 - c. Location: initial location (can be expanded with replication)
2. **Database** - namespace / management layer for containers
3. **Containers** - unit of scalability:
 - a. Type of container depends on data type / API
 - b. Can be collections, Graphs (Gremlin API), Tables..etc
4. **Items** - actual entities being stored
 - a. Based on type (data type / API)
 - b. Can be Documents (document API, Tables (Cassandra), Graph (Gremlin), etc.

Cosmos DB - Partitioning



- Partitioning is used at the Container layer so that the Cosmos DB service can distribute data amongst infrastructure so as to maintain performance levels.
- You **MUST** specify a partition key for the cosmos DB service to use to evenly distribute data and access.
- Partitioning **divides items in a container in to logical partitions**, based on the **partition key**
- Partitioning is important and can impact:
 - Pricing - queries across a single partition are cheaper than across multiple partitions.
 - Transactions in stored procedures or triggers can only be performed against a single partition.
- Partition management, scalability, and distribution
- Once you select your partition key, it is **not possible to change it** in-place.
- Each partition has a limit of **10 GB** of storage; partitioning should consider your **storage requirements**.
- Throughput is limited at the partition layer; partitioning needs to consider read/write **request distribution**
- Transactions can be scoped to a partition key; consider your top queries & common scope/filters

Cosmos DB - Consistency



- Cosmos DB has five (5) consistency levels:
 - The five models are from strongest to weakest are: strong, bounded staleness, session, consistent prefix, and eventual.
 - **Consistency levels are region agnostic** and are guaranteed for all read operations.
 - Default consistency levels are configured at the Cosmos DB account level.
- The CosmosDB service offers a **99.99% SLA** which covers throughput, consistency, availability, and latency for the CosmosDB accounts scoped to a single Azure region configured with any of the five (5) **consistency levels** or Database Accounts spanning multiple Azure regions, configured with any of the four relaxed Consistency Levels.
- Information for each consistency level:
 - **Strong:** reads are guaranteed to return most recent committed version of an item.
 - **Bounded Staleness:** will be consistent to an agreed amount;
 - Reads might lag behind writes by at most ___ version of an item, or
 - Reads might lag behind writes by at most ___ amount of time.
 - **Session:** reads are guaranteed to honor writes for a given client session.
 - **Consistent Prefix:** guarantees that reads never see out-of-order writes.
 - **Eventual:** no guarantee about order of reads; replicas will *eventually* converge.

CosmosDB - Queries/Cross-partition query



- There are three (3) main ways to query containers within CosmosDB, these are:
 - **In-partition query**
 - **DeviceId** will filter to a single physical partition
 - `SELECT * FROM c WHERE c.DeviceId = 'XMS-0001'`
 - `SELECT * FROM c WHERE c.DeviceId = 'XMS-0001' AND c.Location = 'Seattle'`
 - **Cross-partition query**
 - No filter on partition key (DeviceId).
 - Query must “fan-out” to all physical partitions where it is run against each partition’s index.
 - `SELECT * FROM c WHERE c.Location = 'Seattle'``
 - **Parallel cross-partition query**
 - Azure CosmosDB SDK 1.9.0 and later support parallel query execution options.
 - Parallel cross-partition queries allow you to perform low latency, cross-partition queries.
- <https://docs.microsoft.com/en-us/azure/cosmos-db/how-to-query-container>

STORAGE

Azure Storage Services



- The follow Azure storage services are available within an Azure Storage Account (SA):
 - Blobs: Massively scalable object-based storage
 - Files: Managed file shares, similar to on-prem file shares
 - Queues: Messaging solution used for decoupled apps
 - Tables: NoSQL storage solution for schemaless key/attribute based data
- Each storage service has its own unique endpoint namespace, for example:
 - Blob: <http://mysa1.blob.core.windows.net>
 - Table: <http://mysa1.table.core.windows.net>
 - Queue: <http://mysa1.queue.core.windows.net>
 - Files: <http://mysa1.file.core.windows.net>
- There are three (3) access tiers:
 - **Hot** - Frequently accessed data. Most cost-effective.
 - **Cool** - Infrequently accessed data and stored for at least 30 days - **more expensive than hot tier access.**
 - **Archive:** (**available only for block blobs** at the container level - not at the storage account level).
- <https://docs.microsoft.com/en-us/azure/storage/common/storage-account-overview?toc=%2fazure%2fstorage%2fblobs%2ftoc.json>
- Azure files currently supports the following redundancy types:
 - LRS
 - ZRS
 - GRS
 - GZRS
- RA-GRS is **NOT** supported for Azure files.
- Advanced Threat Protection (ATP) is available **only for Blob storage.**
- Account types that support advanced threat protection include; **general-purpose v2, block blob, and blob** storage accounts.
- <https://docs.microsoft.com/en-us/azure/storage/common/storage-advanced-threat-protection?tabs=azure-portal>

Azure Storage (Cont.)

