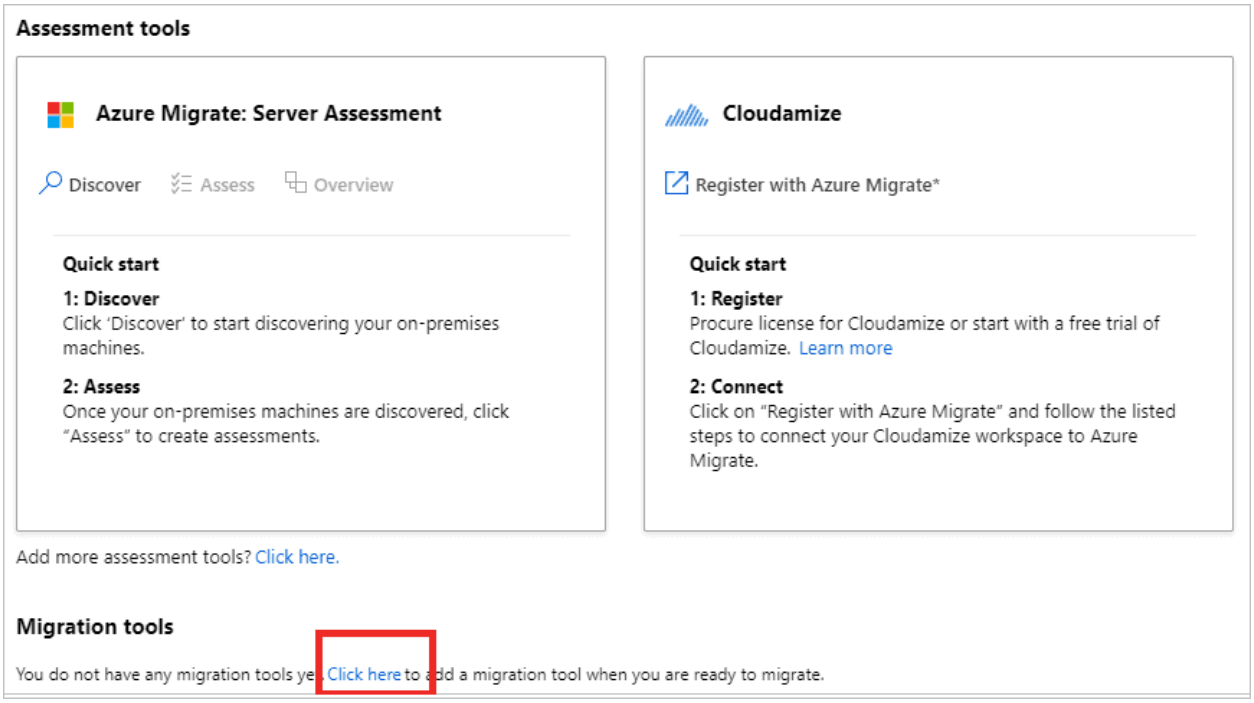
Microsoft Azure Solutions Architect Design

1) Migrating Hyper-V VMs To Azure By Using Azure Migrate

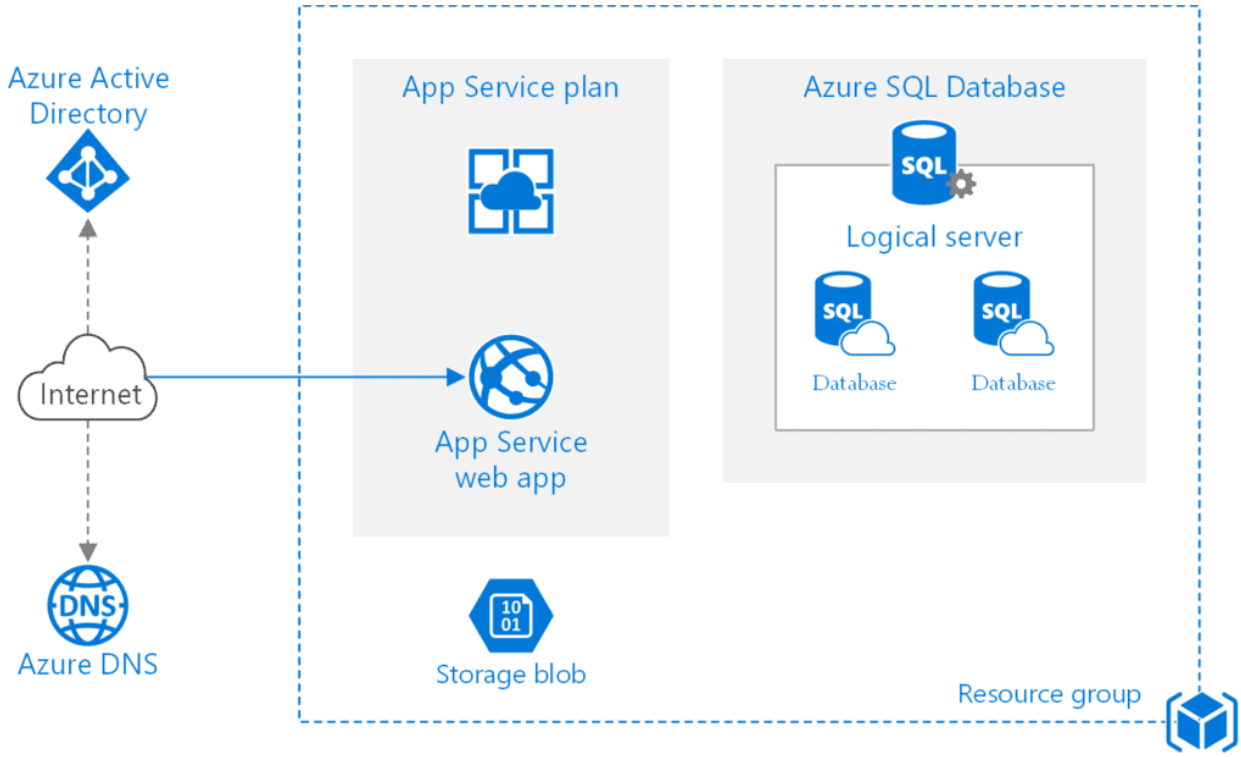
With **Microsoft Azure Solutions Architect Design**, you'll learn to migrate on-premises Hyper-V Virtual Machines to Azure with the **Azure Migrate**

