This PDF was generated on January 2019 and was current at the time of download. To check for the latest version please visit <u>https://techzone.vmware.com/quick-start-tutorial-series-vmware-horizon-7</u>

Quick-Start Tutorial for VMware Horizon 7

VMwareHorizon

VMWare[®] Confidential | © VMware, Inc.

Quick-Start Tutorial for VMware Horizon 7

Table of contents

Quick-Start Tutorial Series for VMware Horizon 7	4
Technical Introduction and Features	4
Overview	4
Advantages of Horizon 7	4
Packaging and Licensing	5
Features	5
Components and Architecture	7
Introduction	7
About Components Underlying Horizon 7	7
About Core Horizon 7 Components	8
About Components That Enhance Horizon 7	0
Installation	2
Introduction to Installation	2
Download Horizon 7 Installers	2
Infrastructure Requirements	5
Create VMs for the Connection Server and Composer10	6
Install Horizon Connection Server	7
Set Up the Composer Database	6
Install the Composer	2
Initial Configuration 4	2
Introduction	2
Create a Domain User Account and OUs in AD for Clone Operations	2
Add the Product License Key	0
Add a vCenter Server Instance	2
Add an Instant-Clone Domain Administrator	8
Create an Event Database	0
Creating Single-User Desktop Pools	2
Introduction	2
Deploy an Instant-Clone Desktop Pool	2
Push a New Image to an Instant-Clone Desktop Pool	0
Deploy a Full-Clone Desktop Pool	5
Deploy a Linked-Clone Desktop Pool	3
Creating RDSH-Published Desktops and Applications	8
Introduction	8

Quick-Start Tutorial for VMware Horizon 7

	Create an Instant-Clone RDSH Server Farm	128
	Deploy an RDSH-Published Desktop Pool	145
	Publish Applications Hosted on RDSH Servers	151
	Perform Maintenance on a Server Farm	155
Pr	ovisioning Users and Accessing Virtual Desktops	162
	Introduction to User Provisioning	162
	Entitle End Users to Application Pools or Desktop Pools	162
	Configure Unauthenticated Access to Published Applications	166
	Use Horizon Client from a PC or Laptop	172
	Use the HTML Access Web Client	179
	Use Horizon Client from a Mobile Device	186
Tr	oubleshooting	199
	Introduction to Troubleshooting	199
	Monitor Remote Sessions	199
	Verify Prerequisites for Using the Horizon Help Desk Tool	201
	Use the Help Desk Tool to Restart a User's Virtual Desktop	204
Sı	ummary and Additional Resources	209
	Summary	209
	Additional Resources	209
	About the Authors and Contributors	210

Quick-Start Tutorial Series for VMware Horizon 7

Technical Introduction and Features

Overview

The *Quick-Start Tutorial for VMware Horizon 7* provides a technical overview of the VDI (virtual desktop infrastructure) and published applications components of VMware Horizon[®] 7. Published applications are offered through Remote Desktop Session Host (RDSH). This is done through a single platform, which simplifies desktop administration and operations, and enhances user experience. In comparison to physical desktops, delivering Horizon 7 virtual desktops from centralized VMware vSphere[®] servers enhances the security of applications and data and improves IT responsiveness, while at the same time reducing costs. The user enjoys a consistent and responsive experience across devices and locations, while maintaining IT-approved levels of customization.

JMP - Next-Generation Desktop and Application Delivery Platform

JMP (pronounced *jump*), which stands for Just-in-Time Management Platform, represents capabilities in VMware Horizon 7 Enterprise Edition that deliver Just-in-Time Desktops and Apps in a flexible, fast, and personalized manner. JMP is composed of the following VMware technologies:

- VMware Instant Clone Technology for fast desktop and RDSH provisioning
- VMware App Volumes[™] for real-time application delivery
- VMware Dynamic Environment Manager[™] for contextual policy management

JMP allows components of a desktop or RDSH server to be decoupled and managed independently in a centralized manner, yet reconstituted on demand to deliver a personalized user workspace when needed. JMP is supported with both on-premises and cloud-based Horizon 7 deployments, providing a unified and consistent management platform regardless of your deployment topology. The JMP approach provides several key benefits, including simplified desktop and RDSH image management, faster delivery and maintenance of applications, and elimination of the need to manage "full persistent" desktops.

Purpose

This tutorial is provided to help you evaluate Horizon 7. The first chapter provides an overview of the key VDI and RDSH features. Subsequent chapters contain exercises to guide you through the basic installation and initial configuration processes, and to explore key features and benefits.

Note: This tutorial is designed for evaluation purposes only. It uses the minimum required resources for a basic deployment and does not explore every feature. Do not use this evaluation environment as a template for a production environment. For information beyond the considerations of this tutorial, see VMware Horizon 7 Documentation.

Audience

This tutorial is intended for IT administrators, architects, engineers, and product evaluators who want to install Horizon 7 and deploy a VDI environment. Both current and new users can benefit from using this tutorial. You should be familiar with VMware vSphere and VMware vCenter Server[®]. Familiarity with other technologies is also helpful, including networking and storage in a virtual environment, Active Directory, identity management, directory services, and RSA SecurID.

Advantages of Horizon 7

VMware Horizon 7 is a centralized desktop virtualization solution that enables organizations to deliver virtualized desktop services and applications to end users from centralized VMware vSphere servers. Horizon 7 has advantages for both end users and IT administrators. End users are no longer restricted to one specific machine, and can access their system and files across supported devices and locations. As an IT administrator, you can use Horizon 7 to simplify and automate the management of desktops and applications, and you can securely deliver desktops as a service to users from a central location. You can quickly create virtual desktops on demand based on location and profile.

A single administration console provides detailed levels of control, allowing you to customize the end-user experience, access, and personalization to support corporate policy. End users get a familiar, personalized environment that they can access from any number of devices anywhere throughout the enterprise or from remote locations. And as an administrator, you have centralized control, efficiency, and security by storing desktop data in the data center.

VMWare[°] Confidential | © VMware, Inc.

Packaging and Licensing

Horizon 7 is available in three editions—Standard, Advanced, and Enterprise—plus a Linux option. Each edition builds successively on the ones before, extending the capabilities with additional components and products.

VMware Horizon 7 Enterprise Edition is required for Just-in-Time Desktops and Apps. This edition includes Dynamic Environment Manager, for managing applications and Windows environment settings. Dynamic Environment Manager can manage applications installed in the base image of a virtual desktop machine or RDSH server, and it can manage applications provided by VMware App Volumes.

App Volumes delivers applications that are not in the golden VM image. Application containers, called AppStacks, are assigned to a user, group, OU, or machine and mounted each time the user logs in to a desktop. With this strategy, user changes can persist between sessions.

App Volumes can also provide user-writable volumes, which allow users to install their own applications and have those applications follow the user as they connect to different virtual desktops.

For more information, see VMware Workspace ONE and VMware Horizon Packaging and Licensingand Comparison Table for Horizon 7 Editions.

Features

The features of Horizon 7 include:

- Horizon Virtualization Pack for Skype for Business: Skype for Business is a unified communications platform that provides multiple forms of communication, such as instant messaging, VoIP (voice over IP), file transfer, web conferencing, voice mail, and email. You can provide an optimized Skype for Business solution to virtual desktops in your production environment to improve the user experience, secure collaboration, simplify management, and reduce costs. For more information, see Horizon Virtualization Pack for Skype for Business.
- Horizon Help Desk Tool: The Horizon Help Desk Tool enables you to troubleshoot issues without specialists, including Linux desktop sessions. You can use this tool to search for users, find their sessions, initiate Microsoft Remote Assistance, and send user messages. If the issue requires it, you can use this tool to disconnect from a session, log out, and reset desktops to resolve the issue. The Horizon Help Desk Tool is available in the Horizon Console, and displays metrics for Skype for Business pairing status, application and desktop session states, and disk IOPS data. For more information, see Using Horizon Help Desk Tool in Horizon Console.
- **Instant Clone Technology**: Instant Clone Technology, a key component of JMP (Just-in-Time Management Platform), provides the ability to rapidly create and provision virtual desktops based on a snapshot of a golden image. You can create nonpersistent desktops that maintain user customization, user-installed applications, and more, from session to session. The desktop itself exists only until the user logs out, and then it is destroyed. New desktops are recreated from the latest golden image. This eliminates many routine maintenance tasks, such as patching, and this in turn simplifies management. Instant clones are ideal for deploying pools of floating desktops. You can also use Instant Clone Technology in combination with VMware Dynamic Environment Manager and VMware App Volumes to rapidly create desktops that appear to be persistent. You can create pools where desktops are provisioned proactively, or create and provision desktops on demand for users to log in to. For more information, see VMware Horizon 7 Instant-Clone Desktops.
- **Cloud Pod Architecture**: Cloud Pod Architecture (CPA) works with Horizon 7 to provide cross-data-center administration, flexible user-to-desktop mapping, high-availability desktops, and disaster recovery capabilities. For more information, see Administering Cloud Pod Architecture in Horizon 7.
- **Blast Extreme**: Blast Extreme is a remote display protocol option, in addition to PCoIP and Microsoft RDP. Blast Extreme enables your users to connect to virtual desktops or RDSH applications through HTML Access or through VMware Horizon Client. Blast Extreme is based on the H.264 codec that supports the broadest range of client devices and can be set as the default for pools, farms, and entitlements. Blast Extreme automatically chooses UDP/TCP based on bandwidth, packet loss, delay, and jitter, which you can override with Blast GPO settings if need be. For more information, see Blast Extreme Display Protocol in Horizon 7.
- Linux virtual desktop capabilities: VMware Horizon 7 for Linux includes key features such as USB redirection, Clipboard redirection, client-drive redirection (CDR), and HTML access with audio capabilities. Horizon 7 continues to support Linux-based virtual desktops, including Red Hat Enterprise Linux (RHEL), CentOS 64-bit operating systems, Ubuntu, SUSE, and NeoKylin, as well as additional capabilities such as copying and pasting text between Linux virtual desktops and the client machine. You can access the Horizon Help Desk Tool to troubleshoot Linux desktop sessions, available from the Horizon Console. For more information, see Setting Up VMware Horizon 7 for Linux Desktops.
- Horizon 7 Published Applications: Both Horizon 7 and VMware Horizon Apps can deliver virtualized Windows

applications and shared desktop sessions from Windows Server instances using Microsoft Remote Desktop Services (RDS). You can publish business-critical Windows apps alongside SaaS and mobile apps in a single digital workspace, easily accessed with single sign-on from any authenticated device or OS.

- Security capabilities: Horizon 7security features enable you to:
 - $\circ~$ Use two-factor authentication, such as RSA SecurID, RADIUS, or smart cards to log in
 - Use Active Directory accounts when provisioning remote desktops and applications in environments that have readonly access policies for Active Directory
 - $\circ~$ Use SSL tunneling to ensure that all connections are encrypted
 - Use VMware vSphere High Availability to ensure automatic failover in case of system failure
 - Prevent the server connection URL and Active Directory domains from being revealed in Horizon Client interfaces.
 - Use vSphere with Horizon 7 to encrypt full-clone virtual machines and manage the encryption using policies, independent of the guest OS of the virtual machines. For more information, see VMware vSphere.
- **True single sign-on**: True SSO separates the process of authentication from that of access to desktops and applications. True SSO enables you to authenticate to VMware Workspace ONE[®] Access or VMware Workspace ONE[®], and still access Horizon 7 desktops and applications without having to authenticate to Active Directory (AD). Users can also log in to Workspace ONE Access using non-AD methods, including biometrics, RSA SecurID, and RADIUS.
 - True SSO simplifies the login process to Windows desktops and published applications, especially when authenticating against third-party systems using non-AD methods. This results in a seamless process when accessing multiple desktops and published applications, which can make a significant difference to end users.
 - $\circ~$ You can enable True SSO on a global level or on a pool level in Horizon 7.
- **Ease of management**: Horizon 7 provides centralized virtual desktop management, which enables you to: • Use Active Directory to manage policies and access to remote desktops and applications
 - Use the Horizon Administrator console to manage remote desktops and applications
 - Use golden images to guickly create and provision pools of desktops

 - $\circ~$ Send updates and patches to virtual desktops without affecting user settings, data, or preferences
 - $\circ~$ Specify which types of USB devices end users can connect to
 - Split a composite device that provides multiple functions, such as both video input and storage, and allow one function but not the other (such as allowing video input, but not storage)
 - Integrate with Workspace ONE Access so that end users can access remote desktops through the Workspace ONE Access user portal on the Internet
- Familiar desktop experience: Horizon 7 continues to provide a familiar desktop experience for end users, including the ability to:
 - Print from a virtual desktop to any local or network printer that is defined on the client device, which solves compatibility issues without requiring additional print drivers on the virtual machine
 - Use location-based printing on most client devices to map to printers that are physically near the client system (which do require print drivers in the virtual machine)
 - Use multiple monitors, and adjust the display resolution and rotation separately for each monitor, with the PCoIP or Blast Extreme remoting protocols
 - $\circ\,$ Access USB devices and other peripherals connected to the local device that displays your virtual desktop
 - $\circ~$ Work with rich 3D graphics

Components and Architecture

Introduction

Horizon 7 contains key components and integrated products that work together.

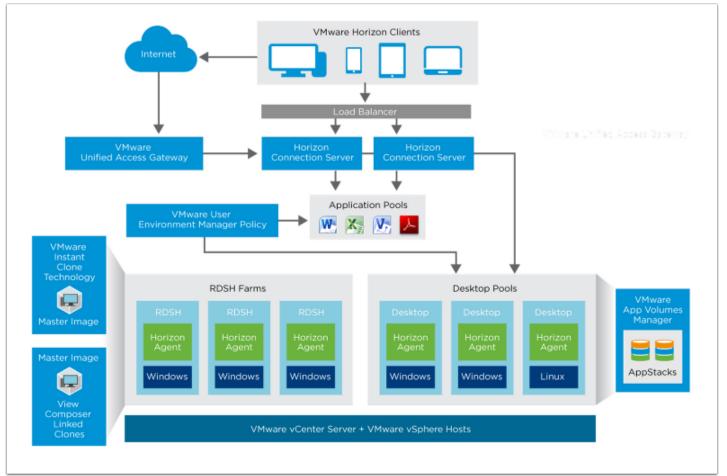


Figure: Horizon 7 Architecture Overview

This figure shows how Horizon components—such as Connection Server, Dynamic Environment Manager, App Volumes, vCenter Server, and vSphere—work together to provide access to virtual desktop pools, RDSH desktop and application pools, and more.