Storage Account Type	Supported Services	Supported Performance Tiers	Supported Access Tiers	Replication Options
General-purpose v2	Blob, File, Queue, Table, and Disk	Standard, Premium	Hot, Cool, Archive	LRS, ZRS, GRS, RA-GRS
General-purpose v1	Blob, File, Queue, Table, and Disk	Standard, Premium	N/A	LRS, GRS, RA-GRS
Blob storage	Blob (block and append blobs only)	Standard	Hot, Cool, Archive	LRS, GRS, RA-GRS

- Storage Account Type GPv1 **does not** support access tiers.
- RA-GRS/GRS and GZRS **do not** support file share storage.
- Premium performance tier only supports **LRS replication** (Locally Redundant Storage).
- Archive access tier is available at the level of an **individual Blob ONLY**. Not at the account level!

LRS	ZRS	GRS/RA-GRS	GZRS/RA-GZRS
General-purpose v2	General-purpose v2	General-purpose v2	General-purpose v2
General-purpose v1	Block blob storage	General-purpose v1	
Block blob storage	File storage	Blob storage	
Blob storage			
File storage			

Azure Disks - Performance Comparison

	Ultra disk	Premium SSD	Standard SSD	Standard HDD
Disk type	SSD	SSD	SSD	HDD
Scenario	IO-intensive workloads such as SAP HANA , top tier databases (for example, SQL, Oracle), and other transaction-heavy workloads.	Production and performance sensitive workloads	Web servers, lightly used enterprise applications and dev/test	Backup, non-critical, infrequent access
Max disk size	65,536 gibibyte (GiB)	32,767 GiB	32,767 GiB	32,767 GiB
Max throughput	2,000 MB/s	900 MB/s	750 MB/s	500 MB/s
Max IOPS	160,000	20,000	6,000	2,000

**IMPLEMENT WORKLOADS &
SECURITY (25-30%)**

Azure Backup/Recovery Services/Migrate



- On-premises **Hyper-V virtual machines (VMs)** that you replicate to Azure **must** meet the following requirements:
 - OS Disk:
 - Up to 2TB (2,048 GB) for Gen 1 VMs
 - Up to 300GB for Gen 2 VMs
 - Data Disk:
 - Up to 4TB (4,095GB)
 - BitLocker: Not supported.
 - Supports both 32-bit and 64-bit OS architecture
 - Hard disk format: VHD and VHDX (converted)
 - Data disk count: 16 or less
 - **Linux Generation 2 VMs NOT SUPPORTED.**
- On-premises **VMware virtual machines (VMs)** that you replicate to Azure **must** meet the following requirements:
 - OS Disk:
 - Up to 2TB (2,048 GB)
 - Data Disk:
 - Up to 8TB (8,192GB) when using **agent-based** migration.
 - Up to 8TB (4,095GB) when using **agentless** migration.
 - <https://docs.microsoft.com/en-us/azure/migrate/server-migrate-overview>.
 - Data disk count: 16 or less
 - **Guest OS architecture: 64-bit**
 - 32-bit Linux **NOT SUPPORTED**.
 - OS disk must be a basic disk.
 - Data disks can be dynamic disks.



Parking Lot

- ~~Enterprise State Roaming (ESR):~~
- Configuring a VHD template / Generalising a VM
- Rule order processing preferences when evaluating multiple VMSS and Availability Set rules.
- ~~Cosmos DB / Partitions and Consistency Levels:~~
 - ~~EnableCrossQueryPartition~~
- Storage Lifecycle
- ~~MFA Bypass~~
 - ~~App Passwords for legacy applications that do not support MFA and non-browser applications.~~
 - ~~One-time Bypass~~
- Create an Availability Set (AS)
- ~~Azure Private DNS~~
- Microsoft preparation labs:
<https://github.com/MicrosoftLearning/AZ-300-MicrosoftAzureArchitectTechnologies/tree/master/Instructions>
- ~~Azure Service Fabric - Reliable services~~
 - ~~Stateless and stateful applications.~~

Enterprise State Roaming (ESR)



- Enables Azure AD users to securely synchronise their user settings and application settings data to the cloud.
- ESR provides users with a unified experience across their Windows devices.
- Works with **Windows 10**
- Data is automatically encrypted before leaving the user's Windows 10 device by using Azure Rights Management (Azure RMS).
- Data is also encrypted at rest - except for namespaces, like settings names, and Windows app names.
- Provides control and visibility over who syncs settings in your organisation and on which devices through Azure AD portal integration.
- <https://docs.microsoft.com/en-us/azure/active-directory/devices/enterprise-state-roaming-overview>

Steps to enable Enterprise State Roaming (ESR)

1. Add and Verify admin contacts in admin portal
 2. Adjust conditional access
 3. Assign licenses (**Azure AD Premium** / Enterprise EMS)
 4. Deploy Intune Company Portal
 5. **Enable Enterprise State Roaming**
Azure AD -> Devices -> Enterprise State Roaming
 6. Set up devices
 7. Get your users ready to use devices
 8. Deploy apps
- When a user is deleted in Azure AD, the user account roaming data is deleted after **90 to 180 days**.

