

# VMWARE HORIZON CLOUD SERVICE ON MICROSOFT AZURE

Complete the following tasks to prepare your Microsoft Azure subscription and network for the deployment of VMware Horizon® Cloud Service™. Ensure every step is completed as described below to complete a successful deployment.

## Setup Checklist

HORIZON CLOUD CONTROL PLANE REQUIREMENTS	
<input type="checkbox"/>	Active My VMware account to log in to the Horizon Cloud Control Plane.
MICROSOFT AZURE SUBSCRIPTION REQUIREMENTS	
<input type="checkbox"/>	Valid Microsoft Azure subscription in a supported Microsoft Azure environment (Public Azure, Azure China, Azure Germany and Azure Government).
<input type="checkbox"/>	Valid Microsoft Azure administrative privileges in Microsoft Azure subscription. For additional information, see <a href="#">Get Started with Role-Based Access Control in the Azure portal</a> .
<input type="checkbox"/>	Minimum Microsoft Azure capacity available for Horizon Cloud infrastructure in addition to expected Desktop/App workload. Note that as long as this capacity is made available, Horizon Cloud will automatically deploy these VMs and no manual installation is required. <ul style="list-style-type: none"> <li>• Deployment Engine/"Jumpbox" (Transient) – 1 x Standard_F2</li> <li>• Node/Management Node – 1 x Standard_D3_v2</li> <li>• External VMware Unified Access Gateway™ (optional) – 2 x Standard_A4_v2</li> <li>• Internal VMware Unified Access Gateway™ (optional) – 2 x Standard_A4_v2</li> <li>• Base images, Desktops and RDSH farm (See Horizon Cloud Base Image, Desktops and Farms section.)</li> </ul>
<input type="checkbox"/>	Service principal and authentication key created. For additional details, see <a href="#">Use portal to create an Azure Active Directory application and service principal that can access resources</a> .
<input type="checkbox"/>	Service principal must be assigned Contributor role at the subscription level.
<input type="checkbox"/>	Required resource providers registered in Microsoft Azure subscription.
<input type="checkbox"/>	Microsoft Azure subscription ID, directory ID, application ID and key identified.
NETWORK REQUIREMENTS	
<input type="checkbox"/>	Microsoft Azure Virtual Network (VNet) created in desired Microsoft Azure region with applicable address space to cover required subnets. For additional details, see <a href="#">Azure Virtual Network</a> .
<input type="checkbox"/>	3 non-overlapping address ranges in CIDR format, reserved for subnets <ul style="list-style-type: none"> <li>• Management subnet – /27 minimum</li> <li>• Tenant subnet – /27 minimum with /24 - /22 preferred, based on number of Desktops and RDS servers</li> <li>• DMZ subnet – /28 minimum when Unified Access Gateway is deployed (optional)</li> </ul> Subnets can either be created manually on the VNet or by Horizon Cloud during deployment. If using manually created subnets, no other resources can be attached.
<input type="checkbox"/>	NTP server(s) available and accessible from Horizon Cloud Node and Unified Access Gateways.
<input type="checkbox"/>	Configure the Virtual Network (VNet) DNS server, pointing to a valid DNS server that can resolve both internal machine names and external names.
<input type="checkbox"/>	Outbound internet access on the Microsoft Azure Virtual Network (VNet) to specific DNS names, that must to be resolvable and reachable using specific ports and protocols. This is required for deployment and ongoing operations, see <a href="#">Horizon Cloud DNS, Ports, Protocol Requirements</a>
<input type="checkbox"/>	Proxy server information if required for outbound internet access on the Microsoft Azure Virtual Network (VNet), that is used during deployment and ongoing operations of the Horizon Cloud environment (optional)