- Use Azure Migration: Server Migration tool.
- Locate the Virtual Machines that you want to migrate.
- Start replicating the VM.
- Implement a test migration to make sure everything is working fine.
- Run a full VM migration.



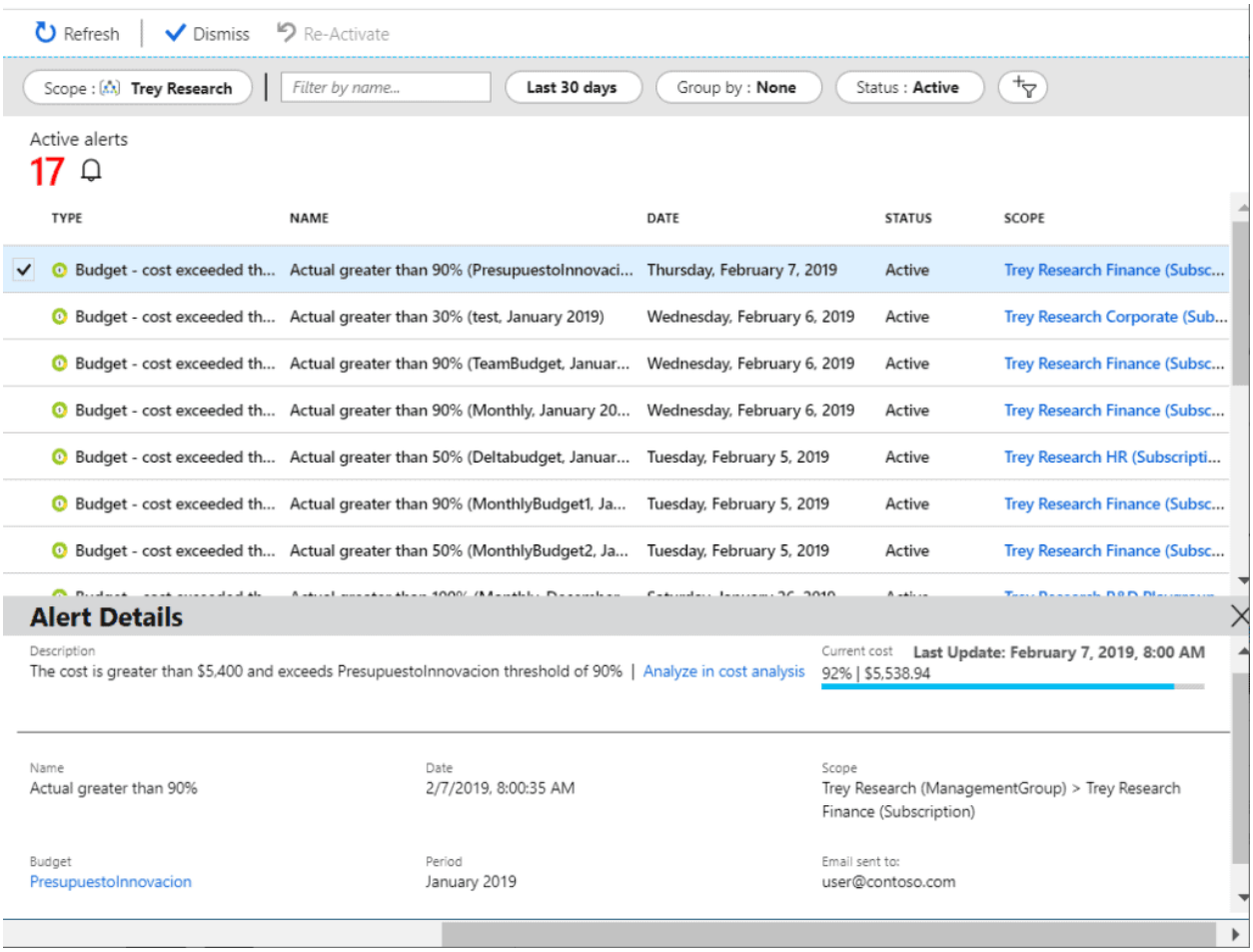
2) Implementing Azure SQL Database-Based Applications

Azure SQL Database is a clever and extensible relational database service built for the cloud. It is always up to date with AI-powered and computerized features that enhance performance and longevity for you. And, you can focus on building new applications without fear about storage size or resource management. Make your app development fast on the cloud using the latest SQL Server capabilities and never worry about update, upgrade, or end of support again.