The core Horizon 7 components—including Connection Server, Horizon Client, and Horizon Agent—are described in About Core Horizon 7 Components.

The underlying infrastructure components—including vCenter Server and vSphere—are described in About Components Underlying Horizon 7.

Dynamic Environment Manager, App Volumes, and Unified Access Gateway are described in About Components That Enhance Horizon 7.

About Components Underlying Horizon 7

A number of key components provide the underlying foundation for Horizon 7.

VMware vSphere Foundation for Horizon 7

VMware vSphere is a suite of virtualization products that provides a scalable platform for running virtual desktops and applications. The VMware vSphere Web Client is a browser-based application that you can use to configure the host and to operate its virtual machines.

For more information, see VMware vSphere Documentation.

VMware vCenter Server

VMware vCenter Server, included in the vSphere suite, is the central management console for your vSphere infrastructure, virtual machines, and VMware ESXi[™] servers. A vCenter Server can be quickly set up and deployed, using host profiles or Linux-based virtual appliances. The vCenter Server console provides centralized control and visibility into servers that host virtual desktops, ESXi servers, virtual machines, storage, networking, and other critical elements of your virtual infrastructure. You can use vCenter Server to allocate resources for improved performance.

For more information, see VMware vSphere Documentation.

VMware ESXi

VMware ESXi is a bare-metal hypervisor that can be installed directly onto your physical server, and partitioned into multiple virtual machines. Because ESXi runs on bare metal without an operating system, the footprint is reduced, giving a very small surface for possible malware and over-the-network attacks. This also simplifies deployment and configuration by reducing the number of configuration options.

For more information, see the VMware ESXi Installation and Setup.

About Core Horizon 7 Components

With Horizon 7, IT departments can run virtual machine (VM) desktops and applications in the data center and remotely deliver virtual desktops and applications to employees as a managed service. One advantage of Horizon 7 is that remote desktops and applications follow the end user regardless of device or location. Users can access their personalized virtual desktops or published applications from company laptops, their home PCs, thin client devices, Macs, tablets, or smartphones. The benefits to administrators include centralized control, efficiency, and security with desktop data stored in the data center.

Horizon 7 contains a number of core components.

Horizon Administrator

Horizon Administrator is the classic web-based administrative console for managing users and Horizon 7 resources such as desktops and applications. Horizon Administrator is included when you install a Connection Server. With the use of Horizon Administrator, you can centrally manage thousands of virtual desktops from a single location.

Updated 6/22/2018 11:23 AM 🛛 👌	Dashboard						
Sessions 3 Problem vCenter VMs 0					Updated 6/22/20	18 11:23:57 AM	2
Problem RDS Hosts 0 Events 0 1 8	System Health			Machine Status			
System Health 📄 🔲 🔳 😰 32 0 0 0	 View components Connection Servers 		<u>.</u>	vCenter VMs	RDS Hosts	Others	
inventory	Event database			Preparing		0	
-	▼ RDS Farms		::	🕨 🚞 Problem Machin	ies	0	
💦 Dashboard 🎇 Users and Groups	RDS-IC-Farm			▶ 🔄 Prepared for us	e	6	
Catalog	 vSphere components Datastores 						
Resources	ESX hosts						
Farms	vCenter Servers		•				
🚰 Machines 🚐 Persistent Disks							
Monitoring	Datastores						
Policies					Ū!	= Low on fre	e space
View Configuration	Datastore	vCenter Server		Path	Capacity (GB)	Free Space	(GB)
	t3600-01-Beta-VDI-2-1	۲.			-) 2,047	1,893	4
	-01-Beta-VDI-2-3	r, r	/		1,023	969	
	t3600-01-Beta-VDI-3-2	٣	/		2,047	2,028	

Figure: VMware Horizon Administrator

Horizon Console

Horizon Console is the latest version of the Web interface through which you can create and manage virtual desktops and published desktops and applications. Horizon Console integrates VMware Horizon Just-in-Time Management Platform (JMP) Integrated Workflow features for managing workspaces.

Horizon Console includes an almost complete implementation of Horizon 7 features. You can use Horizon Administrator, the classic web interface, to access those very few features that are not yet available in Horizon Console.

To access Horizon Console, you log in to the Horizon Administrator, and click the Horizon Console button. You are authenticated through SSO. Horizon Console appears in a new tab, so both consoles are at your fingertips. You can also access Horizon Console from your browser: https://<connectionserver>/newadmin.

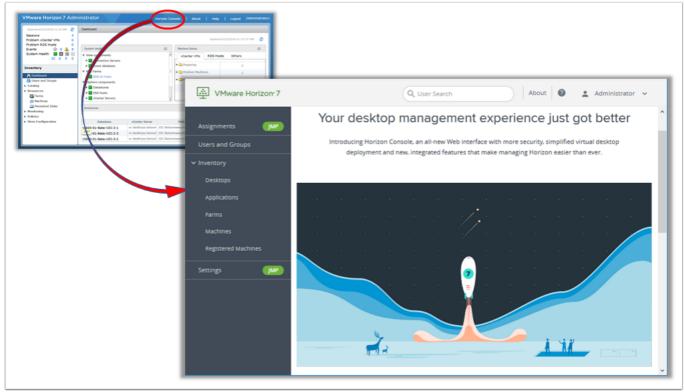


Figure: VMware Horizon Console

Horizon Console includes an easier desktop and application deployment process, just-in-time desktop delivery, and a more secure Web interface. Horizon Console also supports the following features:

- Entitlements: User, group, desktop, and application assignments
- Authentication: Remote access authentication and unauthenticated access for published apps
- Virtual desktops: Virtual desktop pool creation for automated, full clones, and instant clones, including dedicated assignments
- Published desktops: Published desktops with manual and instant-clone farms
- Published applications: Published applications with manual and existing application pools
- Virtual machines: VMs registered both with and without vCenter Server

For more information, see VMware Horizon 7 documentation.

Horizon Connection Server

The Horizon Connection Server brokers client connections by authenticating users and directing incoming user desktop and application requests. Users connect to a Connection Server to access their virtual desktops and native, virtual, or RDSH-based applications. The Connection Server provides the following management capabilities:

- Authenticating users
- Entitling users to specific desktops, applications, and pools

VMWare[®] Confidential | © VMware, Inc.

- Managing local and remote desktop and application sessions
- Establishing secure connections between users and desktops or applications
- Enabling single sign-on
- Setting and applying policies
- Managing an instant-clone engine

For more information, see Horizon 7 Architecture Planning and Horizon 7 Installation.

Composer (Optional)

The optional Horizon Composer is not required for instant clones. It enables you to create and manage pools of *linked-clone* desktops. The Composer server works with the Connection Servers and a vCenter Server. Composer is the legacy method that enables scalable management of virtual desktops by provisioning from a single golden image using **linked-clone technology**.

Horizon Agent

Horizon Agent communicates between Horizon Client and virtual desktops or RDSH servers. You must install Horizon Agent on all virtual machines managed by vCenter Server so that Connection Server can communicate with the virtual machines. Horizon Agent also provides features such as connection monitoring, client drive redirection, virtual printing, and access to locally connected USB devices. This process can be simplified by installing Horizon Agent on the golden image used to deploy virtual machines to a group of users.

VMware Horizon Client

VMware Horizon[®] Client for Windows, Windows 10 UWP, macOS, iOS, Linux, or Android is installed on every endpoint. This enables your end users to access their virtual desktops and published applications from a variety of devices such as smartphones, zero clients, thin clients, PCs, laptops, and tablets.

Horizon Client enables users to do the following:

- Connect to a Connection Server or a VMware Unified Access Gateway™ appliance
- Log in to their remote desktops in the data center
- Edit the list of servers that they connect to

You can choose between multiple download processes. One option is to allow your end users to download Horizon Client directly from **Download VMware Horizon Clients**. Another option is to determine which Horizon Client each end user can download, and store the Horizon Client installers on a local storage device using the View user portal (the default landing page for Connection Server).

For more information, see Configure the VMware Horizon Web Portal Page for End Users.

About Components That Enhance Horizon 7

Horizon 7 contains many products and components that can interoperate to extend and enhance your implementation. Access to and availability of these components varies, based on the edition of Horizon 7 installed. For more information about the different editions, see VMware Workspace ONE and VMware Horizon Packaging and Licensing.

VMware Unified Access Gateway

VMware Unified Access Gateway (formerly called VMware Access Point) provides a secure gateway that allows users to access their desktops and applications from outside a corporate firewall. You can design a Horizon 7 deployment that uses Unified Access Gateway for secure external access to internal Horizon 7 desktops and applications. Unified Access Gateway appliances typically reside in a demilitarized zone (DMZ) and act as a proxy host for connections inside your trusted corporate network. This structure shields Horizon 7 virtual desktops, servers, applications, and Connection Servers from the public Internet, adding an extra layer of security. In addition to security, Unified Access Gateway features include:

- Authentication in the DMZ
- Smart-card support
- Native RSA SecurID and RADIUS authentication
- Blast Extreme traffic directed to port 443 by default

• Security Assertion Markup Language (SAML) assertions

For more information, see the Unified Access Gateway: Overview and Use Cases video series.

VMware App Volumes

VMware App Volumes is a real-time Windows application-delivery and application life-cycle-management solution. App Volumes uses application containers called *AppStacks*, which are virtual disks that contain all of the components that are required to run an application, such as executables and registry keys. When an AppStack is deployed, it is available for use within seconds without end-user installation. Applications can be deployed once to a single central file and accessed by thousands of desktops. This simplifies application maintenance, deployment, and upgrades.

App Volumes also provides user-writable volumes for a limited number of users. Writable volumes are a mechanism to capture user-installed applications that are not, or cannot be, delivered by AppStacks. This reduces the likelihood that persistent desktops would be required for a use case. The user-installed applications follow the user as they connect to different virtual desktops.

For more information, see VMware App Volumes Documentation.

VMware Dynamic Environment Manager

VMware Dynamic Environment Manager (formerly called User Environment Manager) is a scalable solution for profile and policy management for virtual, physical, and cloud-based Windows desktop environments. You can use Dynamic Environment Manager to simplify your policy management by replacing and unifying problematic, unmaintainable, or complex login scripts and profile logic. You can map environmental settings, such as networks and printers, and dynamically apply end-user security policies and customizations. Dynamic Environment Manager ensures that each end user's settings and customizations follow them from one location to the next, regardless of the endpoint used to access their resources.

For more information, see VMware User Environment Manager 9.2 Technical Overview.

VMware Workspace ONE Access

VMware Workspace ONE Access (formerly called VMware Identity Manager) is a solution that provides application provisioning, a self-service catalog of applications and virtual desktops, conditional access controls, and single sign-on (SSO) for software as a service (SaaS), web, and cloud resources. Workspace ONE Access gives your IT team a central place to manage user provisioning and access policy with directory integration, identity federation, and user analytics.

For more information, see the VMware Workspace ONE Access (Identity Manager) Documentation.

Installation

Introduction to Installation

The exercises in this Installation chapter are sequential and build upon one another, so make sure to complete each exercise before moving on to the next.

Most of the exercises explain, step by step with screenshots, exactly what to do. The one exception is the exercise **Create VMs for** the Connection Server and Composer. The steps in that exercise point to another, companion document, which in turn includes detailed steps and screenshots. That exercise uses vSphere Web Client and involves vSphere tasks rather than showing you how to use Horizon 7. If you are already an intermediate or expert vSphere user, you can use the exercise just to note the specifications for OS and virtual hardware to be sure you have VMs you can use to host the Horizon servers.

The exercises Set Up the Composer Database and Install the Composer are required only if you want to explore creating and using linked clones. Composer is the legacy method of optimizing your use of storage space and facilitating updates. For production environments, VMware recommends using instant clones rather than Composer linked clones.

This Installation chapter guides you through installing the necessary Horizon servers and databases. Installing and setting up Windows RDSH servers is not part of this initial installation and configuration. Setting up RDSH servers for use in linked-clone and instant-clone server farms that provide RDSH-published desktops and applications is discussed in the chapter Creating RDSH-Published Desktops and Applications.

Download Horizon 7 Installers

If you have purchased Horizon 7, you can download the installers (installation files) from the **Download VMware Horizon** page. This exercise shows you which installers to download and how to download the installers from the VMware Product Evaluation Center, which gives you a free 60-day trial.

vm ware [,]	😌 US Login 🗲 Trainin	g Community Store 41-877-486-9273 Search Q
	Home/ Evaluate VMware Products / VMware Horizon 7	Email Us 1-877-486-9273
PRODUCTS	Product Evaluation Center	I Have an Account Create an Account
SOLUTIONS	This evaluation center features technical documentation, installation demos and classes to make your Horizon evaluation a success.	Register to download your 60 day trial Email Address or Customer Number:
PROFESSIONAL SERVICES	Free Trial in German, French, Japanese, and Chinese	Password : Forgot your password?
DOWNLOADS PARTNER PROGRAMS	Image: Solution Resources Image: Solution Resources Image: Solution T Reviewer's Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation Guide Image: Solution T Upgrade Guide Image: Solution T Installation T Upgrade Guide Image: Solution T Upgrade Guide Image: Solution T Installation T Upgrade Guide Image: Solution T Upgrade Guide Image: S	Remember me Log in

1. Navigate to the Product Evaluation Center

On any web browser, navigate to the VMware Horizon 7 Product Evaluation Center, and log in. If you do not already have an account, you can create one here.

2. Note the License

License Information

OMPONENT	EXPIRATION DATE	LICENSE KEYS	
Horizon 7 Enterprise	20.0-08-12	D56	
/Mware Mirage	2010-08-12		
/Mware Identity Manager	2010-08-12		
/Mware ThinApp Client	2010-08-12		
/Mware ThinApp Virtualization Packager	2010-08-12		
/Mware vRealize Operations Manager	20 08-12		

In the Product Evaluation Center, scroll down to the License Information, and make a note of the Horizon 7 Enterprise license.

