

Azure fundamental assignment 4

1. List Features and benefits of ExpressRoute.

ExpressRoute is an Azure service that lets you create private connections between Microsoft datacenters and infrastructure that's on your premises or in a colocation facility. ExpressRoute connections don't go over the public Internet, and offer higher security, reliability, and speeds with lower latencies than typical connections over the Internet.

ExpressRoute connections don't go over the public Internet. They offer higher security, reliability, and speeds, with lower and consistent latencies than typical connections over the Internet. In some cases, using ExpressRoute connections to transfer data between on-premises devices and Azure can yield significant cost benefits.

2. Explain Azure storage account, disc storage and blob storage.

An Azure storage account contains all of your Azure Storage data objects, including blobs, file shares, queues, tables, and disks. The storage account provides a unique namespace for your Azure Storage data that's accessible from anywhere in the world over HTTP or HTTPS.

Azure Disk Storage is the only shared cloud block storage that supports both Windows and Linux-based clustered or high-availability applications via Azure shared disks. Learn how shared disks enables you to run your mission-critical workloads in Azure.

Azure Blob storage is Microsoft's object storage solution for the cloud. Blob storage is optimized for storing massive amounts of unstructured data. Unstructured data is data that doesn't adhere to a particular data model or definition, such as text or binary data.

3. List and describe database services that are available on Microsoft Azure.

Azure offers various services to migrate the data from different sources or on-premise SQL server data to the cloud. Database services offer different services tiers and compute size based on the data and also have dynamic scalability.

1. Azure Database Migration Service

It is a fully managed service that is used for seamless migration from various database sources and on-premise SQL servers to the Azure data platform with fewer user

interactions and optimized time with online integration. This service is also used for different existing Azure tools and services to give customers high availability. This service has a premium pricing tier based on this managed instance.

2. SQL Server Stretch Database Service

Azure uses the Stretch database to migrate the cold or infrequently accessed data to Azure cloud, It is used to replicate data transparently and securely to the cloud. Stretch database is cost-effective to transfer data and does not require many changes to queries or application whether data is stretched to the cloud or is on on-premise machines. If some data is stored in the specific tables then the user can migrate the entire table and also it has a filter condition based on data the user can filter out hot and cold data and migrate selected rows only.

3. SQL Data Sync Service

It is based on the sync group and SQL data sync service is built on Azure SQL database service and can be used to synchronize the data bi-directionally across various databases both in the cloud or the on-premise machines. To synchronize the data it uses the hub and spoke topology and hub database is always an Azure SQL database.

4. Azure Data Factory Service

Data factory service is a managed ETL (Extract Transform Load) cloud service and integration service. used for extracting the required data and performing the transformation on the data to analyze the logs for data and get more insight into the data. Using data factory users can create data-driven ETL pipelines for data movement and transform data at scale.

5. Azure Cosmos Database

It is a NoSQL database used to store structure, unstructured or semi-structured data to the azure. Azure Cosmos database is highly available (99.999% available) and dynamically scalable and has very low latency while loading and fetching the data. Cosmos database helps to handle the real-time data with large changes managed by big data technology. It is a globally distributed and multi-modal database and users can enable the cosmos database service using a single button and store data across worldwide regions. It is a NoSQL database hence it does not have schema and index management as the database engine handles the schema inbuilt and hence no application downtime as cosmos db automatically indexes the data. It has in-built security and all data is encrypted by default.

6. Azure Active Directory

It is used to secure all the services provided as part of database service and also integrate all these services. It manages all the users' Identity and access to the various services.

4. What is the Azure security center?

Azure Security Center by Microsoft is a solution that provides unified security management across hybrid cloud workloads. It offers threat protection for data centers within both cloud workloads and on-premises. The platform also works with hybrid clouds that are not part of the Azure ecosystem.

The Azure Security Center is designed to resolve a pressing problem when your organization migrates to the cloud. The cloud customer has to take more responsibilities when upgrading to Infrastructure-as-a-Service (IaaS) as compared to cloud solutions like Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS), where the cloud service providers take care of most tasks related to securing the network and the services.

5. How to detect and respond to security in Azure.

Defender for Cloud automatically collects, analyzes, and integrates log data from your Azure resources, the network, and connected partner solutions - like firewall and endpoint protection solutions - to detect real threats and reduce false positives. A list of prioritized security alerts is shown in Defender for Cloud along with the information you need to quickly investigate the problem and steps to take to remediate an attack.

6. What is the Azure key vault? Write its features and advantages.

Azure Key Vault is a cloud service for securely storing and accessing secrets. A secret is anything that you want to tightly control access to, such as API keys, passwords, certificates, or cryptographic keys. Key Vault service supports two types of containers: vaults and managed hardware security module(HSM) pools.

Azure Key Vault is a cloud service that provides a secure store for secrets. You can securely store keys, passwords, certificates, and other secrets. Azure key vaults may be created and managed through the Azure portal.

Centralizing storage of application secrets in Azure Key Vault allows you to control their distribution. Key Vault greatly reduces the chances that secrets may be accidentally leaked. When using Key Vault, application developers no longer need to store security information in their application.