<input type="checkbox"/>	Microsoft Azure VPN/Express Route configured (optional)
<input type="checkbox"/>	FQDN for external and or internal user access (Required for Unified Access Gateway).
<input type="checkbox"/>	Public DNS record created for external end-user access that matches the FQDN, pointing to Microsoft Azure external load balancer (optional). For additional details, see <a href="#">Configuring a custom domain name for an Azure cloud service</a> .
<input type="checkbox"/>	Internal DNS record created for internal end-user access that matches the FQDN, pointing to the Microsoft Azure internal load balancer (optional).
<input type="checkbox"/>	Certificate(s) for Unified Access Gateway in pem format matching the FQDN (Required for Unified Access Gateway).
<input type="checkbox"/>	Two-Factor Authentication to an on-premises RADIUS authentication server (optional) <ul style="list-style-type: none"> <li>• DNS Addresses for Unified Access Gateway to resolve the name of the authentication server</li> <li>• Routes for Unified Access Gateway to resolve network routing to the authentication server</li> </ul>
<b>ACTIVE DIRECTORY REQUIREMENTS</b>	
<input type="checkbox"/>	One of the following supported Active Directory configurations: <ul style="list-style-type: none"> <li>• On-premises Active Directory Server connected via VPN/Express Route</li> <li>• Active Directory Server located in Microsoft Azure</li> <li>• Microsoft Azure Active Directory Domain Services</li> </ul>
<input type="checkbox"/>	Supported Windows Active Directory Domain Services (AD DS) domain functional levels: <ul style="list-style-type: none"> <li>• Windows Server 2003</li> <li>• Windows Server 2008 R2</li> <li>• Windows Server 2012 R2</li> <li>• Windows Server 2016</li> </ul>
<input type="checkbox"/>	Domain bind account <ul style="list-style-type: none"> <li>• Active Directory domain bind account (a standard user with read access) that has permission to read objects in AD</li> <li>• Set account password to "Never Expire"</li> </ul>
<input type="checkbox"/>	Auxiliary domain bind account (Cannot use the same account as above) <ul style="list-style-type: none"> <li>• Active Directory domain bind account (a standard user with read access) that has permission to read objects in AD.</li> <li>• Set account password to "Never Expire"</li> </ul>
<input type="checkbox"/>	Domain join account <ul style="list-style-type: none"> <li>• Active Directory domain join account which can be used by the system to perform Sysprep operations and join computers to the domain, typically a new account ("domain join user account")</li> <li>• Is a member of the Horizon Cloud Administrators Group</li> <li>• This account requires the following Active Directory permissions: List Contents, Read All Properties, Read Permissions, Reset Password, Create Computer Objects, Delete Computer Objects, and Write All Properties.</li> <li>• Set account password to "Never Expire"</li> </ul>
<input type="checkbox"/>	Auxiliary domain join account (Optional, cannot use the same account as above) <ul style="list-style-type: none"> <li>• Active Directory domain join account which can be used by the system to perform Sysprep operations and join computers to the domain, typically a new account ("domain join aux user account")</li> <li>• Is a member of the Horizon Cloud Administrators Group</li> <li>• This account requires the following Active Directory permissions: List Contents, Read All Properties, Read Permissions, Reset Password, Create Computer Objects, Delete Computer Objects, and Write All Properties.</li> <li>• Set account password to "Never Expire"</li> </ul>
<input type="checkbox"/>	Active Directory groups <ul style="list-style-type: none"> <li>• Horizon Cloud Administrators – Active Directory security group for Horizon Cloud administrators; contains the Horizon Cloud administrative users and domain join account. This group is added to the "Super Administrators" role in Horizon Cloud.</li> <li>• Horizon Cloud Users – Active Directory security group for the users which will have access to Desktops and RDS session-based desktops and published applications in Horizon Cloud.</li> </ul>

<input type="checkbox"/>	Active Directory organizational unit(s) (OU) for Desktops and RDS session-based desktops and/or published applications
PORTS AND PROTOCOL REQUIREMENTS	
<input type="checkbox"/>	Specific ports and protocols are required for ongoing operations of the Horizon Cloud environment, see <a href="#">Horizon Cloud DNS, Ports, Protocol Requirements</a>
HORIZON CLOUD BASE IMAGE, DESKTOPS and FARMS	
<input type="checkbox"/>	Base for Master Image – One of the supported Microsoft Azure VM configurations <ul style="list-style-type: none"> <li>• Standard_D4_v3 or Standard_D2_v2</li> <li>• Standard_NV6</li> </ul>
<input type="checkbox"/>	Desktop Model selection for the Desktop Assignments – One or more of the supported Microsoft Azure VM configurations <ul style="list-style-type: none"> <li>• Standard_A1_v2</li> <li>• Standard_A2_v2</li> <li>• Standard_A4_v2</li> <li>• Standard_A8_v2</li> <li>• Standard_F1</li> <li>• Standard_F2</li> <li>• Standard_F4</li> <li>• Standard_F8</li> <li>• Standard_D2_v3</li> <li>• Standard_D4_v3</li> <li>• Standard_D8_v3</li> <li>• Standard_E2_v3</li> <li>• Standard_E4_v3</li> <li>• Standard_E8_v3</li> <li>• Standard_NV6</li> <li>• Standard_NV12</li> <li>• Standard_NV24</li> </ul>
<input type="checkbox"/>	RDS Server Model selection for the RDS Farms – One or more of the supported Microsoft Azure VM configurations <ul style="list-style-type: none"> <li>• Standard_D2_v2</li> <li>• Standard_D3_v2</li> <li>• Standard_D4_v2</li> <li>• Standard_D2_v3</li> <li>• Standard_D4_v3</li> <li>• Standard_D8_v3</li> <li>• Standard_E2_v3</li> <li>• Standard_E4_v3</li> <li>• Standard_E8_v3</li> <li>• Standard_NV6</li> <li>• Standard_NV12</li> <li>• Standard_NV24</li> </ul>
LICENSING	
<input type="checkbox"/>	Microsoft Windows 10 Licensing
<input type="checkbox"/>	Microsoft Windows Server 2012 R2, Server 2016 Licensing and/or Server 2019 Licensing
<input type="checkbox"/>	Microsoft Windows RDS Licensing Servers – VMware recommends redundant licensing servers for high availability.
<input type="checkbox"/>	Microsoft RDS User and/or Device CALs

## Deployment Workflow

After completing the preceding checklist, follow the [Suggested Workflow for Your First Horizon Cloud Pod in Microsoft Azure](#) to deploy and start administering the service.