3. Download the Horizon 7 Packages

vm ware [,]	Download Packages	
	VMware Horizon Enterprise Edition	
VMWARE CLOUD	Horizon 7.E O View Agent (64-bit) 2019 05 00 175 01 222.64 MB Lexe	Manually Download
PRODUCTS	Guest agent required for each remote desktop	
D	MD5SUM(): 03b58ea02d5a6da41e903b2ab369d87e SHA1SUM(): ca5e1cb4a23808ac705708f869cf68d7660ec3e3 SHA256SUM(): fbe6cea2f2299d78f887a58fbc3be1f3e3de78ff1e1bfb85cba9e5d10f2453f4	
SUPPORT		
SOLUTIONS	Horizon 7.6 9 View Connection Server (64-bit) 2019/05/29 175 0 I 233.05 MB I exe	Manually Download
	Connection Server to provision and manage desktops	
	MD5SUM('): 90870601e104da2b5c72cdb93c6e12f4 SHA1SUM('): d724814e60637bfc0d4d1f8d0d29e8d7e40e5808 SHA256SUM('): dd92d60f65b64fe624d9c86f99761157ae876f8575a7aea7edc2946d215f5d54	
DOWNLOADS		
***	Horizon 7.5 View Composer	Manually Download
	Separate installable component to provision linked clone desktops in View Manager from a central master image	
COMPANY	MD55UM(): 0103fa8e066b5d1297342a56ac8a10e8 SHA1SUM(): 399a3e5e1b069e88c9337048a05dfe020593c0e2	
	SHA256SUM('): 5a3700ac6ce376738cec68cf5a76a096358fd3efdccd362aeeb56d552bdcff22	
	Horizon 7.5 J JMP Server	
	2019/05/20175/01102.07 MB Lexe	Manually Download
	MD5SUM(): ddec9f8eaa4ef0ab591b7ba694b12234 SHA1SUM(): 06a772fe668fd5769bb09bc836d7cf029fb00ec5	

Scroll down to Download Packages, expand the **VMware Horizon Enterprise Binaries** section, and download the following packages, and note where you store them for reference during the installation process:

- Horizon Connection Server (64-bit)
- Horizon Agent (64-bit)
- Horizon Composer

4. Download vSphere Packages

Hypervisor and Management Server Binaries	8
VMware vSphere Hypervisor (ESXi ISO) image (Includes VMware Tools)	
2017-04-19 6.5.0d 331.09 MB iso	Manually Download
Boot your server with this image in order to install or upgrade to ESXi (ESXi requires 64-bit capable	
servers). This ESXi image includes VMware Tools.	
MD5SUM('): 22d3eeb67f881be066880672a8da57e9	
SHA1SUM(¹): f656bf69a9eeb8031bbda80b3c47f9702fbaca3d	
SHA256SUM('): ad22f3653236d05f38d0816f448d8ef49b38bece96aa7318f6e8917482f3a118	
 VMware vCenter Server and modules for Windows	
2017 00 15 0.5.00 2.368 GB iso	Manually Download
Installer for VMware vCenter Server VMware Platform Services Controller VMware vSphere Update	
Manager Update Manager Download Service (UMDS) and other vCenter Server-related modules. It	
enables installation of vCenter Server on Windows (Requires a 64-bit capable server).	
MD5SUM(¹): e90ca2e0f1d4f31318ca8b6066b8ee74	
SHA1SUM(¹): 9559f8e2dd0b1db714392540c0b37feb3858ef98	
SHA256SUM('): 6e0f0fcb071b5ff7381429f5bfe35cc7de8e811a899a26743c1b9cd656dcdfcc	

If you do not already have a vSphere environment set up, scroll down and expand the **Hypervisor and Management Server Binaries** section, and download the following packages:

- VMware vSphere Hypervisor (ESXi ISO) image (Includes VMware Tools)
- VMware vCenter Server and modules for Windows

Before you can perform the exercises in this guide, you must have a VMware vSphere 6 infrastructure that contains at least one VMware ESXi host and one vCenter Server instance. This guide does not provide instructions for installing these vSphere components. For instructions see the vSphere Product Documentation.

5. Download Horizon Client

Home / VMware Horizon Clients

Download VMware Horizon Clients

5.0	connect to your VMware Horizon virtual desktop from your device of choice giving yo on-the-go access from any location.	u	entation Mobile Client Privacy
	Read More	Horizon	Community
Proc	iuct Downloads Drivers & Tools Open Source Custom ISOs		
	Product	Release Date	
~	VMware Horizon Client for Windows		
	VMware Horizon Client for Windows	2019-07-02	Go to Downloads
~	VMware Horizon Client for Windows 10 UWP		
	VMware Horizon Client for Windows 10 UWP for ARM-based devices	2019-07-02	Go to Downloads
	VMware Horizon Client for Windows 10 UWP for 32-bit x86-based devices	2019-07-02	Go to Downloads
	VMware Horizon Client for Windows 10 UWP for 64-bit x86-based devices	2019-07-02	Go to Downloads
	VMware Horizon Client for Windows 10 UWP from the Microsoft store	2019-07-02	Go to Downloads
~	VMware Horizon Client for Mac		
	VMware Horizon Client for macOS	2010-07-02	Go to Downloads

Product Resources

View My Download History

Navigate to **Download VMware Horizon Clients** and download VMware Horizon Client (64-bit). Horizon Client is required for exercises in other chapters.

Infrastructure Requirements

Before you begin the installation exercises in this guide, make sure that your environment meets the following infrastructure requirements:

- VMware vSphere and vCenter Server Before you can perform the exercises in this guide, you must have a VMware vSphere 6 infrastructure that contains at least one VMware ESXi host and one VMware vCenter Server instance. This guide does not provide instructions for installing these vSphere components. For instructions see the vSphere Product Documentation.
- Active Directory domain controller The authentication infrastructure for your setup must include Active Directory, DNS, and DHCP is required. Horizon 7 integrates with your Microsoft Active Directory, a Windows service for authenticating and authorizing users and computers, applying and enforcing security policies, and installing and updating software. The Connection Server joins to Active Directory and sets up a lightweight directory service instance for the storage of View configuration information.
- **SSL certificate** (Optional) By default, Horizon 7 includes a self-signed certificate that can be used for testing purposes. For a production environment, we recommend that you replace the self-signed certificate with an approved certificate signed by a certificate authority, a trusted entity that issues digital certificates verifying another digital entity's identity on the Internet.
- **SQL database server** This is the database server on which you will create the event database. For the example in this exercise, we used Microsoft SQL Server 2016. To simplify the setup for completing this tutorial in a lab setup, we recommend that you use the same SQL Server instance for the event database, the Composer database, and the JMP server database. For a list of databases that support all three of these components, see Database Requirements for JMP Server.

Note: You can download and install Microsoft SQL Server Management Studio Express with Advanced Services to get both database and management tools, or use an existing SQL server in your environment.

• Network - VMware recommends a network connection speed of at least 1 Gbps between all the required Horizon 7

components and desktops.

Create VMs for the Connection Server and Composer

For the exercises in this guide, you must have VMs on which to install the Connection Server, the Microsoft SQL Server database server, and, optionally, the Composer server. For this purpose, you create a VM template and clone it to create the required VMs for the server components.

Note: If you already have a vSphere environment set up and VMs with Windows Server installed, you can probably use those or clone them. If not, you can use the procedure in this exercise.

Prerequisites for Creating the Connection Server and Composer Server

To perform this exercise, you need a VMware vSphere 6 infrastructure that contains at least one VMware ESXi host and one VMware vCenter Server instance. This guide does not provide instructions for installing these vSphere components. For instructions see the vSphere Product Documentation.

1. Create a VM

Step-by-step instructions for using vSphere Web Client to create a VM are beyond the scope of this tutorial, and are already provided in a companion guide. See the section Create a Virtual Machine, in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

Use the following specifications.

Attribute	Specification

2. Install the Windows Server Operating System

Step-by-step instructions for installing the OS in a VM are beyond the scope of this tutorial, and are already provided in a companion guide. See the section Install Windows, in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop. For the Windows Operating system, we recommend using one of the following:

- Windows Server 2016 Standard (Desktop Experience)
- Windows Server 2016 Datacenter (Desktop Experience)

For a list of all possible supported operating systems, see Supported Operating Systems for Horizon Connection Server.

3. Update Windows

Step-by-step instructions for updating Windows are beyond the scope of this tutorial, and are already provided in a companion guide. See the section Update Windows and Run Ngen and DISM, in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

4. Install VMware Tools

Step-by-step instructions for installing VMware Tools are beyond the scope of this tutorial, and are already provided in a companion guide. See the section Install VMware Tools, in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

5. Change the Network Adapter to VMXNET 3

Step-by-step instructions for changing the network adapter type from E1000 to VMXNET 3 are included in the procedure Optimize the Hardware, in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

Important: Do not perform the exercises in Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop for installing the RDSH role. For the purposes of creating Horizon Connection Server, the database server, and the Composer server, the servers should not have the RDSH role installed. That role is for servers that will be used to create RDSH server farms.

6. Clone the VM to a Template

For instructions cloning a VM to a VM template, see the vSphere product documentation topic Clone a Virtual Machine to a Template.

7. Deploy VMs from the Template

Deploy VMs as needed for the following Horizon servers:

- Connection Server
- Microsoft SQL Server, if you do not already have a server to use
- Composer, if you plan to perform the exercises for creating linked clones

For instructions on deploying VMs from a VM template, see the vSphere product documentation topic Deploy a Virtual Machine from a Template.

You can edit the virtual hardware settings for the number of vCPUs and the amount of memory as you complete the Deploy Template wizard. You do not need to edit these settings, but you can if you wish. For information about minimum requirements, see the following product documentation topics:

- Hardware Requirements for Horizon Connection Server
- Hardware Requirements for Standalone View Composer

Install Horizon Connection Server

After downloading the installation files, start the installation process by installing the Connection Server on a virtual machine.

The Connection Server acts as a broker for client connections by authenticating and directing incoming user desktop requests. When you install the Connection Server, the Horizon Administrator is installed as well. The Horizon Administrator is the web-based interface for the management, provisioning, and deployment of virtual desktops. As an administrator, you can centrally manage thousands of virtual desktops from a single Horizon Administrator.

Prerequisites for Connection Server Installation

To perform this exercise, you will need the following:

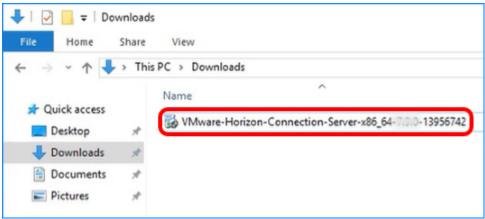
- **User account** When you log in to the OS to run the installer, the account you use must have administrative privileges.
- Installer If necessary, you can download the installer from the Download VMware Horizon page or the VMware Horizon 7 Product Evaluation Center. You must download and copy the installer file to the Connection Server VM, or, alternatively, you can copy it to a location accessible to the system.
- VM that satisfies virtual hardware requirements If you performed the exercise Create VMs for the Connection Server and Composer, you have an appropriate VM. If you did not perform that exercise, make sure that the VM you have adheres to the specifications listed in the product documentation topic Hardware Requirements for Horizon Connection Server.
- Windows OS The system must be running a supported Windows version. We recommend Windows Server 2016. for a complete list of supported operating systems, see Supported Operating Systems for Horizon Connection Server.
- Static IP address The system must have an IP address that does not change. In an IPv4 environment, configure a static IP address. In an IPv6 environment, machines automatically get IP addresses that do not change.
- **Supported browser** The last step of this procedure has you log in to Horizon Console, the latest web-based administrative console. The latest versions of most browsers are supported. For a complete list, see Horizon Administrator Requirements.

Note: To use the older, Flash-based Horizon Administrator console, you must have Adobe Flash 10.1 or later installed.



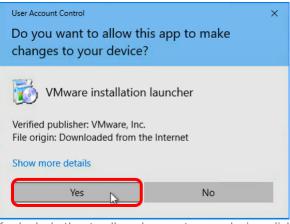
https://youtu.be/

1. Run the Connection Server Installer



Navigate to the Connection Server installation file that you downloaded earlier, and double-click the file to start the installation wizard.

2. Permit Changes to Device



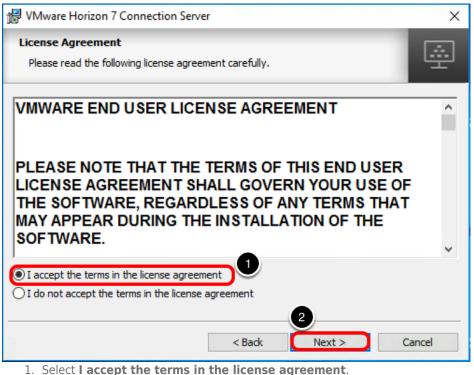
If asked whether to allow changes to your device, click Yes.

3. Click Next on the Welcome Page



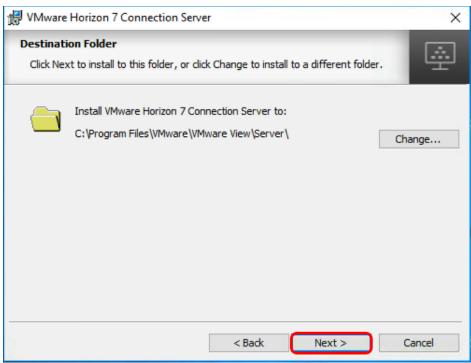
On the installation wizard Welcome page, click Next.

4. Accept the License Agreement



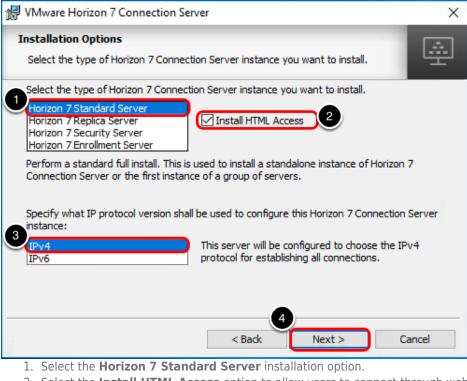
2. Click Next.

5. Accept the Default Installation Directory



Click Next.

6. Select Installation Options



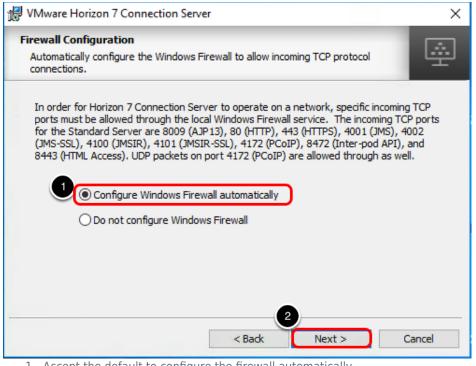
- 2. Select the Install HTML Access option to allow users to connect through web browsers.
- 3. Accept the default IPv4 protocol option.
- 4. Click Next.