3) Managing Budgets And Alerts In Azure Cost Management

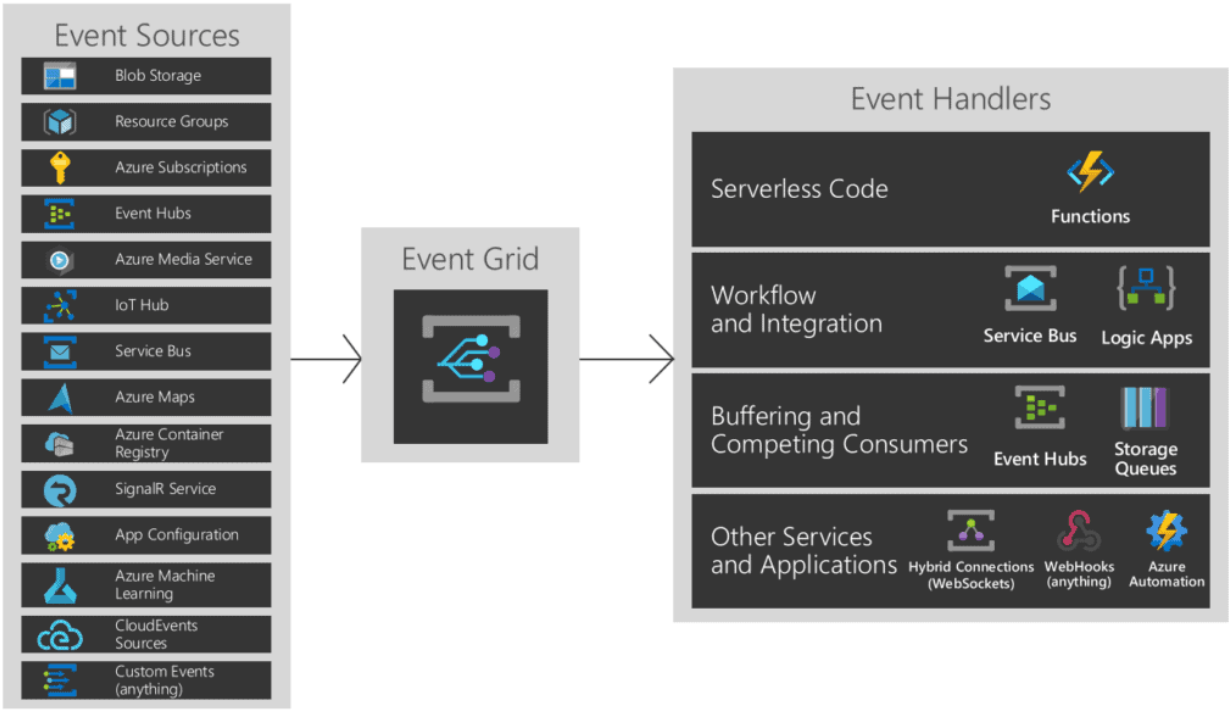
Here, you'll learn and use the price administration alerts to monitor your Azure usage and spending. Cost alerts are intensively generated based on the Azure resources consumed. All active cost administration and billing alerts are shown by Alerts together in one place.



4) Implement Azure Logic Apps Integration With Azure Event Grid

With **Microsoft Azure Solutions Architect Design,** the event grid is a new application service that connects applications to talk with each other in a distributed environment. This way of working decouple application components enabling more scalability, extensibility, and maintainability. Normally it is almost like a message queue service, similar to Azure Service Bus Topics, enabling a publish or subscribe model.

Azure Event Grid is a kind of heterogeneous messaging service that is built to allow event-based architectures similar to those used with Microservices architectures to be built more easily.

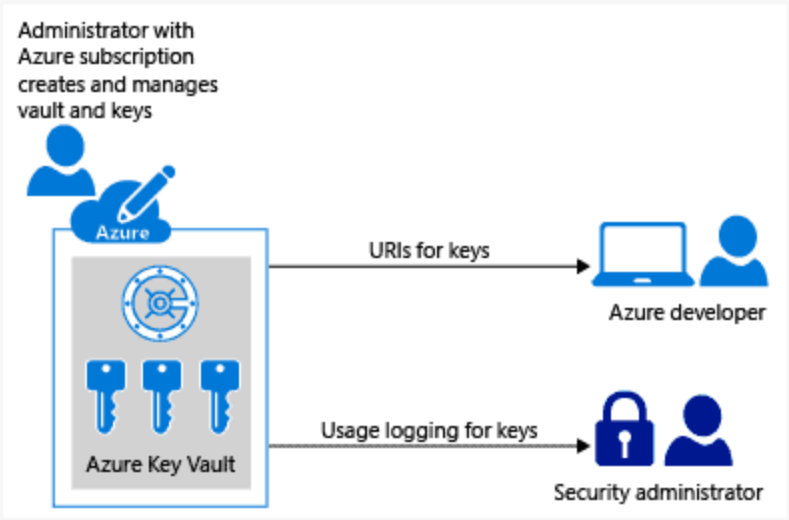


5) Creating And Managing Secrets In Azure Key Vault

An application needs connection strings, service passwords, and other secret configuration values to do its job. Reserving and handling secret values are risky, and every usage generates the likelihood of leakage. Using managed identities for Azure resources, Azure Key Vault enables your Azure web applications to access secret configuration values easily and securely without any need to store any kind of secrets in your source control or configuration.

