**AZURE**

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**What is AZURE 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.

**Address space:** When creating a VNet, you must specify a custom private IP address space using public and private (RFC 1918) addresses.

**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 that is appropriate for organization’s internal network.

**Regions:** VNET is scoped to a single region/location; however, multiple virtual networks from different regions can be connected together using **Virtual Network Peering**.

**Azure VNET Peering**

Virtual network peering enables you to seamlessly connect networks in Azure Virtual Network.

Azure supports the following types of peering:

**Virtual network peering:** Connect virtual networks within the same Azure region.

**Global virtual network peering:** Connecting virtual networks across Azure regions.

**BENEFITS OF VNET PEERING –**

* A low-latency, high-bandwidth connection between resources in different virtual networks.
* The ability for resources in one virtual network to communicate with resources in a different virtual network.
* The ability to peer virtual networks created through the Azure Resource Manager.
* The ability to peer a virtual network created through Resource Manager to one created through the classic deployment model.
* No downtime to resources in either virtual network when creating the peering, or after the peering is created.

**Gateways and on-premises connectivity**

* Each virtual network, including a peered virtual network, can have its own gateway. A virtual network can use its gateway to connect to an on-premises network.
* When you configure both options for virtual network interconnectivity, the traffic between the virtual networks flows through the peering configuration.
* You can also configure the gateway in the peered virtual network as a transit point to an on-premises network. In this case, the virtual network that is using a remote gateway can't have its own gateway. A virtual network has only one gateway.