7. Establish a Data Recovery Password

VMware Horizon 7 Connection Serve		×
Data Recovery		
Enter data recovery password details.		5
This password protects data backups of y will require entry of this password.	our Horizon 7 Connection Server. R	ecovering a backup
Enter data recovery password:	0	
Re-enter password:	•••••	
Enter password reminder (optional):	2	
	3	
	< Back Next >	Cancel

- 1. In the Data Recovery window, enter the password.
- 2. You can enter an optional reminder for future reference.
- 3. Click Next.

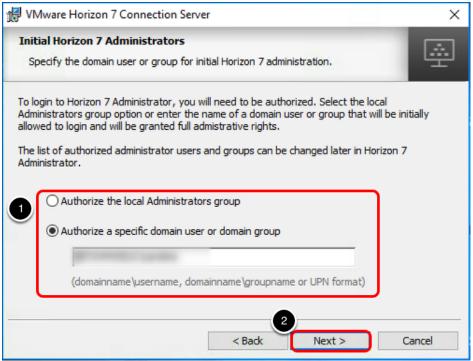
8. Configure the Firewall Automatically



1. Accept the default to configure the firewall automatically.

2. Click Next.

9. Specify the User or Group Who Will Have Full Administrative Privileges



1. Enter the domain user or domain group to authorize access to the Horizon Administrator.

2. Click Next.

10. Choose the User Experience Option

记 VMware Horizon 7 Connection Server	×
User Experience Improvement Program Basic Customer Demographics	i.
	-
VMware's Customer Experience Improvement Program ("CEIP") provides VMware with info that enables VMware to improve its products and services, to fix problems, and to advise how best to deploy and use our products.	
Learn More	
Join the VMware Customer Experience Improvement Program	
Select your organization industry type:	~
Select location of your organization's headquarter:	~
Select approximate number of employees:	~
< Back Next > Can	icel

- 1. In the User Experience Improvement Program window, you can deselect the **Join the VMware Customer Experience Improvement Program** option to opt out of the program.
- 2. Click Next.

11. Install the Components You Selected

记 VMware Horizon 7 Connection Server	×
Ready to Install the Program The wizard is ready to begin installation.	4
VMware Horizon 7 Connection Server will be installed in:	
C:\Program Files\VMware\VMware View\Server\	
Click Install to begin the installation or Cancel to exit the wizard.	
< Back Install	Cancel

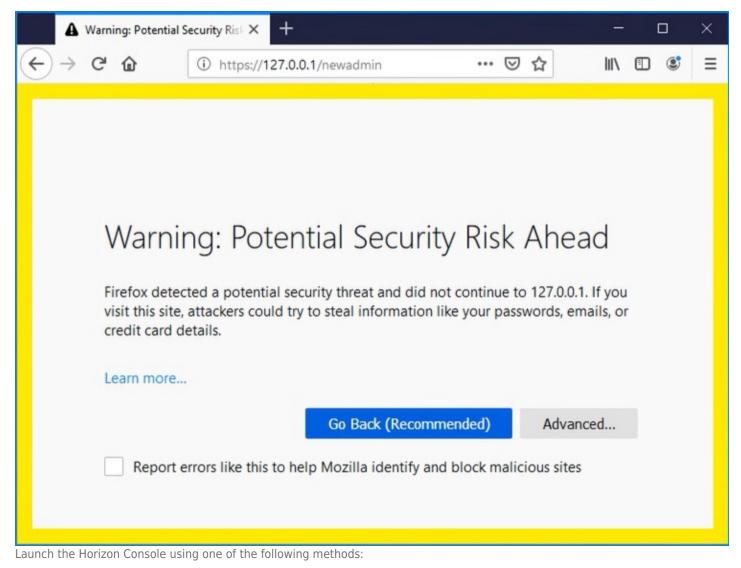
In the Ready to Install the Program window, click Install.

12. Click Finish

😸 VMware Horizon 7 Connect	ion Server	Х
P	Installer Completed	
	The installer has successfully installed VMware Horizon 7 Connection Server. Click Finish to exit the wizard.	
	Next Steps:	
	Show the release notes	
VMware Horizon™7		
Connection		
Server		
Product version:	< Back Finish Cancel	

Click **Finish** to close the wizard.

13. Browse to the URL for the Horizon Console



- If you are logged in to the server on which you installed the Connection Server, open a browser and enter the following URL: https://127.0.0.1/newadmin
- If you are accessing Horizon Administrator from a machine other than the one you used for installation, open a browser and enter the following URL: https://connection-server-name/newadmin.

If you see the security warning, such as this one in Firefox, use the necessary UI controls to continue on. For example, for Firefox, you would click the **Advanced** button and then scroll down and click **Accept the risk and continue**.

Alternatively, if you would rather use the legacy Horizon Administrator console than the Horizon Console, on the server where you installed the Connection Server, you can double-click the **Horizon 7 Administrator** desktop icon. Remember, to use this UI, you must have Flash installed.

Quick-Start Tutorial for VMware Horizon 7

R	ecycle Bir	1		
Ad	Horizon 7 ministrato Console	or		
م	[]]	e	-	

14. Log in to Horizon Console

VMware Horizon® 7	× +	
← → ♂ ŵ	i 🔒 https://127.0.0.1/newadmin/#/login	90% … 🗟 🏠
	VMware Horizon*7	
	Sign in	

Log in to Horizon Console using an account that belongs to the user or group account you specified in Specify the User or Group

VMWare[®] Confidential | © VMware, Inc.

Who Will Have Full Administrative Privileges.

For more information about installation and all the options, see the Horizon 7 Installation guide.

Set Up the Composer Database

The Composer database stores information about connections and components that are used by the Composer:

- vCenter Server connections
- Active Directory connections
- Linked-clone desktops that are deployed by the Composer
- Replicas that are created by the Composer

Note: If you choose to use instant clones in your enterprise rather than linked clones, no database is required for instant clones.

Prerequisites for Setting Up the Composer Database

To perform this exercise, you need the following:

- **SQL Server instance** This is the database server on which you will create the Composer database. For the example in this exercise, we used Microsoft SQL Server 2016. To simplify the setup for completing this tutorial in a lab setup, we recommend that you use the same SQL Server instance for the Composer database, the event database, and the JMP server database. For a list of databases that support all three of these components, see the product documentation topic Create VMs for the Connection Server and Composer, you can also clone a VM for your SQL Server instance.
- **Microsoft SQL Server Management Studio** For the example in this exercise, we used Microsoft SQL Server Management Studio v17.7. The instructions might differ slightly for different versions of SQL Server Management Studio.
- **SA credentials** To create the necessary logins for the Composer server database, you will log in to the SQL Server instance as the sysadmin (SA) or as a user account with SA privileges.

1. Open Microsoft SQL Server Management Studio



- 1. On the VM where SQL Server and SQL Server Management Studio are installed, click the **Start** button.
- 2. Navigate to and select Microsoft SQL Server Management Studio.

2. Log In to a SQL Management Studio Session as SA

🖵 Connect to Server		×
	SQL Server	
Server type:	Database Engine	~
Server name:	1 CA-SQL	~
Authentication:	SQL Server Authentication	~
Login:	2 (SA	~
Password:		
	Remember password	120
3	Connect Cancel Help	Options >>

- 1. Select SQL Server instance. By default your Windows login credentials are used, but you are not required to use Windows authentication.
- 2. Log in as the sysadmin (SA) or using a user account with SA privileges.
- 3. Click **Connect**.

3. Create a Database for the Composer Server

😡 Microsoft S	QL Server Management Studio (Administ
File Edit View	w Debug Tools Window Hel
0-0 13	🝷 🐀 🛫 🔛 📲 📳 New Query
Object Explorer Connect ▼ ¥ CA-SOL (S CA-SOL (S CA	OL Server 1848 1746 0 - CA-S

- 1. In the Object Explorer, right-click **Databases**.
- 2. Select New Database.
- 4. Name the Composer Database

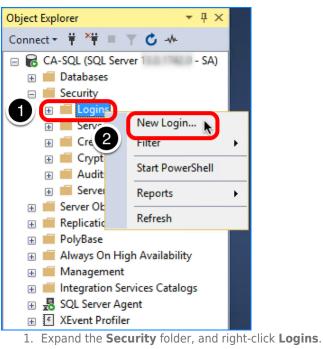
New Database					_		Х
Select a page	🚺 Script 🔻 😲	Help					
 Options Filegroups 	Database name:		ComposerD	B			
	Owner:		<default></default>				
	☑ Use full-text in	dexing					
	Database files:						
	Logical Name	File Type	Filegroup	Initial Size (MB)	Autogrowth / Ma		
	ComposerDB ComposerD	ROWS LOG	PRIMARY Not Applicable	8	By 64 MB, Unlim By 64 MB, Unlim		
	composer D	200	Not Applicable	0	by 64 Mb, 6Min	lica	
Connection							
Server: CA-SQL							
Connection:							
SA							
y ₩ <u>View connection properties</u>							
Progress							
Ready	<						>
Ready				Add		Remove	
				Add		nemove	
				2	ок 💦	Car	ncel

1. For the database name, enter ComposerDB. You must use only ASCII characters. Use the default settings.

2. Click **OK**.

The new database is added under the $\ensuremath{\textbf{Databases}}$ folder in the Object Explorer pane.

5. Create a Database Login for the Composer Server



- 2. Select New Login.
- 6. Complete the General Settings

🗄 Login - New				_		Х
Select a page	🖵 Script 🔻 😯 Help					
General Server Roles User Mapping Securables Status	Login name: Windows authentication SQL Server authentication Password: Confirm password: Specify old password Old password: Enforce password policy				Search	
0	Mapped to certificate			\sim		
Connection Server: CA-SQL Connection: SA Y	 Mapped to asymmetric key Map to Credential Mapped Credentials 	Credential	Provider	~	Add	
Progress	-				Remov	/e
Ready	Default database: 4 Default language: 5	ComposerDB English		~		
			(ОК	Cano	xel

1. Enter a login name, using ASCII characters only; for example, ${\tt ComposerUser}.$

2. Select **SQL Server authentication**, and create a password.

- 3. De-select **Enforce password expiration**. For the purposes of this exercise, you do not need to use password expiration.
- 4. Set the default database to the Composer database.

5. Select a default language.

7. Assign the sysadmin Server Role

Login - New		8		×
Select a page General	🖵 Script 🔻 😯 Help			
Server Roles User Mapping Securables Status	Server role is used to grant server-wide security privileges to a user.			
	Server roles: bulkadmin dbcreator diskadmin processadmin public securityadmin serveradmin			
Connection	Setupadmin			
Server: CA-SQL	Sysadmin			
Connection: SA				
<u> </u>				
Progress				
Ready				
		₿ ок	Can	cel

- 1. Select the **Server Roles** page.
- 2. Select the ${\bf sysadmin}$ check box.
- 8. Complete the User Mapping Settings

Login - New				_		Х
Select a page General	Script	🔻 😯 Help				
Server Roles User Mapping	Users ma	apped to this login:				
 Securables Status 	Map	Database CCJMPDB	User	Default Schema		
2		ComposerDB	ComposerUser			
		Horizon7Events				
		JMPDB				
		master				
		model				
		msdb				
		tempdb				
Connection	Gues	t account enabled for: Co	mposerDB			
Server: CA-SQL		e role membership for: Co				
Connection: SA		ccessadmin ackupoperator				
View connection properties	db_d	atareader				
		atawriter				
		dladmin enydatareader				
	db d	enydatawriter				
Progress 3						
Ready	r db_s ✓ public	ecurityadmin c				
				4 ок 💦	Car	icel
1. Select the User Map	pina page	2.				

- 2. Select the **ComposerDB** database.
- 3. Select the **db_owner** role.
- 4. Click **OK**.

The new login is added under the **Security > Logins** folder in the Object Explorer pane.

Install the Composer

Horizon 7 uses Composer, also called View Composer, to create and deploy linked-clone desktops in vCenter Server. Composer is the legacy method of optimizing your use of storage space and facilitate updates.

(Instant-clone desktops, another feature, improve and accelerate the process of cloning virtual desktops, and use even less storage and administrative effort, because the desktop is deleted when the user logs out. Both instant-clone and linked-clone desktops are explored in other chapters of this tutorial.)

Installing Composer is required only if you plan to do the exercises for creating linked-clone desktops. For production environments, VMware recommends using instant clones rather than linked clones.

Note: Do not install Composer on the same virtual or physical machine as Connection Server, Horizon Agent, Horizon Client, or other Horizon 7 software components. For this exercise, Composer is installed on a standalone machine.

Prerequisites for Composer Installation

To perform this exercise, you will need the following:

• Database - Verify that you have performed all the steps in the exercise Set Up the Composer Database, which include

creating the database for storing Composer information and a login user with the correct privileges for the Composer server to communicate with the database.

- **SQL Server Native Client 11** If the driver for the native client is not already installed on the Composer server machine, you can download the installer, which is called sqlncli.msi and is one of the components included in the Microsoft SQL Server 2016 Feature Pack. You will select this driver when you are completing the Composer installation wizard.
- User account for running the installer When you log in to the OS to run the installer, the account you use must have administrative privileges.
- Installer If necessary, you can download the installer from the Download VMware Horizon page or the VMware Horizon 7 Product Evaluation Center. You must download and copy the installer file to the Composer server VM, or, alternatively, you can copy it to a location accessible to the system.
- VM that satisfies virtual hardware requirements If you performed the exercise Create VMs for the Connection Server and Composer, you have an appropriate VM. If you did not perform that exercise, make sure that the VM you have adheres to the specifications listed in the product documentation topic Hardware Requirements for Standalone View Composer.
- Windows OS The system must be running a supported Windows version. We recommend Windows Server 2016. for a complete list of supported operating systems, see the product documentation topic Supported Operating Systems for View Composer.



https://youtu.be/

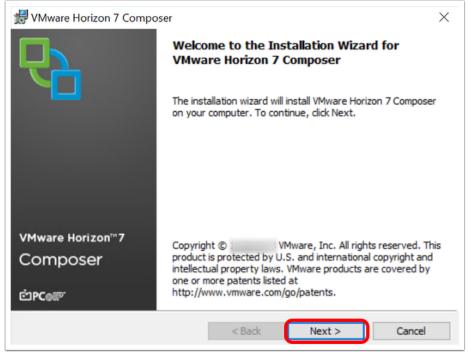
1. Run the Composer Installer

Quick-Start Tutorial for VMware Horizon 7

 ← → · ↑ > Network > cc-composer > c\$ > ^ Name PerfLogs Program Files
 ✓ ★ Quick access ▲ Desktop ★ Downloads ★ PerfLogs
Documents Pictures This PC Desktop Documents Downloads

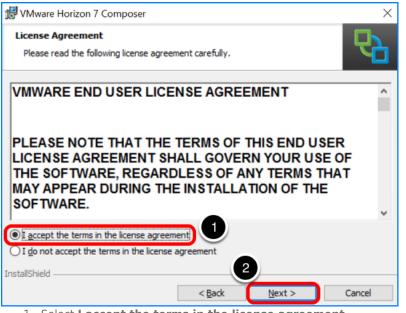
Navigate to the Composer installation file that you downloaded earlier, and double-click the file to start the installation wizard.