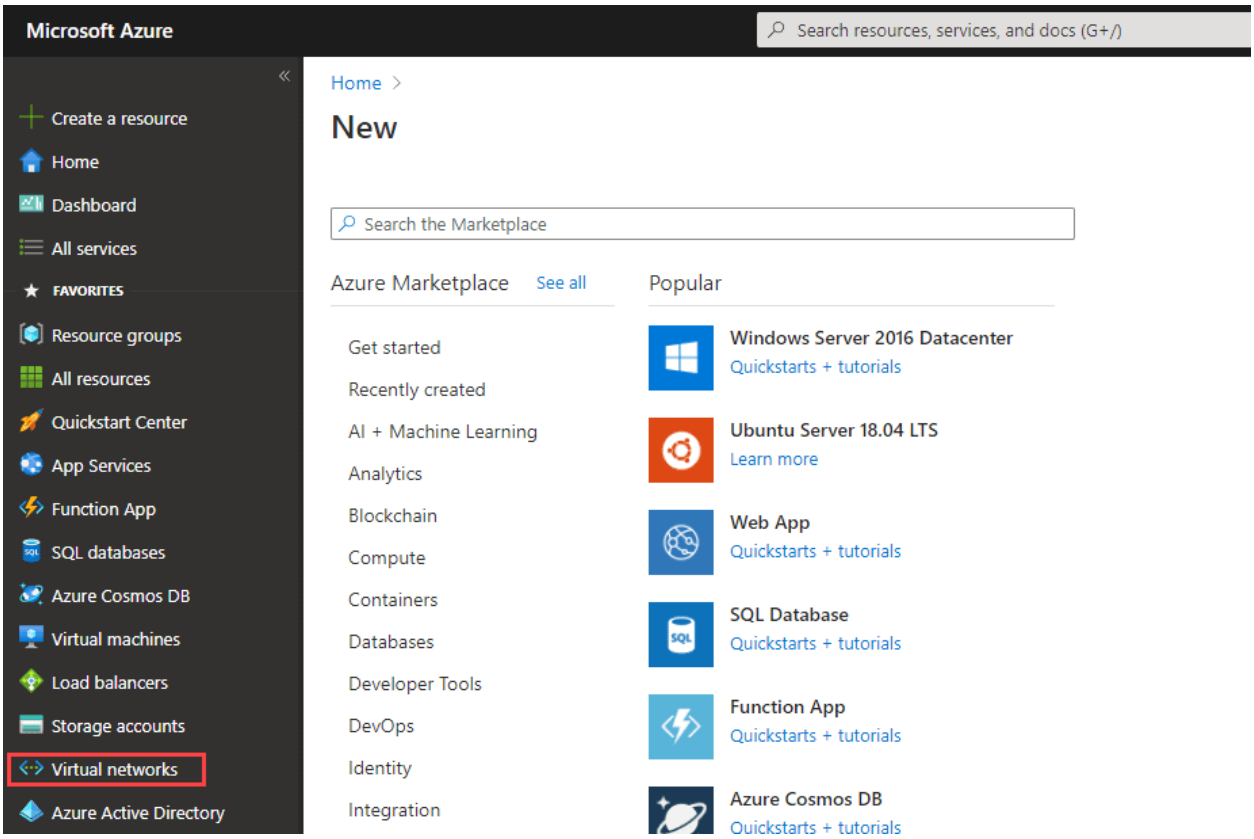
In this module, you will:

- Inspect the types of information that can be stored in Azure Key Vault
- Develop an Azure Key Vault to safeguard secret configuration values
- Allow secure access to the vault from an Azure App Service web application with managed identities for Azure resources
- Deploy a web application to retrieve secrets from the vault



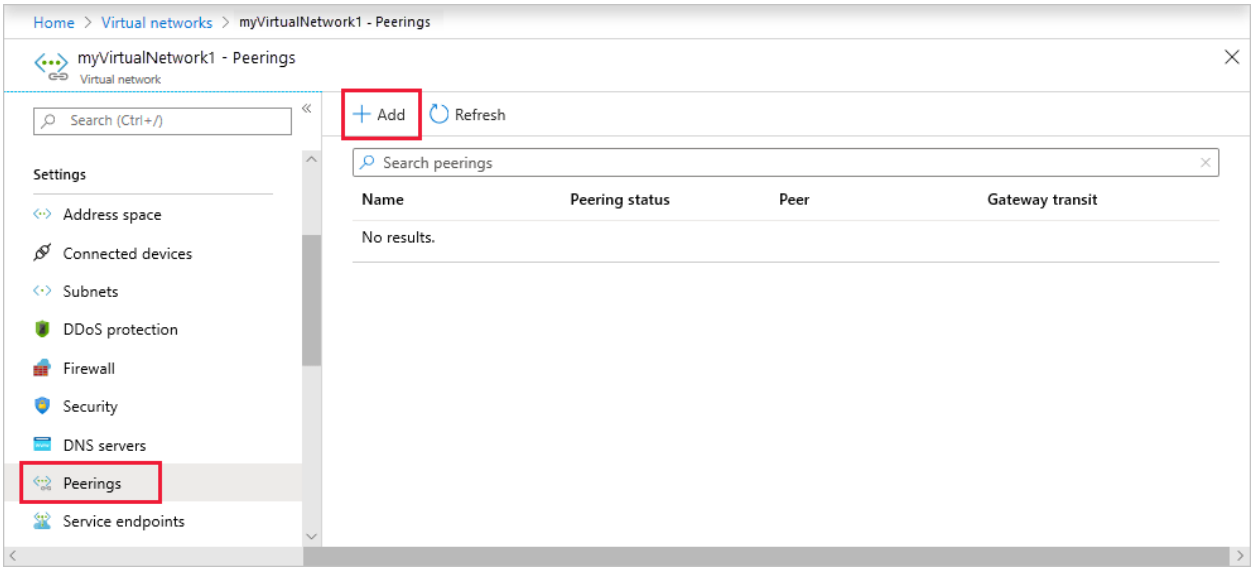
6) Creating a Virtual Network using Azure Portal & PowerShell