Azure Private DNS



Azure DNS provides the following capabilities:

- **Automatic registration of virtual machines from a virtual network that's linked to a private zone with autoregistration enabled.** The virtual machines are registered (added) to the private zone as A records pointing to their private IP addresses. When a virtual machine in a virtual network link with autoregistration enabled is deleted, Azure DNS also automatically removes the corresponding DNS record from the linked private zone.
 - **Forward DNS resolution is supported across virtual networks that are linked to the private zone.** For cross-virtual network DNS resolution, there's no explicit dependency such that the virtual networks are peered with each other. However, you might want to peer virtual networks for other scenarios (for example, HTTP traffic).
 - **Reverse DNS lookup is supported within the virtual-network scope.** Reverse DNS lookup for a private IP within the virtual network assigned to a private zone returns the FQDN that includes the host/record name and the zone name as the suffix.
-
- A specific virtual network can be **linked to only one private zone** if automatic registration of VM DNS is enabled.
 - You can link multiple virtual networks to a single DNS zone.

Azure Private DNS (Cont.)



- A single virtual network can be linked to a private DNS zone as the **Registration virtual network**.
- Virtual machines (VMs) within the registration VNet will automatically have A records created for the VMs by Azure DNS.
- For resolution across virtual networks, this requires a hub-and-spoke architecture.
- The central hub VNet can be linked to Azure Private DNS as the registration virtual network, then the spoke VNet can be linked as the **Resolution** virtual network.
- VMs within the resolution VNet need to have their DNS records **created manually**.
- <https://docs.microsoft.com/en-us/azure/dns/private-dns-scenarios>

Azure Private DNS (Cont.)



Powershell Configuration //

```
Install-Module -Name Az.PrivateDns -force
```

```
$backendSubnet = New-AzVirtualNetworkSubnetConfig -Name  
backendSubnet -AddressPrefix "10.2.0.0/24"
```

```
$vnet = New-AzVirtualNetwork `  
-ResourceGroupName MyAzureResourceGroup `  
-Location eastus `  
-Name myAzureVNet `  
-AddressPrefix 10.2.0.0/16 `  
-Subnet $backendSubnet
```

```
$zone = New-AzPrivateDnsZone -Name private.contoso.com  
-ResourceGroupName MyAzureResourceGroup
```

```
$link = New-AzPrivateDnsVirtualNetworkLink -ZoneName  
private.contoso.com `  
-ResourceGroupName MyAzureResourceGroup -Name "mylink" `  
-VirtualNetworkId $vnet.id -EnableRegistration
```

Azure Service Fabric



- Azure Service Fabric simplifies writing and managing **stateless** and **stateful** services.
- **Reliable Services** is one of the programming model available on Service Fabric. Another is the **Reliable Actor** programming model, which provides a “Virtual Actor” application framework on top of the Reliable Services model.
- <https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-reliable-services-introduction>
- Guest executables:
<https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-guest-executables-introduction>
- Can run any type of code, such as; Node.js, Java, or C++ in Azure Services Fabric. Service Fabric refers to these types of services as **guest executables**

Post-Exam Notes - 23/06/2020 - Result = PASS!

Areas covered in exam:

- SQL Elastic Pools (moving SQL databases from one pool to another pool)
- SQL cross-partition queries (partition key = "itemID")
- Docker file configuration - how to copy file1.txt to a container using a dockerfile command
- WebJob CRON syntax - how to specify web job to trigger every 15 minutes using CRON.
- WebJob configuration
- Creating a site-to-site VPN - steps and components required to create...GatewaySubnet, VNG, LNG...etc
- Virtual Machine ARM templates - **DependsOn** fields...Virtual Networks / Subnets / NetworkInterfaces.
- Logic App Designer - how to create a trigger that uses EventGrid
- Logic App Designer - Configure workflows
- Azure Kubernetes cli: list-nodes, get-credentials, kubectl - steps to follow when using azure CLI with Kubernetes.
- Drilled hard on SQL database topics / elastic pools specifically.
- Drilled on Docker and configuration file commands, how to copy files using docker.
- WebJob focus. Know how to use CRON expressions.
- LogicApp content, know how to build logic apps and integrate them with Event Grid to trigger notifications.
- Drilled on Azure Storage. Know your storage types and supported services vs performance tier (e.g. Azure Files is supported for Premium performance tier).
- Know Azure Backup and the steps to perform and create a backup job.

****These notes are based off my personal experience and may vary for you in your exam. So please keep that in mind, do not rely 100% on these notes, just use them in addition to your own exam preparation. Good luck! :)**