2. Click Next on the Welcome Page



On the installation wizard Welcome page, click Next.

3. Accept the License Agreement



- 1. Select I accept the terms in the license agreement.
- 2. Click Next.

4. Accept the Default Installation Directory

🛃 VMware	Horizon 7 Composer	×
	on Folder At to install to this folder, or click Change to install to a different folder.	2
	Install VMware Horizon 7 Composer to: C:\Program Files (x86)\VMware\VMware View Composer\	Change
InstallShield -	< <u>B</u> ack <u>Next</u> >	Cancel

Click Next.

5. Set Up a New ODBC Data Source

🛃 VMware Horizon 7 Composer	×
Database Information Enter additional database configuration information.	2
Enter the Data Source Name (DSN) for the VMware Horizon 7 Composer database. To s the DSN dick the ODBC Setup button.	et up
ODBC DSN Setup.	
Enter the username that you entered in the ODBC Data Source Administrator.	
Enter the password for this database connection.	
InstallShield	
< Back Next > Car	ncel

Click ODBC DSN Setup.

6. Add a New System DSN

Source Administrator (64-bit)	×
User DSN System DSN File DSN Drivers Tracing Connection Pooling About	
System Data Sources:	
Name Platform Driver Add	
Remo	ve
Configu	Jre
An ODBC System data source stores information about how to connect to the indicated data provider. A System data source is visible to all users on this machine, including NT services.	
OK Creat Arch	Hele
OK Cancel Apply	Help

Click Add.

6.1. Select the SQL Server Native Client

SQL Server 10.00.14393.00 Micro	reate New Data Source			×
SQL Server 10.00.14393.00 Micro		Select a driver for which you war	nt to set up a data so	urce.
		Name	Version	Com
SQL Server Native Client 11.0 011.110.6518.00 Micro		SQL Server	10.00.14393.00	Micro
		SQL Server Native Client 11.0	2011.110.6518.00	Micro
< >>		<		>
< Back Finish Cancel			Finish Ca	ncel

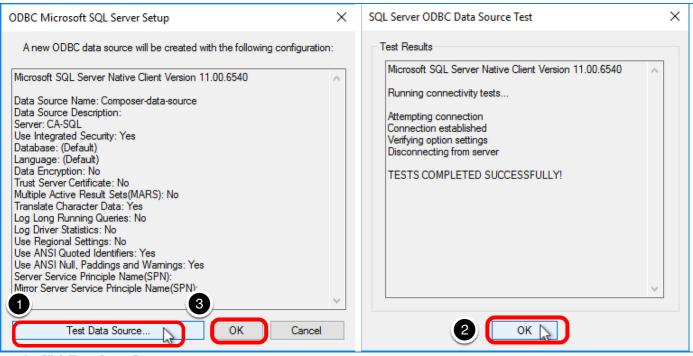
- 1. Select **SQL Server Native Client 11**. If you do not see a driver for the native client, you can download the installer, which is called sqlncli.msi and is one of the components included in the Microsoft SQL Server 2016 Feature Pack.
- 2. Click Next.

6.2. Enter Data Required to Create a Data Source

Create a New Data Sour	ce to SQL Server	×
SQL Server 2012	This wizard will help you create an ODBC data source that you can use to connect SQL Server. What name do you want to use to refer to the data source? Name: Composer-data-source How do you want to describe the data source? Description: Which SQL Server do you want to connect to? Server: CA-SQL	to
	3 Finish Next > Cancel Help	

- 1. Enter a name for the data source; for example, Composer-data-source.
- 2. Select the database server instance from the drop-down list, or type in the server name if no names appear in the list.
- 3. Click Finish.

6.3. Test the Data Source Connection



- 1. Click Test Data Source.
- 2. Click **OK** in the Test Results window.
- 3. Click **OK** in the ODBC data source window.

6.4. Click OK in the Data Source Administrator

ODBC Data Source Administrator (64-bit)	×
User DSN System DSN File DSN Drivers Tracing Connection Pooling About	
System Data Sources:	
Name Platform Driver Add	
Composer-data-source 64-bit SQL Server Native Client 11.0 Remove	
Configure	
An ODBC System data source stores information about how to connect to the indicated data provider. A System data source is visible to all users of this computer, including NT services.	
OK Cancel Apply Help	

Now that the data source for the Composer database has been added, click **OK** to close the ODBC Data Source Administrator wizard.

7. Enter Database Information

🔀 VMware Horizon 7 Composer		×
Database Information		
Enter additional database configuration information.		
Enter the Data Source Name (DSN) for the VMware Horizon 7 the DSN dick the ODBC Setup button.	Composer database. 1	ro set up
Composer-data-source	ODBC DSN Set	tup
2		
Enter the username that you entered in the ODBC Data Source	ce Administrator.	
ComposerUser		
Enter the password for this database connection.		
InstallShield	Next >	Cancel
VMware Horizon 7 Composer		×
Connecting to a remote database using windows auther supported.	ntication is not curr	rently
	4	ок 💦

- 1. Now that a data source is created, enter the data source name; for example, Composer-data-source.
- 2. Enter the user name and password for the login you created in the exercise Set Up the Composer Database.
- 3. Click Next.
- 4. Click **OK**. You can safely ignore this warning because the user you created uses SQL Server authentication rather than Windows authentication.

8. Accept the Default SOAP Port

🖟 VMware Horiz	on 7 Composer	×
	on 7 Composer Port Settings ection information for the VMware Horizon 7 Composer.	₽
Specify the web	access port and security settings for VMware Horizon 7 Composer.	
SOAP Port:	18443	
SSL Certificate:	No SSL certificates were found on your machine. A default SSL certificate will be created for you.	
InstallShield ———	< Back Next >	Cancel

Click Next.

9. Start the Installation Process

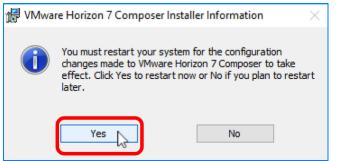
🕼 VMware Horizon 7 Composer	×
Ready to Install the Program	
The wizard is ready to begin installation.	
VMware Horizon 7 Composer will be installed in:	
C:\Program Files (x86)\VMware\VMware View Composer\	
If you want to review or change any of your installation settings, click Back. Click Insta begin the installation or Cancel to exit the wizard.	all to
TeetellChield	
InstallShield	ancel
Click Install.	



🖟 VMware Horizon 7 Compos	er	×
	Installer Completed The installer has successfully installed VMware Horizon 7 Composer. Click Finish to exit the wizard.	
VMware Horizon™7		
Composer		
₫₽ с @₽		
	< Back Finish 📐 Cancel	

When installation is complete, click **Finish** to close the wizard.

11. Restart the System



To finalize the installation, click **Yes** to reboot the virtual machine.

12. Verify that the Service Is Started

File Action View	Help				
	3 🔒 🛛 🖬 🖡 🕨 🔳 💵 🕨				
Services (Local)	🔍 Services (Local)				
	VMware Horizon 7 Composer	Name	Description	Status	Startup Type
	Stop the service Restart the service	🧠 User Profile Service 🍓 Virtual Disk	This service Provides m	2	Automatic Manual
	Description	VMware Alias Manager and Ticket Service VMware CAF AMQP Communication Service	Alias Mana VMware Co	-	Automatic Manual
	Description: Provides VMware scalable virtual images services.	Whware CAF Management Agent Service	VMware Co Provides V	Running Running	Automatic (D _e Automatic
		Wware Snapshot Provider	VMware Sn Provides su	Running	Manual Automatic
		iO. VMware Universal File Δccess <	VMware Uni	Running	∆utomatic >

On the Composer VM, open the Services applet, and verify that the **VMware Horizon 7 Composer** service is running.

Initial Configuration

Introduction

The exercises in this chapter are about configuring the Connection Server so that it can create pools of VDI desktops and RDSHpublished desktops and applications. You use the latest administrative console UI, the Horizon Console, to perform these Connection Server configuration tasks. In subsequent chapters, you will use the Horizon Console UI to create and monitor desktop and application pools.

Some exercises in this chapter are mandatory, and some are optional. For example, the exercise Create a Domain User Account and OUs in AD for Clone Operations, is optional in that you are not required to create a new domain user account and new Active Directory organizational units if you just want to set up a proof-of-concept (POC) environment. You can skip this exercise if, when prompted in later exercises, you want to specify an existing domain user and OUs.

Similarly, you are not required to set up an event database. The event database allows you to monitor logging operations in the Horizon Console or Horizon Administrator UI. If you do not complete the exercise **Create an Event Database**, you can instead look directly in the log files if necessary, or you can configure logs to be sent to a Syslog server.

If you do not perform these optional exercises, configuring the Connection Server involves only three tasks: entering the license key, adding a vCenter Server, and designating an instant-clone domain administrator.

Create a Domain User Account and OUs in AD for Clone Operations

In this exercise, you perform the following preliminary tasks so that instant- or linked-clone desktops can be automatically joined to a specified domain as they are created:

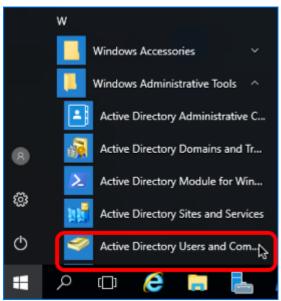
- Create a user account in Active Directory that has the required permissions for creating and deleting cloned-desktops.
- Create one organizational unit (OU) in Active Directory for instant-clone desktops, another for instant-clone RDSH servers, and another OU for linked-clone desktops.

Note: This exercise shows how you would typically create an OU in a production environment and set the minimum required Active Directory domain privileges. However, for a test environment, you can skip this exercise and deploy the instant-clone and linked-clone virtual machines (VMs) to the Computers OU, and use a domain administrator account for the instant-clone domain administrator and the domain administrator for View Composer.

Prerequisites for Creating OUs and the Domain Admin

To perform this exercise, you must have a user account for logging in to the domain controller as an administrator and creating users and OUs in Active Directory.

1. Open Active Directory Users and Computers



On the Active Directory Domain Controller, log in as an administrator, and go to **Start button** > **Administrative Tools** > **Active Directory Users and Computers**.

2. Add a New User

Active Directory	Users and Computers	_ 0	x	
File Action View	v Help			
🗢 🔿 🔁 📰 🛛		🛿 📅 🔧 🐮 🝸 💆 🍇		
📔 Active Directory l	Users and Computers [DC1.Ł	Name	Ту ^	
> Saved Queries		Allowed RODC Password Replication Group	Se	
	com (1)	🏝 Cert Publishers	Se	
> 📔 Builtin	\bigcirc	🕰 Denied RODC Password Replication Group	Se≡	
> 📔 Computer		A DHCP Administrators	Se	
> 🗐 Domain C > 🛐 EndUsers	ontrollers	A DHCP Users	Se	
· · · · · · · · · · · · · · · · · · ·	curityPrincipals	A DnsAdmins	Se—	
> 📑 Horizon 7	· · ·	A Group1	Se	
> 📑 Horizon 7		A Group2	Se	
> 📓 Horizon D		A RAS and IAS Servers	Se	
	esktops NoAD	A WinRMRemoteWMIUsers_	Se	
> 🗐 IT		AppVolumes Custom Admins	Se Se	
> 📓 JS_RDSH		Cloneable Domain Controllers		
	Service Accounts	Besktop Admins		
> 📓 RDSH		A DnsUpdateProxy	Se	
> Servers		Bomain Admins	Se	
Test_IC_GPO		A Domain Computers	Se	
2 🖬 ThinkTrax		Bomain Controllers	Se Se	
	Delegate Control	Bomain Users	Se 🗸	
	Find		>	
3			-	
Create a new	New >	Computer	_	
	All Tasks >	Contact		
	View >	Group		
	Refresh	InetOrgPerson		
	Export List	msDS-KeyCredential		
	Properties	msDS-ResourcePropertyList		
Help		msDS-ShadowPrincipalContainer		
		msImaging-PSPs		
		MSMQ Queue Alias		
		Printer		
		User		
		Snareu Folger		
			_	

- 1. Expand the domain.
- 2. Right-click **Users**.
- 3. Select New.
- 4. Select **User**.

2.1. Enter User Name Information

New Object - User	×
🧏 Create in:	com/Users
First name:	Initia :
Last name:	Clone Domain User
Full name:	Clone Domain User
User logon name:	
clone-domain-user	@ com ✓
User logon name (pre	-Windows 2000):
K 3	clone-domain-user
	< Back Next > D Cancel

Complete the dialog box, and click **Next**.

2.2. Enter Password Information

New Object - User	×
Create in: betavmweuc.com/Users	1
Password:	
Confirm password:	
User must change password at next logon 2 User cannot change password	
Account is disabled	
< Back N	ext > 🔀 Cancel

- 1. Enter a password.
- 2. De-select **User must change password at next logon**. In a test environment, you can de-select this check box.
- 3. Select **Password never expires**. In a test environment, you can select this check box.
- 4. Click **Next**, and click **Finish** in the next wizard page to close the wizard and create the user.

Now that you have a domain user account to use specifically for creating cloned VMs, you can add this user to the Active Directory OUs that will contain the VM computer accounts, as described in the steps that follow. You will also assign permissions to this user so that the user account can create and delete VMs in the OUs.

3. Create an OU for Instant-Clone Desktops and Delegate Control

VMWare[®] Confidential | © VMware, Inc.

Active Directory Users and Computers			x
File Action View Help			
🗢 🏟 📶 💼 🖬 🗟 🖬 🖏 🖏	1	' 🗾 🔍	
Active Directory Users and Computers [DC A Saved Queries betavr Bu Co Find Do Change Domain En Change Domain Controller Fo Raise domain functional level Details Co Change Domain Saters	ters Seci ed S	urityPrincipals ervice Accounts ntrollers	Typ buil Cor Cor Cor Org Org Org
2 New >	Þ	Computer	-
> a Ho All Tasks >		Contact	
> I I View >		Group	
> 🛄 Ma Refresh		InetOrgPerson	
> RD Export List		msDS-ShadowPrincipalConte	iner
> 🖆 Ser > 🚊 Te: Properties		msImaging-PSPs MSMQ Queue Alias	
> 🖬 Th Help		Organizational Unit	
> VMworld		- W	_
		User	
Create a new object		Shared Folder	

- 1. Right-click the domain.
- 2. Select New.
- 3. Select Organizational Unit.