Here, you'll learn to create a virtual network using the Azure portal and PowerShell. Azure VNet is the fundamental building block for your private network in Azure. It enables many sorts of Azure resources, like VM, to securely communicate with one another, on web, and on-premises networks. A VNet is like a traditional network that you would have operated in your own data center but VNet brings with it some additional benefits of Azure's infrastructure such as scale, availability, and isolation. Here, you will also learn to create a virtual network using the Azure portal.



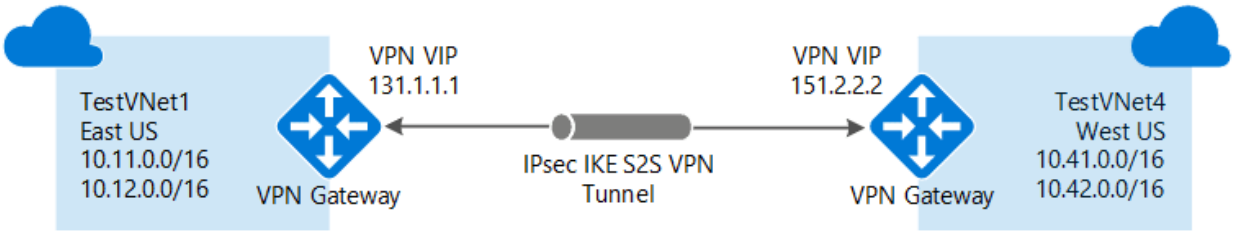
7) VNet Peering Using Azure Portal

Here, you'll learn to connect virtual networks with VNet peering. The VNet can be in the same region (VNet Peering) or different regions (Global VNet peering). Once virtual networks peer, the resources in both virtual networks can talk with each other.