## Reference Architecture

Use the architecture diagram below for reference. For additional details, see the [Horizon Cloud Administration Guide](#).

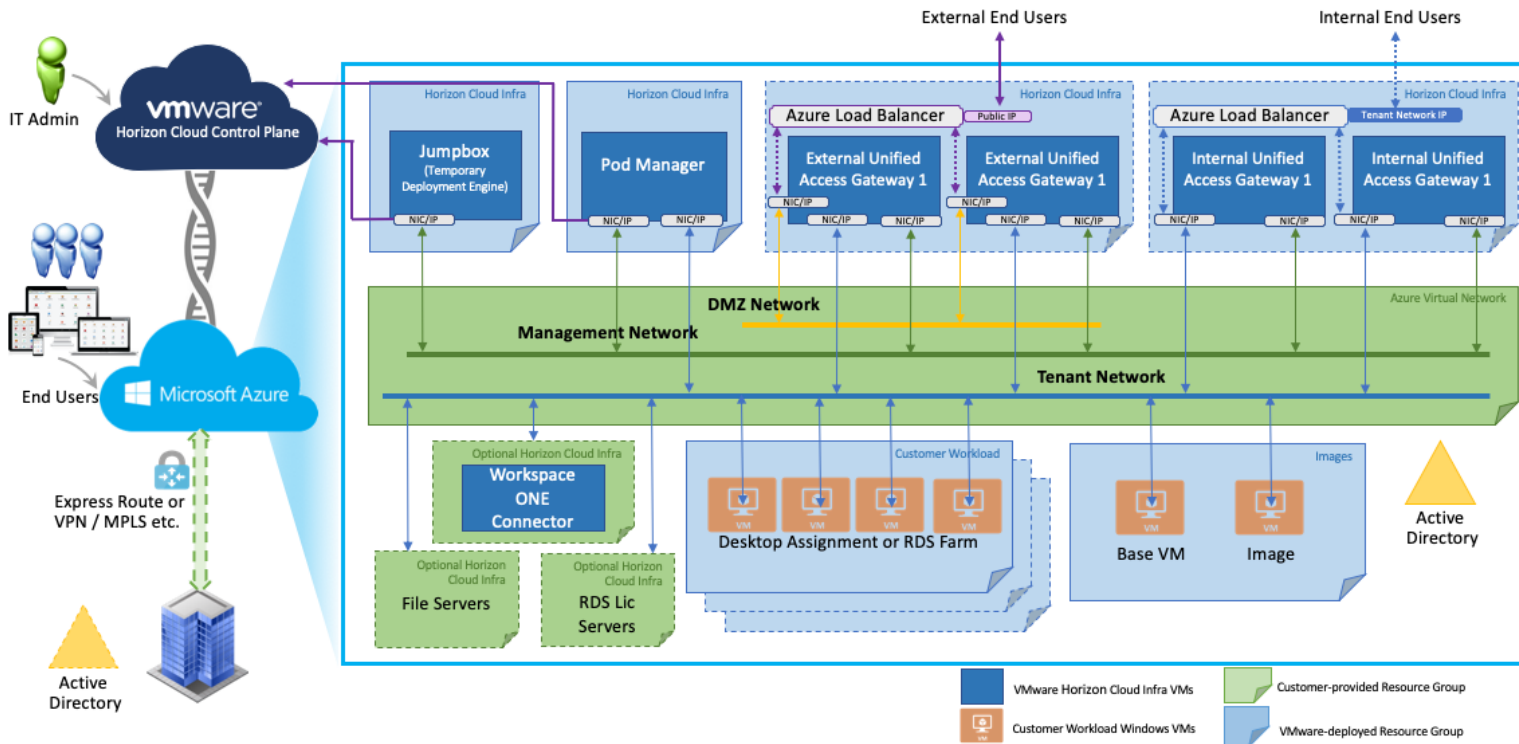


Figure 1: Horizon Cloud Service on Microsoft Azure Architecture

## Resources

See the following resources for additional information.

- [Horizon Cloud Deployment Guide](#)
- [Horizon Cloud Administration Guide](#)
- [VMware Unified Access Gateway](#)
- [Quick Start Tutorial for VMware Horizon Cloud on Microsoft Azure](#)
- [Microsoft Azure Resource Manager overview \(15 minutes\)](#)
- [Create Microsoft Azure Service Principal \(5 minutes\)](#)
- [Microsoft Azure Virtual Network \(VNet\) \(6 minutes\)](#)
- [Microsoft Azure Virtual network peering \(8 minutes\)](#)