3.1. Name the OU

New Object - Organizational Unit	x
Create in: betavmweuc.com/	
Name: Instant Clones	_
Protect container from accidental deletion	
2 OK Cancel Help	
1. Enter a name; for example, Instant Clones.	

2. Click OK.

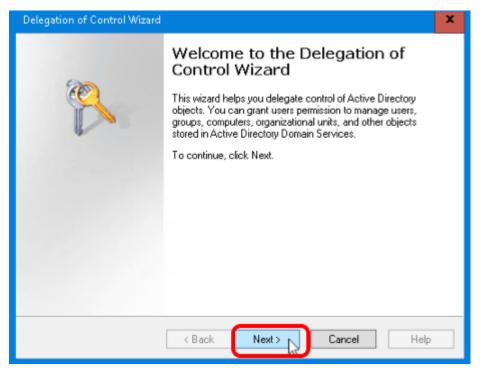
This OU is the Active Directory container in which the instant-clone computer accounts will be created. After you complete the text box, you can find the OU under the domain.

3.2. Open the Delegation of Control Wizard

🗧 📴 Active Directory Users and Computers					-		x
File Action View Help							
🗢 🔿 🙇 🗊 🤞 🗎 🔽 🧟		? 🖬 📍	<u>s</u>	11 7	2 28		
✓ mile ∴com Sile interview	^	Name					Тур
> Computers		The	re are	no items	to show in	n this view	v.
> 🗊 Domain Controllers							
> 🗊 EndUsers							
> 🧮 ForeignSecurityPrincipals							
> 🖹 Horizon 7.3							
> 🖻 Horizon 7.5							
> 🛅 Horizon Desktops							
> 📓 Horizon Desktops NoAD							
> 📓 IT > 📓 JS_RDSH	=						
> C Managed Service Accounts							
> B RDSH							
> Servers							
> 🖺 Test_IC_GPO							
> 📓 ThinkTrax							
Users							
> 🗊 VMworld							
Instant Clones			1				
Delegate C	ontrol.	• 📐		1			>
Find							

Right-click the OU you created (that is, the container) and select **Delegate Control**.

3.3. Click Next on the Welcome Page



VMWare[°] Confidential | © VMware, Inc.

Click **Next** to start the wizard.

3.4. Add the Domain User

Delegation of Control Wizard	x
Users or Groups Select one or more users or groups to whom you want to delegate control.	6
Selected users and groups:	
Add Remove	
Select Users, Computers, or Groups	
Select this object type:	
Users, Groups, or Built-in security principals Object Types	٦
From this location:	_
betavmweuc.com	
Enter the object names to select (examples):	
Clone Domain User	
Advanced 4 OK Cancel	

- 1. In the Users or Groups dialog box, click Add.
- 2. Enter the name of the domain user you just created; for the example in this exercise, we use Clone Domain User.
- 3. Click **Check Names** to verify that the name can be found in Active Directory.
- 4. Click **OK**.
- 5. When you are returned to the Users or Groups page, click $\ensuremath{\textbf{Next}}.$

3.5. Create a Custom Task to Delegate

Delegation of Control Wizard	×
Tasks to Delegate You can select common tasks or customize your own.	<u>J</u>
Delegate the following common tasks: Create, delete, and manage user accounts Reset user passwords and force password change at next logon Read all user information Create, delete and manage groups Modify the membership of a group Manage Group Policy links Generate Resultant Set of Policy (Planning)	
< Back Next > Cancel	Help

- 1. Select Create a custom task to delegate.
- 2. Click Next.

3.6. Delegate Control of Computer Objects

Delegation of Control Wizard	x
Active Directory Object Type Indicate the scope of the task you want to delegate.	2
Delegate control of: O This folder, existing objects in this folder, and creation of new objects in this folder O Only the following objects in the folder:	
account objects aCSResourceLimits objects applicationVersion objects bootableDevice objects certificationAuthority objects Computer objects ✓ Create selected objects in this folder ✓ Delete selected objects in this folder	
	p
1. Select Only the following objects in the folder.	

- Select the following check boxes:
 - Computer objects
 - Create selected objects in this folder
 - $\circ~$ Delete selected objects in this folder
- 3. Click **OK**.

3.7. Select Permissions

Delegation of Control Wizard		x
Permissions Select the permissions you	want to delegate.	No.
Show these permissions:		
🖌 General		
Property-specific		
Creation/deletion of spe	cific child objects	
Permissions:		
Create All Child Objec		^
Delete All Child Object	ts	_
 Read All Properties Write All Properties 		
Change password		
Reset password		~
[< B Cancel	Help
1. in the Permissions list,	select the following items:	

- $\circ~$ Create All Child Objects
- Delete All Child Objects
- Read All Properties
- Write All Properties
- Reset Password

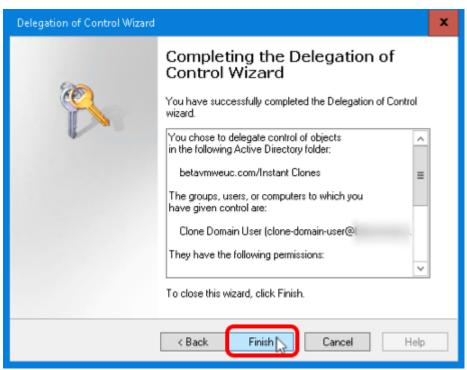
2. Click Next.

These are the required permissions for the user account, including permissions that are assigned by default.

- List Contents
- Read All Properties
- Write All Properties
- Read Permissions
- Reset Password
- Create Computer Objects
- Delete Computer Objects

3.8. Click Finish

Quick-Start Tutorial for VMware Horizon 7



Click Finish to close the wizard.

4. Create an OU for Instant-Clone RDSH Servers and Delegate Control

If you plan to perform the exercise for creating an instant-clone farm of RDSH servers, repeat the step Create an OU for Instant-Clone Desktops and Delegate Control to create an OU for the instant-clone RDSH server computer accounts. You might name the OU RDSH Servers.

5. Create an OU for Linked Clones and Delegate Control (Optional)

If you plan to perform the exercise for using the Composer and creating a linked-clone desktop pool, repeat the step Create an OU for Instant-Clone Desktops and Delegate Control to create an OU for linked-clone desktop computer accounts. You might name the OU Linked Clones. The OUs for linked clones require the same delegation permissions as those for instant clones.

Note: In a production environment, usually the decision is made to use either linked clones or instant clones.

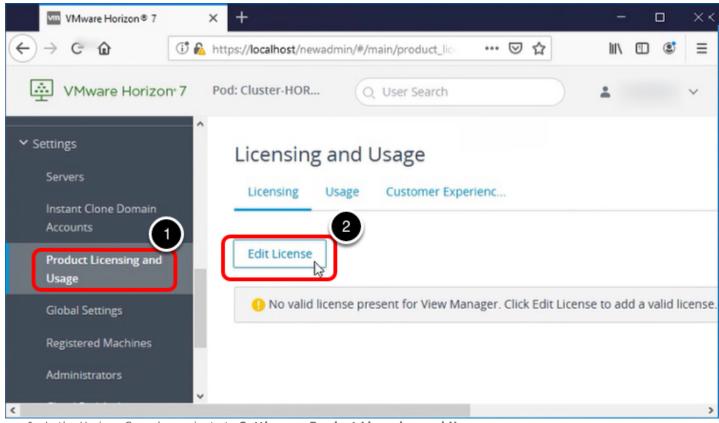
Add the Product License Key

The first step of initial configuration after installing the Connection Server is to add a product license key. The first time you log in to the Connection Server, the Horizon Console opens to the Product Licensing and Usage page.

Prerequisites for Adding a License

Before you perform this exercise, you need a valid license. You can use an evaluation license. For information about purchase options, see the VMware End-User Computing Packaging and Licensing guide.

1. Click the Edit License Button



- 1. In the Horizon Console, navigate to Settings > Product Licensing and Usage.
- 2. Click Edit License.

2. Provide the License Serial Number

Edit License		×
* License serial number:		
	Cancel	2 ОК

1. Enter the 25-character serial number of the product license key.

2. Click **OK**.

3. Verify Successful License Edit

VMware Horizon 7	Pod: Cluster-HORIZ	Q. User Search
✓ Settings Servers	Licensing and Usa	age ustomer Experienc
Instant Clone Domain Accounts	Edit License	
Product Licensing and Usage	License Key:	H100A-XXXXX-XXXXX-XXXXX-C554C
Global Settings	License expiration:	Never
Registered Machines		
Administrators	Desktop license:	Enabled 2
Cloud Pod Architecture	Application Remoting license	e: Enabled
Event Configuration	View Composer license:	Enabled
Global Policies	Instant Clone license:	Fashlad
IMP. Configuration	instant clone license:	Enabled

- 1. Verify that the license expiration date has not already passed.
- 2. Verify that the licenses for Desktop, Application Remoting, Composer, and Instant Clone are all enabled.

Add a vCenter Server Instance

vCenter Server creates and manages the virtual machines used in Horizon 7 desktop pools. The Connection Server uses a secure channel (TLS/SSL) to connect to the vCenter Server instance.

Prerequisites for Adding vCenter Server

Before you perform this exercise you need the following:

- Horizon 7 license See Add the Product License Key.
- vCenter Server user account For more information, see Configure a vCenter Server User for Horizon 7 and View Composer. The account privileges you need depend on whether you are using the Composer (which is optional).
 Tip: In a test environment, you could use the administrator account (administrator@vsphere.local), which has all administrator privileges.
- View Composer Server user account (Optional) The account must be a domain user account and must be a member of the local Administrators group on the standalone View Composer machine. Complete this setting if you plan to create linked-clone desktop pools.
- **Domain user account for adding linked clones** (Optional) This is a domain administrator account with permissions to create and delete computer objects and write properties in the domain. You already created this user account if you performed the exercise Create a Domain User Account and OUs in AD for Clone Operations. You need this information only if you plan to created linked-clone desktop pools.

Tip: In a test environment, you could use an account that is a member of the Domain Administrators group, which has all the required privileges.

1. Click Add on the vCenter Servers Tab

VMware Horizon [®] 7	Pod: Cluster-HORIZ		Jser Search		~
✓ Monitor	Servers				
Dashboard Events	vCenter Servers	Gateways	Connection Servers		
Sessions	Add B	Remove	Disable Provisioning	Enable provisioning	
Users and Groups					T Filter
JMP Assignments JMP	vCenter Server	Horizo	n Composer T VM Dis	k Space Recla Hori	zon Storage /
✓ Settings					
Servers	/				
Instant Clone Domain					>
1. In Horizon Console, navigate	to Settings > Serve	rs.			

2. Click Add.

2. Enter vCenter Server Settings

Add vCenter Server		
	* Server address	^
1 vCenter Information	vc-vdicom	
	* User Name	
2 Horizon Composer		
	* Password	
3 Storage		
Ready to Complete	Description	
	* Port	
	443	
	VMware Cloud On AWS ③	
	Advanced Settings	
	(2)	~
	Cancel Previous	Next

1. Enter the FQDN of the vCenter Server instance, and the user name and password for the vCenter Server user account, as described in Prerequisites for Adding vCenter Server.

2. Accept the default values for the port and other advanced settings, and click Next.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and

if you were in the middle of completing the Add vCenter Server wizard, your changes will be lost.

3. View and Accept the Invalid Certificate

Invalid Certificate Detected	×
08/11/2019,	2:11 PM
The identity of the specified vCenter Server cannot be verified for the following r	easons:
A Server's certificate is not trusted	
A Server's certificate cannot be checked	
VMware recommends the use of certificates signed by a trusted Certificate Author	ority.
View Certificate	ancel

If an Invalid Certificate Detected prompt is displayed, click **View Certificate**., and in the Certificate Information window that appears, review the thumbprint of the default self-signed certificate that was generated during installation, and click **Accept**.

4. Enter the Composer Settings (Optional)

Add vCenter Server			
 vCenter Information Horizon Composer 	•	Composer co-installed with vCenter Server n Composer is installed on the same server as vCenter	
Prorizon Composer	* Port	18443	
3 Horizon Composer Domains	Standalone Horizon Choose this if Horizon	Composer Server	
4 Storage	* Server address		
5 Ready to Complete	* Password	******	
	* Port	18443	
		Can	ncel Preves Next

1. In the Horizon Composer section, select **Standalone Horizon Composer Server**, and configure the following Composer Settings:

- $\circ~$ Server address: Enter the FQDN of your Composer VM.
- **User Name**: Enter the user name of your vCenter Server user account; for example, domain.com\user or user@domain.com. This account is described in Prerequisites for Adding vCenter Server.
- **Password**: Enter the password of your vCenter Server user account.
- **Port**: Use the default.

2. Click Next.

Important: If you do not plan to create linked-clone desktop pools, you can skip this step and its sub-steps.

4.1. View and Accept the Invalid Certificate

Invalid Certificate Detected	×
The identity of the specified Horizon Composer Server of following reasons:	08/11/2019, 2:13 PM cannot be verified for the
Server's certificate subject name does not match Server's certificate is not trusted VMware recommends the use of certificates signed by a	a trusted Certificate Authority.
	View Certificate

If an Invalid Certificate Detected prompt is displayed, click **View Certificate**., and in the Certificate Information window that appears, review the thumbprint of the default self-signed certificate that was generated during installation, and click **Accept**.

4.2. Add the Composer Domain

Add vCenter Server						
vCenter Information	Add L	Remove				^
Horizon Composer	Domains No records available	User	Desktops & Farms		^	
3 Horizon Composer Domains						
4 Storage						
S Ready to Complete						
						~
				Cancel Previous	Next	
On the Horizon Composer Domains pa	age, click Add .					

4.3. Enter the Domain Data

Add Domain	×
* Full domain name	
* User name	
* Password	
	2
	Cancel Submit

 In the Add Domain window, enter the domain name, credentials for the domain user account for creating linked clones, as described in Prerequisites for Adding vCenter Server. This account must have permission to create computer objects, delete computer objects, and write properties in the domain or in the OUs (organizational units) that you select when creating desktops in later exercises.