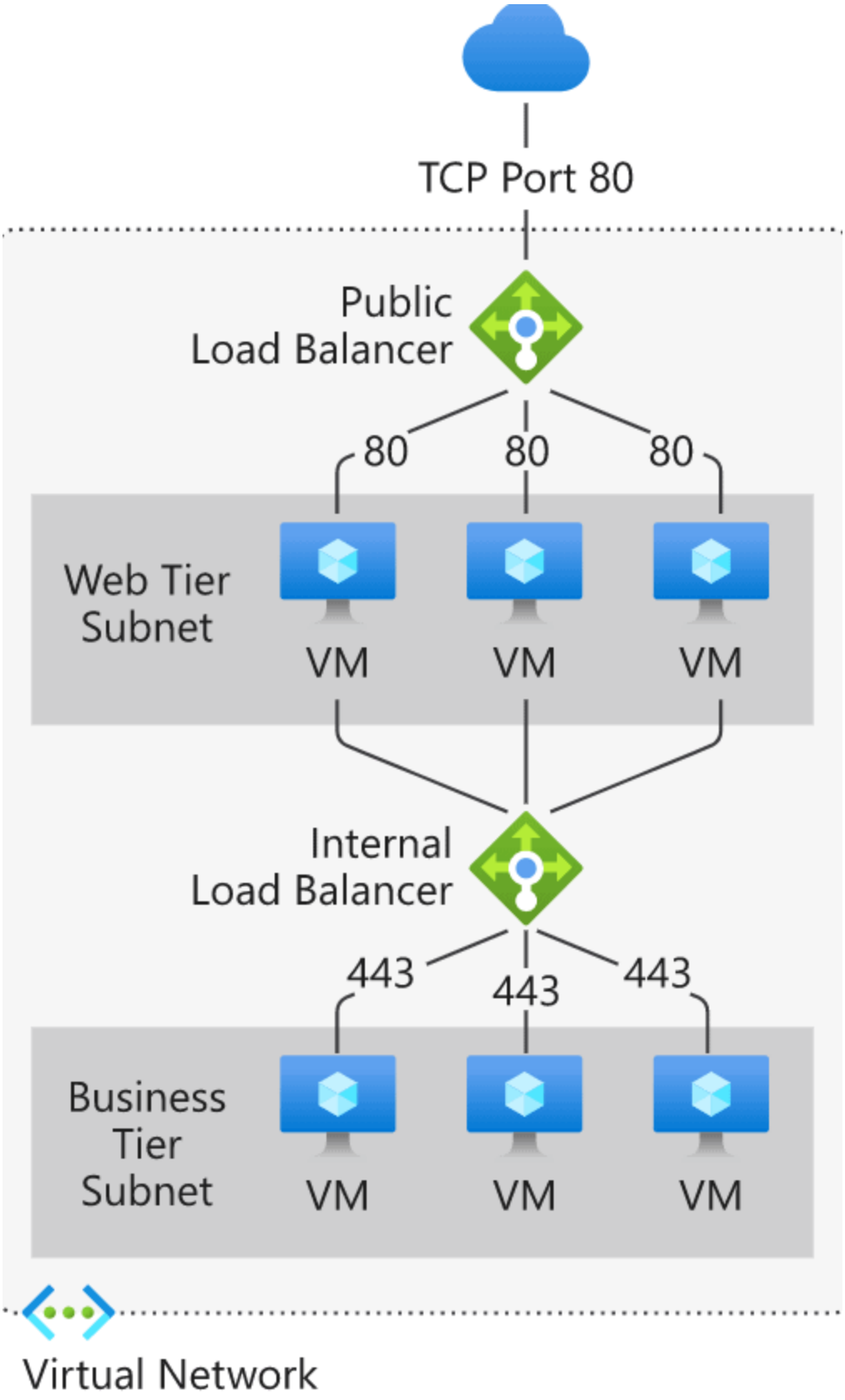
8) VNet-VNet VPN Gateway Connection

This Azure Solutions Architect activity guide will help you to connect VNets by using the VNet-to-VNet type of connection. VNets can be of different subscriptions and from different regions. Creating a VNet-to-VNet connection is a simple way to connect a virtual network to another virtual network.



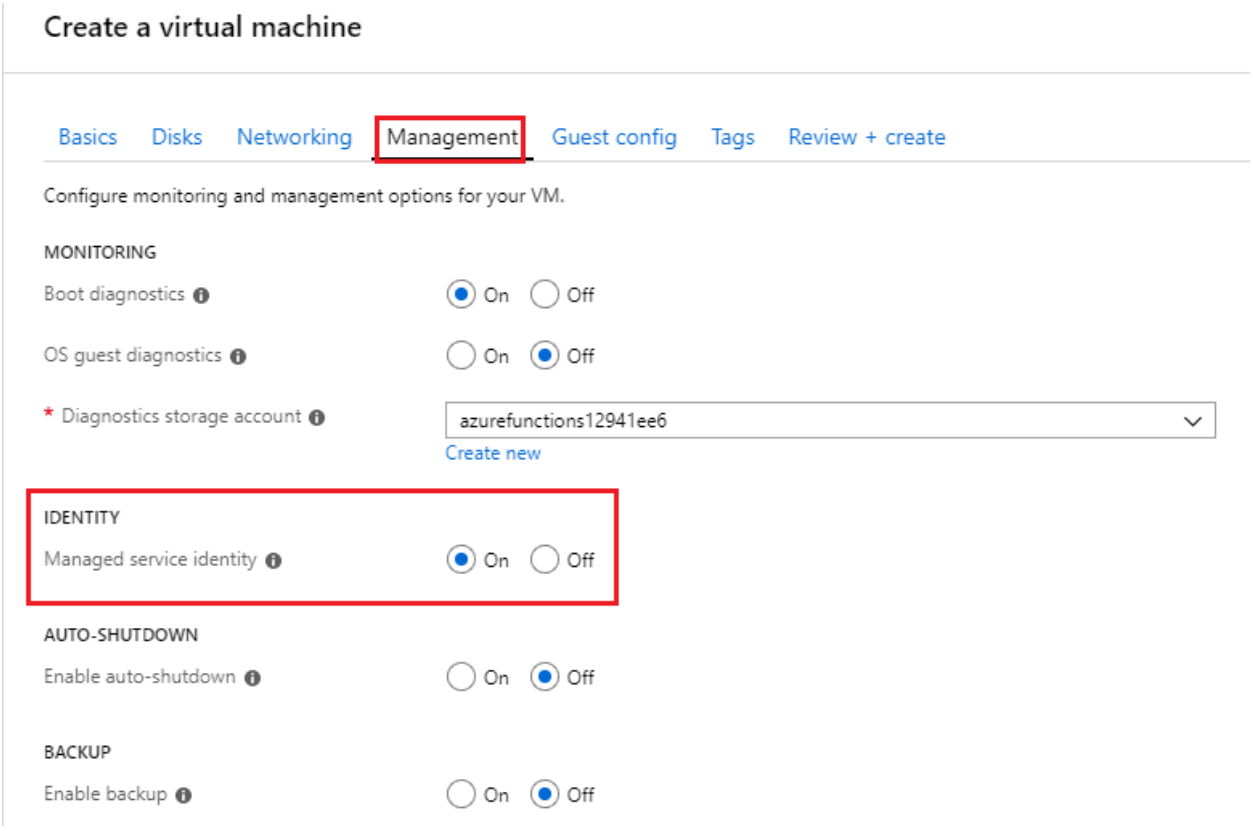
9) Load Balancer And Traffic Manager In Azure

Here, you'll learn to create a load balancer and traffic manager in Azure. ***Load balancing*** refers to evenly distributing the network traffic load across a group of backend resources or servers. Azure Traffic Manager is a DNS-based load balancer that enables you to distribute traffic optimally to services across global Azure regions and simultaneously providing high availability and responsiveness.


