Virtual Machine:

1. **Image:** Deployed onto VM, the OS
2. **Network**
3. **Block storage:** store VM and app data

When creating virtual network for VM, specify a subnet

* Azure can generate it by itself though

**Create from Portal:**

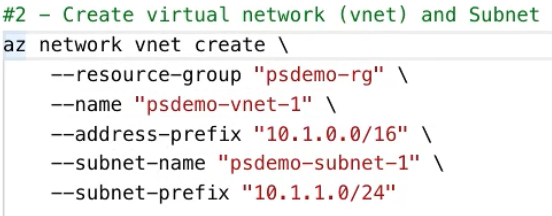
1. **Virtual Network:** VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks.  
   1. Address Space:  
      A custom private IP address space using public and private (RFC 1918) addresses.  
      Azure assigns resources in a virtual network a private IP address from the address space that you assign.  
      For example, if you deploy a VM in a VNet with address space, 10.0.0.0/16, the VM will be assigned a private IP like 10.0.0.4.
   2. Subnet:  
      Enables us 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.  
      We can deploy Azure resources in a specific subnet.  
      Like in a traditional network, subnets allow us to segment VNet address space into segments that are appropriate for the organization's internal network.  
      This also improves address allocation efficiency. Securing resources: Network Security Groups.
      1. Name
      2. Address Range
2. **Virtual Machine**
   1. Managed storage
   2. Make sure to select inbound ports (specify RDP in case of Windows VM, SSH for Linux, but even stuff like HTTP, HTTPS, MS SQL are available)
   3. Post config stuff:
      1. Backups: Whole VM snapshots
      2. Managed Service Identity: Configure VM with Azure Active Directory
      3. Boot diagnostics: Logs, screenshots taken from VM (placed into Storage Account)

Note: When creating Linux VM, we can use an SSH public key, instead of passwords for authentication.

# Create Linux VM with AzureCLI

(also works with –-n and –-l shorthands)

(az group list -o table)



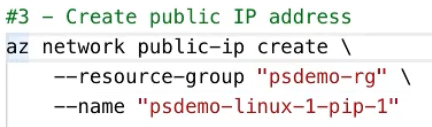
**useful later on:**

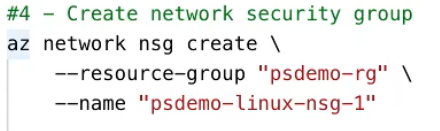
*az network vnet check-ip-address*

Check if a private IP address is available for use within a virtual network.

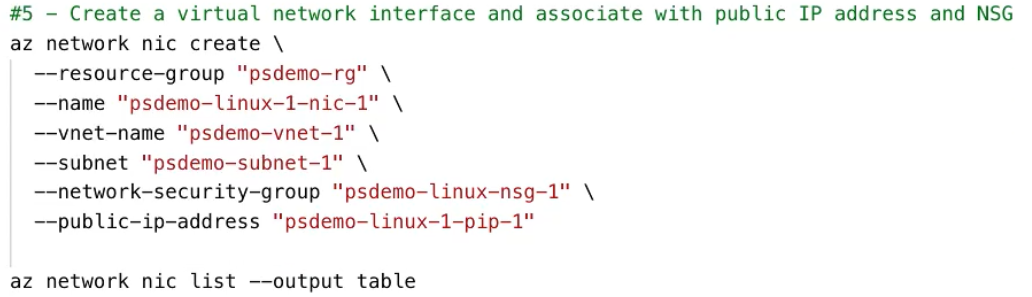
*az network vnet list (--output table)*

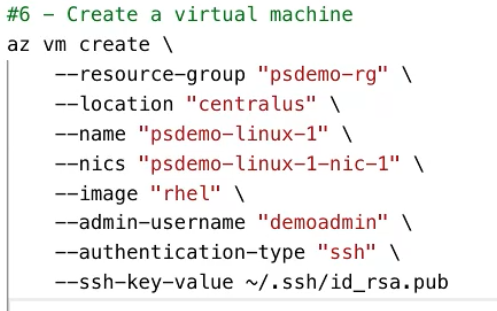
List virtual networks.



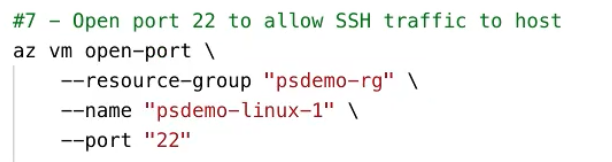


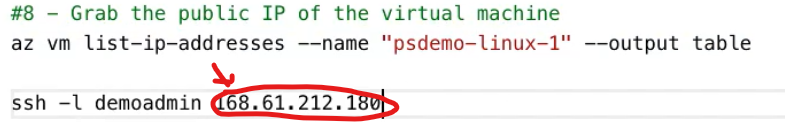
(az network nsg list)



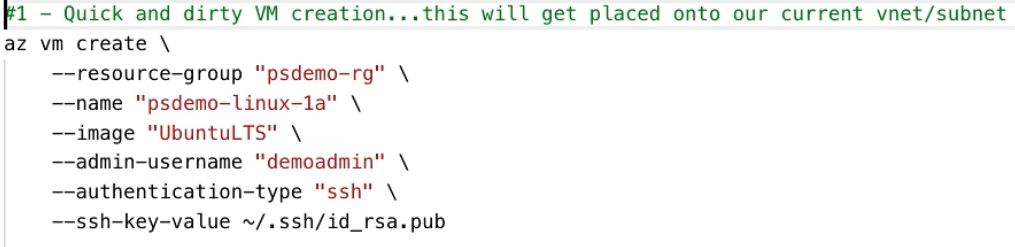


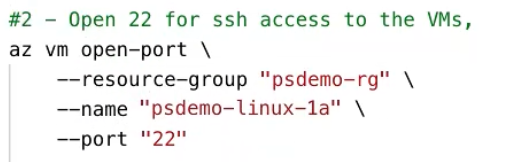
If things get a bit confusing: 

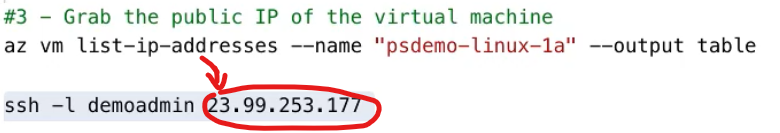




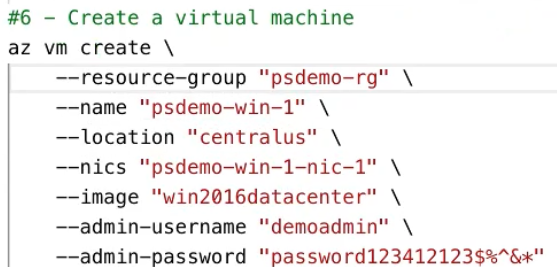
# Create Linux VM with AzureCLI less explicitly







If trying to create a Windows VM:



# Create Linux VM with PowerShell