2. Click **Submit**.

4.4. Verify the Domain Data

Add vCenter Server						
VCenter Information	Add Edit	Remove			^	
Horizon Composer	Domains c.com	User	Desktops & Farms		~	
3 Horizon Composer Domains	c.com					
Storage						
5 Ready to Complete						
				2	Ų	
					Next	

1. In the Horizon Composer Domains window, verify the information.

2. Click Next.

5. Accept Storage Setting Defaults

Add vCenter Server	_		
VCenter Information	 Reclaim VM disk space Enable Horizon Storage Accelerator 		^
Horizon Composer	Default host cache size: 1024 ME	18	
Horizon Composer Domains	Cache must be between 100 MB and 2,048 MB		
4 Storage	Show all hosts		
5 Ready to Complete	Edit cache size		
	Host	Cache Size(MB)	
	/DC/host/ClusterVDI1/atl-r730com	1,024	
	/DC/host/ClusterVDI1/atl-r730com	1,024	
	/DC/host/ClusterVDl2/atl-r640 com	1,024	Ŷ
		Cancel Previous Next	

In the Storage Settings section, accept the defaults, and click **Next**.

6. Finish the Process

Add vCenter Server				
VCenter Information	vCenter Server	vc-vdi.b .com		^
	User Name	.com		
Horizon Composer	Password	****		
Horizon Composer Domains	Description			
Storage	Server Port	443		
	VMware Cloud On AWS	No		
5 Ready to Complete	Max Provision	20		
	Max Power	50		
	Max Horizon Composer Operations	12		
	Max Horizon Composer Provision	8		5
			Cancel Previous Submit	

1. On the Ready to Complete page, review the vCenter Server information.

2. Click **Submit**.

Quick-Start Tutorial for VMware Horizon 7

7. Verify That vCenter Server Is Connected

VMware Horizon 7				Pod: Cluster-HO	RIZONCA Q Use	r Search		oout ©	👗 carakelian	1 ¥
∽ Monitor	^	Servers								
Dashboard		vCenter Servers	Gateways	Connection Servers						
Events										
Sessions		Add Edit	Remove	Disable Provisioning	Enable provisioning					
Users and Groups							T Filter		G	<u>+</u>
JMP Assignments JMP		vCenter Server		Horizon Composer Type	VM Disk Space Reclamatio	n Horizon Storage A	celerator	Provisioning		
✓ Inventory			_	Considerations Hardward						~
Desktops		vc-vdi.t		Standalone Horizon 🤇	~	~		~		
Applications									J	
Farms										
Machines										
Persistent Disks										
∽ Settings										
Servers										
Instant Clone Domain Accounts										
Product Licensing and Usage	~									~

On the **vCenter Servers** tab, verify the vCenter Server that you just connected to your Horizon 7 environment.

Add an Instant-Clone Domain Administrator

You use Horizon Console to specify the user account for joining instant-clone VMs to the Active Directory domain.

Prerequisites for Adding the Instant-Clone Domain Administrator

Before you perform this exercise, you must have a domain user account that has the required Active Directory permissions so that cloned desktops can be joined to the domain. These include permissions to create and delete computer objects, and write properties in the domain or in the OUs (organizational units) that you select when creating desktops in later exercises. You have already created this user account if you performed the exercise **Create a Domain User Account and OUs in AD for Clone Operations**.

Tip: In a test environment, you could use an account that is a member of the Domain Administrators group, which has all the required privileges.

1. Select Instant Clone Domain Admins and Click Add

VMware Horizon ⁻⁷	Pod: Cluster-HORIZONCA	Q User Search	About 🚳 😩	~
~ Monitor Dashboard Events	Instant Clone Engine Domain Accounts		T Filter C	*
Sessions	Domains	User		
Users and Groups	No records available			^
JMP Assignments JMP				
> Inventory				
✓ Settings				
Servers	1			
Instant Clone Domain Accounts				
Product Licensing and Usage				
Global Settings 🗸 🗸				\sim

1. In Horizon Administrator, go to **Settings** > **Instant Clone Domain Admins.**

2. Click Add.

2. Enter Credentials for the Domain Admin User

Add Domain	Admin	×
Full domain name: * User name: 2 * Password:	.com	Ĵ
	Cance	3

1. Select the domain from the drop-down list.

2. Enter the user name and password of the domain user account for creating instant-clones.

3. Click **OK**.

3. Verify That the Domain Admin Was Added

VMware Horizon 7		Pod: Cluster-HORIZONCA	Q User Search	About 🕼 💄 carakelia	an 🗸
✓ Monitor Dashboard Events	*	Add Edit Remove		T Filter	ŧ
Sessions		Domains	User		
Users and Groups		o.com	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		^
JMP Assignments					
> Inventory					
✓ Settings					
Servers					
Instant Clone Domain Accounts					
Product Licensing and Usage					
Global Settings	~				~

Verify that the domain and the domain admin user name now appear on the Instant Clone Domain Accounts page.

Create an Event Database

In this exercise, you create an event database to log Horizon 7 events to a SQL Server instance, making the event data available to analytics software. For example, you can find the following types of events in the database:

- Alerts that report system failures and errors
- End-user actions, such as logging and starting desktop and application sessions
- Administrator actions, such as adding entitlements and creating desktop and application pools
- Statistical sampling, such as recording the maximum number of users over a 24-hour period

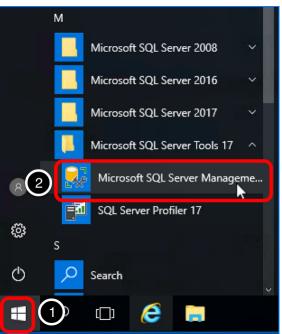
For details about the types of information recorded, see Integrating Horizon 7 with the Event Database. The event database is not required for every Horizon 7 environment. Alternatively, or in addition to using the event database, you can configure Connection Server to send events to a Syslog server or create a flat file of events written in Syslog format. See Configure Event Logging for Syslog Servers.

Prerequisites for Setting Up the Event Database

To perform this exercise, you need the following:

- **SQL Server instance** This is the database server on which you will create the event database. For the example in this exercise, we used Microsoft SQL Server 2016. To simplify the setup for completing this tutorial in a lab setup, we recommend that you use the same SQL Server instance for the event database, the Composer database, and the JMP server database. For a list of databases that support all three of these components, see Database Requirements for JMP Server.
- **Microsoft SQL Server Management Studio** For the example in this exercise, we used Microsoft SQL Server Management Studio v17.7. The instructions might differ slightly for different versions of SQL Server Management Studio.
- **Microsoft SQL Server Configuration Manager** For the example in this exercise, we used SQL Server 2016 Configuration Manager. The instructions might differ slightly for different versions of SQL Server Configuration Manager.
- **SA credentials** To create the necessary logins for the JMP server database, you will log in to the SQL Server instance as the sysadmin (SA) or as a user account with SA privileges.

1. Open Microsoft SQL Server Management Studio



1. On the VM where SQL Server and SQL Server Management Studio are installed, click the **Start** button.

2. Navigate to and select Microsoft SQL Server Management Studio.

2. Connect to the SQL Server Instance

🖵 Connect to Server		×
	SQL Server	
Server type:	Database Engine	~
Server name:	CA-SQL	~
Authentication:	SQL Server Authentication	~
Login: 2	SA	~
Password:	******	
	Remember password	
3	Connect Cancel Help	Options >>

- Select the SQL Server instance from the drop-down list.
- 2. Log in as the sysadmin (SA) or using a user account with SA privileges.
- 3. Click Connect.

3. Create a Database for Horizon 7 Events

File Edit Vie	QL Server Management Studio (Administ w Debug Tools Window Helf 🕶 🛅 🗝 😩 🔛 📲 🔒 New Query
	Reports

- 1. In the Object Explorer, right-click **Databases**.
- 2. Select New Database.

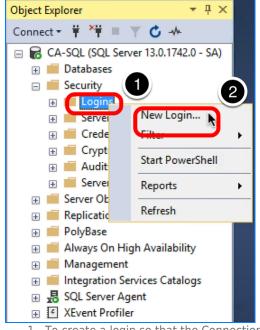
4. Name the Database

New Database						<u></u>		Х
Select a page	🖵 Script 🔻 😮	Help						
Options Filegroups	Database name:		Horizon 7Ev	vents				
	Owner:		<default></default>					
	Use full-text in	dexing						
	Database files:							
	Logical Name	File Type	Filegroup	Initial Size (MB)	Autogrowt			
	Horizon7Eve		PRIMARY	8	By 64 MB			
	Horizon7Eve	LOG	Not Applicable	8	By 64 MB	, Unlimi	ted	
Connection								
Server: CA-SQL								
Connection: SA								
y₩ <u>View connection properties</u>								
Progress								
C Ready	<							>
74D*				Add		F	Remove	
					ОК		Car	ncel

1. For the database name, enter Horizon7Events. Use the default settings.

2. Click **OK**.

5. Create a Database Login for the Connection Server Machine



1. To create a login so that the Connection Server can access the database to log events, expand the Security folder, and

- right-click **Logins**.
- 2. Select New Login.

5.1. Complete the General Settings

Login - New				220		\times
Select a page General Server Roles	🖵 Script 🔻 😯 Help					
 User Mapping Securables Status 	O Windows authentication	Horizon 7User			Search	h'
2	 SQL Server authentication Password: 	•••••				
	Confirm password:	•••••			J	
	Old password:					
	3 Enforce password policy Enforce password expire User must change pass	ation				
	O Mapped to certificate	word at next logn		Ŷ		
Connection	 Mapped to asymmetric key 			\sim		
Server: CA-SQL	Map to Credential			Y	Add	
Connection: SA	Mapped Credentials	Credential	Provider			
Y View connection properties						
Progress						
Ready		master		~	4	
	Default database:				Ĭ	
	Default language:	<default></default>		Ý	5	
				ОК	Can	cel
			-			

1. Enter a login name to use for the Connection Server machine, using ASCII characters only; for example, Horizon7User.

- 2. Select **SQL Server authentication**, and create a password.
- 3. De-select **Enforce password policy**. For the purposes of this exercise, you do not need to use password policies.
- 4. Either leave **master** as the default database or select the **Horizon7Events** database as the default database.
- 5. Select a default language.

5.2. Assign the sysadmin Server Role

Login - New		<u></u>		×
Select a page	💭 Script 🔻 😯 Help			
Server Roles User Mapping Securables Status	Server role is used to grant server-wide security privileges to a user.			
2	 bulkadmin dbcreator diskadmin processadmin y public securityadmin serveradmin setupadmin sysadmin 			
Connection				
Server: CA-SQL				
Connection: SA				
y₩ <u>View connection properties</u>				
Progress				
Ready				
		ОК	Car	icel

- Select the Server Roles page.
 Select the sysadmin check box.
- 5.3. Map the Login to the Horizon7Events Database

Login Properties - Horizon7	EventsUser		<u></u>		×
Select a page	丁 Script 🔻 😯 Help				
 General Server Roles 					
User Mapping)	Users mapped to this login:				
Securables Status	Map Database	User	Default Schema		
2 Status	Horizon 7Events	Horizon 7Events User	dbo		
)	JMPDB				
	master				
	model				
	msdb				
	tempdb				
Connection Server: CA-SQL	Guest account enabled for: Ho Database role membership for: Ho				
Connection:	db_accessadmin				
SA	db_backupoperator				
View connection properties	db_datareader db_datawriter				
	db_ddladmin				
	db_denydatareader				
Progress	db_denydatawriter db_owner				
	db_securityadmin				
Ready	Public				
		3	ОК	Car	ncel

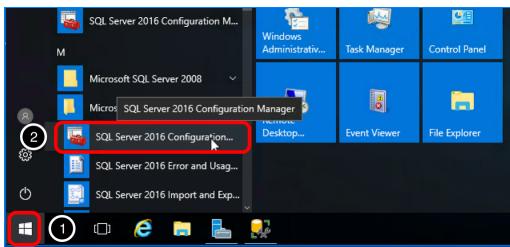
- 1. Select the **User Mapping** page.
- 2. Select the Horizon7Events database.
- 3. Click **OK**.

The new login is added under the **Logins** folder in the Object Explorer pane, and the user is added under the **Databases** > **Horizon7Events** > **Security** > **Users** folder.

6. Configure TCP/IP Properties for the Database Server

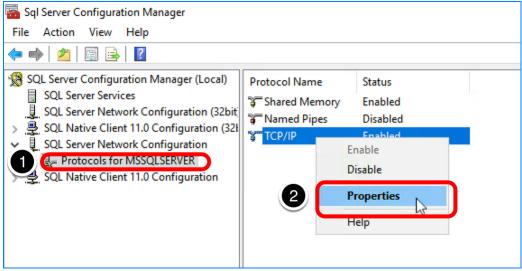
You must verify that the TCP/IP protocol is enabled and that the default port 1433 is used for all IP addresses.

6.1. Launch the SQL Server Configuration Manager



- 1. On the VM where SQL Server and SQL Server Configuration Manager are installed, click the **Start** button.
- 2. Navigate to and select **SQL Server Configuration Manager**.

6.2. Open the TCP/IP Properties Dialog Box



1. Expand SQL Server Network Configuration, and select Protocols for <server name>.

2. In the list of protocols, right-click **TCP/IP**, and select **Properties**.

6.3. Enable the Protocol

TCP/IP Properties	?	×
Protocol IP Addresses		
General		
Enabled Yes Keep Alive 30000		-
Listen All Yes		
Enabled		
Enable or disable TCP/IP protocol for this server instance		
OK Cancel Apply	н	ielp

On the **Protocol** tab, set or verify that the **Enabled** property is set to **Yes**.

6.4. Verify That the Default Port 1433 Is Used

CP Dynamic Ports CP Port P4 active	1433	^
P4	1433	
ctive		
	Yes	
nabled	No	
PAddress	127.0.0.1	
CP Dynamic Ports		
CP Port	1433	
P5		
ctive	Yes	
nabled	No	
PAddress	fe80::5efe:10.142.30.42%7	
CP Dynamic Ports		
CP Port	1433	
PAII		
CP Dynamic Ports		
CP Port	1433	
	Address CP Dynamic Ports CP Port 55 ctive nabled Address CP Dynamic Ports CP Port 24 CP Dynamic Ports	Address 127.0.0.1 CP Dynamic Ports CP Port 1433 55 Cr Port Yes nabled No Address fe80::5efe:10.142.30.42%7 CP Dynamic Ports CP Port 1433 All CP Dynamic Ports

1. On the **IP Addresses** tab, set or verify that the TCP port for **IPAII** is set to the default port 1433.

2. Click **OK**.

The database server is now properly configured.