TCP Port 80
Public
Load Balancer
80
80
80
Web Tier
Subnet
VM
VM
VM
Internal
Load Balancer
443
443
443
Business
Tier
Subnet
VM
VM
VM
Virtual Network

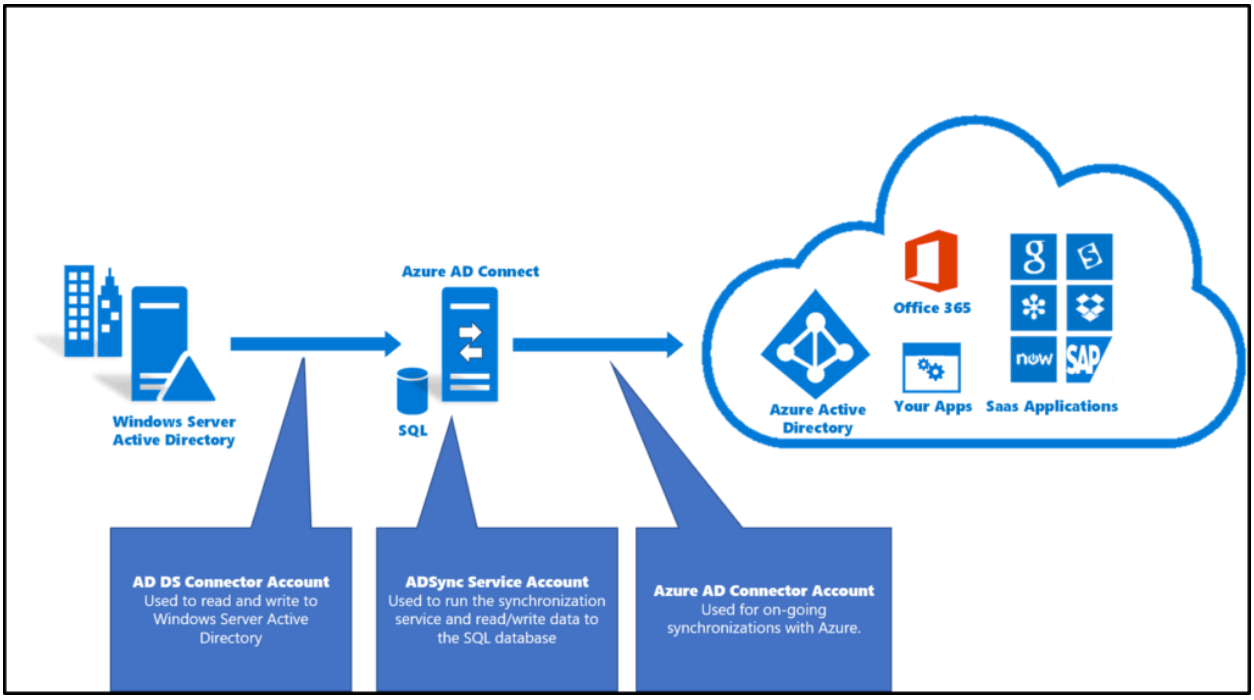
10) Implementing user-assigned managed identities for Azure resources

Managed identities for Azure resources provide services with a managed identity in Azure Active Directory. You can use this ID to authenticate to services that support Azure AD authentication without any need for credentials in your code.



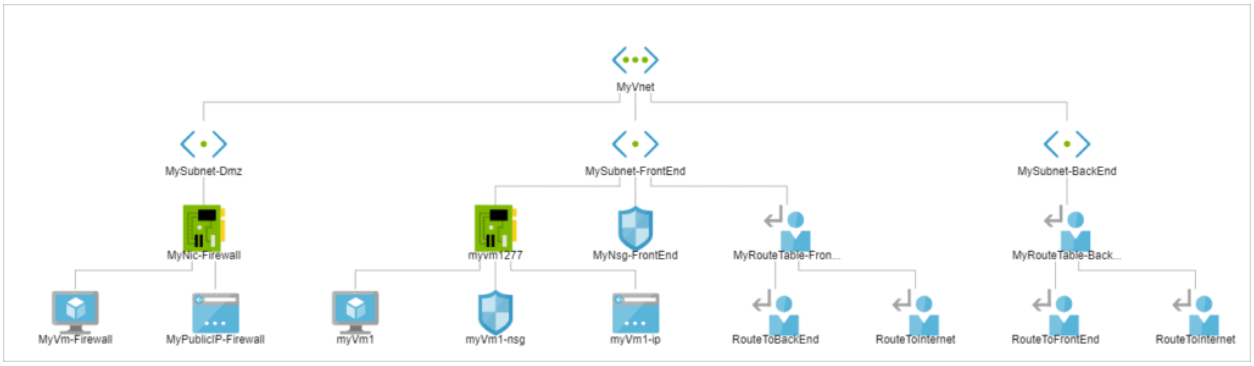
11) Microsoft Azure Directory Synchronisation

Azure AD or Azure Active Directory is a **fully managed multi-tenant service** from Microsoft offering the **identity and access capabilities** for apps running in Microsoft Azure and on-premises environments. Its name sometimes leads to wrong conclusions about what Azure AD really is. Therefore, to avoid any confusion, understand that **Azure AD is not Windows Server Active Directory** running on Virtual Machines in Microsoft Azure.



12) Network Watcher In Azure

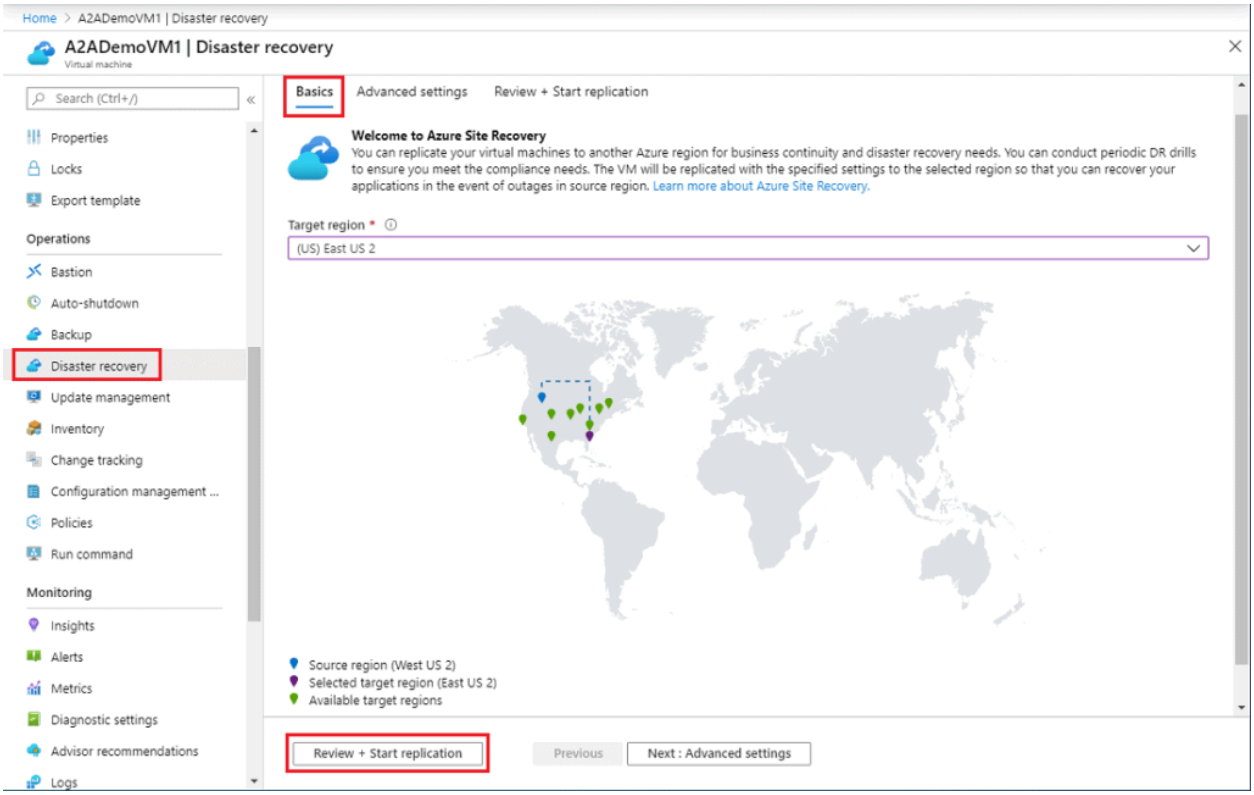
Azure Network Watcher provides tools to view metrics, monitor, diagnose, and enabling or disabling logs for the resources in an Azure VNet. Network Watcher is a service to monitor and repair the network health of IaaS (Infrastructure-as-a-Service) products, including VMs, VNets, Load Balancers, Application Gateway, etc.
Note: It is will not work for PaaS monitoring or Web analytics.



13) Virtual Machine Replication via Azure Site Recovery

The Azure Site Recovery service helps in BCDR (business continuity and disaster recovery) strategy by making your organization's application online during planned and unplanned outages. Site Recovery manage and orchestrate disaster recovery of on-premises and Azure VM, including replication, failover, and recovery.

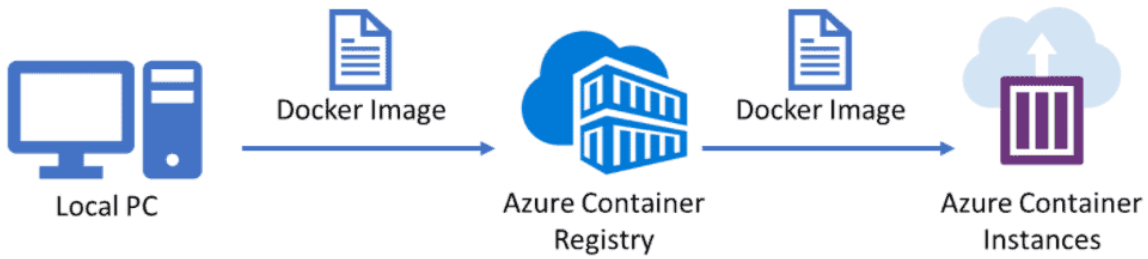
This quickstart describes setting up disaster recovery for an Azure Virtual Machine by replicating it to a secondary Azure region. Generally, default settings are used to enable replication.



14) Deploy containers to Azure Container Instances (ACI)

Azure Container Instances (ACI) is a managed service that allows you to run containers directly on the Microsoft Azure public cloud, without requiring the use of virtual machines (VMs).

With Azure Container Instances, you don't have to provision underlying infrastructure or use higher-level services to manage containers.



15) Deploy containers to Azure Kubernetes Service (AKS) clusters

Azure Kubernetes Service (AKS) simplifies deploying a managed Kubernetes cluster in Azure by offloading the operational overhead to Azure. As a hosted Kubernetes service, Azure handles critical tasks, like health monitoring and maintenance.