7. Configure the Event Database in the Horizon Console

VMware Horizon 7	Pod: Cluster-HORIZONCA	Q User Search	
> Inventory ~ Settings	Event Configuration Event Database	Syslog	^
Servers Instant Clone Domain Accounts Product Licensing and Usage Global Settings Registered Machines Administrators	Edit No database has been defined, events will not be recorded. Click 'Edit' to specify a database server. Event Settings Event settings cannot be configured until a database server has been specified.	Configure syslog event logging using one or more methods below. Use of this feature on an unsecured network is not recommended. Send to syslog servers: Add No records available	
Cloud Pod Architecture Event Configuration	1	~	
Global Policies		Log to file: Enable	
JMP Configuration		Copy to location:	~

1. In Horizon Console, navigate to **Settings > Event Configuration**.

2. In the Event Configuration pane, click **Edit.**

8. Complete the Event Database Configuration Dialog Box

Edit Event Database	×
* Database server:	^
HORIZOHICA COMPO	
Database type:	
Microsoft SQL Server	
* Port:	
1433	
* Database name:	
Horizon7Events	
* User name:	
Horizon7User	
* Password:	
•••••	
* Confirm password:	
•••••	
Table prefix:	
VE_	×
	2
	Cancel OK

1. In the Edit Event Database window, enter the following information:

- $\circ~$ Database server Enter the server name or IP address.
- Database type Accept the default Microsoft SQL Server.
- $\circ~$ Port Accept the default port number (1433) used to access the database server.
- **Database name** Enter the event database name created on the database server; for example, Horizon7Events.
- **User name and Password** Enter the credentials for the user you created for this database in Complete the General Settings. For this example, the user name is Horizon7User.
- **Table prefix** Enter VE_ (for View Events).
- 2. Click **OK**.

Note: If you receive an error message and need to troubleshoot, see VMware Knowledge Base article 1029537.

The configuration settings you entered are displayed on the Event Configuration page.

Quick-Start Tutorial for VMware Horizon 7

V Monitor Dashboard Events Sessions Users and Groups JMP Assignments Inventory Port: 1433 Servers Instant Clone Domain Accourts Actions Product Licensing and Usage Global Settings Global Settings Registered Machines	VMware Horizon 7	Pod: Cluster-HORIZONCA	Q User Search About arakelian 🗸	
Clear Edit this feature on an unsecured network is not recommended. Sessions Database server type: Add JMP Assignments MP JMP Assignments Port: 1433 Database name: Horizon 7Events Log to file: Instant Clone Domain User name: Accounts User name: Product Licensing and Usage Table prefix: Clobal Settings Table prefix: Kegistered Machines Keitere on an unsecured network is not recommended.	✓ Monitor Event Database		Syslog	^
> Inventory Port: > Settings 1433 Servers Database name: Instant Clone Domain Horizon7Events Accounts User name: Product Licensing and Usage Table prefix: Global Settings Table prefix: Registered Machines Acd	Clear Edit Sessions Database server type:		this feature on an unsecured network is not recommended. Send to syslog servers:	
Instant Clone Domain Horizon7Events Log to file: Accounts User name: Enable Product Licensing and Usage Horizon7User Global Settings Table prefix: Copy to location: VE_ Add	> Inventory Port:		No records available	
Global Settings VE_ Add	Instant Clone Domain Accounts User name:			
	Giobal Settings VE_	J		
Administrators Event Settings No records available	Cloud Pod Architecture		No records available	
Global Policies Show events in View Administrator for: JMP Configuration JMP Classify events as new for: 2 Days	JMP Configuration JMP Classify events as new for:	pr for:	v	~

9. Verify a Successful Connection

VMware Horizon	7		Pod: Cluste	er-HORIZONCA	Q User Search	Abo	ut 🛛 🛓		~
✓ Monitor Dashboard	^	Events				l	Jpdated 08/11/2	2019, 4:49 P'	M
Events Sessions		Time period Last 2	days 👻			T Filter		œ ₹	
Users and Groups		User	Severity	Time	Module	Message	Objects		
JMP Assignments			A	08/11/2 4:42 P	Vlsi	euc.com\c has added		^	
✓ Inventory			Audit success	М	VISI	configurat			
Desktops	~								~

Under **Monitor** in the navigation bar on the left, select **Events** to verify that the connection to the event database is successful.

Creating Single-User Desktop Pools

Introduction

With single-user desktops, each virtual machine allows a single end-user connection at a time. In contrast, with session-based desktops, one RDSH server can accommodate many concurrent user connections. This chapter provides the following exercises for creating various types of pools that contain Windows-based single-user desktops:

- Instant-clone desktop pools
- Full-clone desktop pools
- Linked-clone desktop pools

A shared-session, RDSH desktop pool has different characteristics than a single-user automated desktop pool. Exercises for creating an RDSH desktop pool, which is based on a session to an RDSH server, appear in the next chapter, Creating RDSH-Published Desktops and Applications.

Besides Windows-based desktops, you can create Linux-based desktops. For more information, see the document Setting Up VMware Horizon 7 for Linux Desktops.

Deploy an Instant-Clone Desktop Pool

A clone is a copy of a golden VM with a unique identity of its own, including a MAC address, UUID, and other system information. The VMware Instant Clone Technology included Horizon 7 Enterprise Edition and Horizon Apps Advanced Edition improves and accelerates the process of creating cloned VMs over the previous View Composer linked-clone technology. In addition, instant clones require less storage and less expense to manage and update because the desktop is deleted when the user logs out, and a new desktop is created using the latest golden image.

Creating an instant-clone desktop pool or RDSH server farm is a two-part process:

- Publishing, also called priming, the golden image
- Provisioning the VMs in the pool or farm

Publishing the golden image can take from 7 to 40 minutes, depending on the type of storage you are using. Provisioning the VMs takes only 1 or 2 seconds per VM. You can perform these tasks at separate times, so that the provisioning process occurs either at a scheduled time or immediately after the publishing process is complete.

The Add Desktop Pool wizard or the Add Farm wizard in the Horizon Console guides you through the process of publishing the golden image. Completing the wizard for instant clones is similar to adding any type of pool or farm.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating a desktop pool, your changes will be lost.

Prerequisites for Deploying an Instant-Clone Pool

To perform this exercise, you need the following:

- **Golden VM and snapshot** Before you can deploy a pool of desktops, you must create an optimized golden image, which includes installing and configuring a Windows operating system in a VM, optimizing the OS, and installing the various VMware agents required for desktop pool deployment. For step-by-step instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.
- **Connection Server** For installation and setup instructions, see the exercises Install Horizon Connection Server, Add the Product License Key, and Add a vCenter Server Instance.
- AD OU You must have determined which Active Directory OU to use for storing instant-clone computer accounts. In a test
 environment, you can use the Computers OU. In a production environment, VMware recommends that you create a specific
 OU and domain user, and delegate the minimum required permissions, as described in the exercise Create a Domain User
 Account and OUs in AD for Clone Operations.
- Instant-clone domain administrator You must have added an instant-clone domain administrator, as described in the exercise Add an Instant-Clone Domain Administrator.
- VM folder (Optional) Having a specific VM folder in the vCenter Server inventory helps you locate and manage the virtual desktops in the instant-clone pool.

1. Start the Add Pool Wizard in the Horizon Console

VMware Horizon 7		Pod: Cluster-HORIZONCA	Q User Search	A	About 🛛	. c	~
 Monitor Users and Groups JMP Assignments 	Add Edit Delete	Entitlements v Status	✓ Access Group ✓	View Unentitled V	,		
~ Inventory	Access group All			T Filter		G	ŧ
Desktops Applications	di di	Displa Type	Source User A	vCente Entitled	Applic E	nabled App	p ^

- 1. Log in to the Horizon Console, and select **Inventory** > **Desktops**.
- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. Click **Add**.

2. Select the Automated Desktop Pool Type

Add Pool		
🕑 Туре	 Automated desktop pool Manual desktop pool 	
VCenter Server	O RDS desktop pool	
3 User Assignment		
4 Storage Optimization		
5 Desktop Pool Identification		
6 Provisioning Settings		
7 vCenter Settings		2
	Cancel Pre-	vious Next
1. Select Automated Deskte) Pool.	

- 2. Click Next.
- 3. Select the Instant Clone Type and the vCenter Server Instance

Add Pool	
🗸 Туре	O Instant Clone View Composer linked clones
VCenter Server	O Full Virtual Machines
3 User Assignment	vCenter Server 2 vc-vdi.l c.com
4 Storage Optimization	
5 Desktop Pool Identification	
6 Provisioning Settings	
7 vCenter Settings	3
	Cancel Previous Next

- 1. Select Instant Clone, and, optionally, add a description of the pool.
- 2. Select the vCenter Server instance.
- 3. Click Next.

4. Select Floating Assignment

Add Pool		
Type VCenter Server	 Floating Dedicated Enable automatic assignment 	
3 User Assignment		
4 Storage Optimization		
5 Desktop Pool Identification		
6 Provisioning Settings		
VCenter Settings	~ 2	
		Next

- 1. Select **Floating**. Instant-clone pools can use either floating or dedicated user assignment. For this exercise, we use floating assignment.
 - **Dedicated assignment** Each desktop is assigned to a specific user. A user logging in for the first time gets a desktop that is not assigned to another user. The user always gets this same desktop after logging in, and this desktop is not available to any other user.

• **Floating assignment** – Users get a random desktop every time they log in. When a user logs out, the desktop is deleted. With automatic deletion, you keep only as many VMs as you need at one time.

2. Click Next.

5. Choose Whether to Use vSAN

Add Pool	
🕑 Туре	Storage Policy Management Use VMware Virtual SAN
VCenter Server	 Do not use VMware Virtual SAN Use separate datastores for replica and OS disks
User Assignment	
4 Storage Optimization	
5 Desktop Pool Identification	
6 Provisioning Settings	
7 vCenter Settings	~ 2
	Cancel Previous Next

1. Select **Do not use VMware Virtual SAN**, and select **Use separate datastores for replica and OS disks**.

2. Click Next.

For this exercise, use separate datastores so that you can see the extra settings In the next window. With separate datastores, you can place the replica VM on a solid-state, disk-backed datastore. Solid-state disks have low storage capacity but high read performance, typically supporting 20,000 IOPS. Separate datastores are used in tiered-storage models.

In a production environment, you might select to use VMware Virtual SAN. VMware Virtual SAN, or VMware vSAN[™], is a softwaredefined storage tier that virtualizes the local physical storage disks available on a cluster of vSphere hosts. You specify only one datastore when creating an automated desktop pool or an automated farm, and the various components, such as virtual machine files, replicas, user data, and operating system files, are placed on the appropriate solid-state drive (SSD) disks or direct-attached hard disks (HDDs).

6. Enter a Pool ID and Display Name

Add Pool - Win10-insta	ant-clone	
🕑 Туре	* ID: Win10-instant-clone	
VCenter Server	2 Display name: Windows 10 Desktop	
User Assignment	Access group:	
Storage Optimization	Description:	
5 Desktop Pool Identification		
6 Provisioning Settings		
7 vCenter Settings	~	•
		Cancel Previous Next

1. Add a pool ID.

2. (Optional) Add a display name, which users will see when they log in using Horizon Client or the HTML Access web client. If you do not provide a display name, the pool ID is used for the display name.

- 3. (Optional) Select an access group. If you do not specify an access group, the pool is placed in the root access group. For more information about access groups, see the product documentation topic Manage and Review Access Groups.
- 4. Click Next.

7. Specify Provisioning Settings

Add Pool - Win10-instant-clone	
 Type Basic Enable provisioning Stop provisioning on error 	^
Virtual Machine Naming * Naming Pattern:	
User Assignment U Win10-IC	
 Storage Optimization Provisioning Timing Provision machines on demand 	
Object Min number of machines: 1	
6 Provisioning Settings Desktop Pool Sizing * Max number of machines:	
vCenter Settings 3 10 * Number of spare (powered on) machines:	
8 Desktop Pool Settings	
Image: Settings Virtual Device Image: Add a Trusted Platform Module (vTPM) device to the VMs Image: Setting the Virtual Device to the VMs	*
Cancel Previous Ne 1. Enter a naming pattern for the VMs. For example, for this exercise, you can use Win10-IC.	xt

- This naming pattern helps you identify Windows 10 instant clones in Horizon Console.
- 2. Select **Provision machines on demand**, and use the default minimum of **1**.
- 3. Set **Max number of machines** to **10** or fewer (for the purposes of this exercise).
- In a production environment, instant-clone pools have been tested to support up to 2,000 desktops.
- 4. Set Number of spare (powered on) machines to 1.
- 5. Use the defaults for the other settings, and click $\ensuremath{\textbf{Next}}.$

8. Complete the Default Image Settings

Add Pool - Win10-instant-o	clone	
📀 Туре	^ Default image	^
⊘ vCenter Server	Parent VM in vCenter:	BrowseN
	Snapshot:	
User Assignment	Virtual Machine Location	Browse
Storage Optimization	VM Folder Location:	
Desktop Pool Identification		Browse
Provisioning Settings	Resource Settings	
VCenter Settings		Browse
8 Desktop Pool Settings	Resource pool:	Browse
	Instant clone datastores: Click Browse to select	
9 Remote Display Settings	Click browse to select	Browse
		Cancel Previous Next

Click the **Browse** button next to the first setting, which is **Parent VM**.

Important: This page has numerous settings, and in the next steps, we do not copy this screenshot into every step, but instead only refer to it and show a screenshot of the window that appears when you click **Browse** for that setting.

Note: This page refers to the *default* image because after the pool is created, you can edit the pool and select a different snapshot to use if you want to push a new image and generate new desktops using that other image.

Describing all the settings in detail is beyond the scope of this quick-start guide. For details about all the settings in the Add Desktop wizard, see the product documentation topic Worksheet for Creating an Instant-Clone Desktop Pool in Horizon Console.

8.1. Select a Parent VM

Select Parent VM		
Select the virtual machines to be used as the pa	erent VM for this deskt	top pool
Show all parent VMs 💿		T Filter
Name	Path	
Win10-templ-CA	/DC-	/vm/CA/Win10-templ-CA
Win10InstCloneParent-CA	/DC-	/vm/CA/Win10InstCloneParent-CA
Ubuntu-1	/DC-	/vm/Linux/Ubuntu-1
		Submit Canc

2. Click **Submit**.

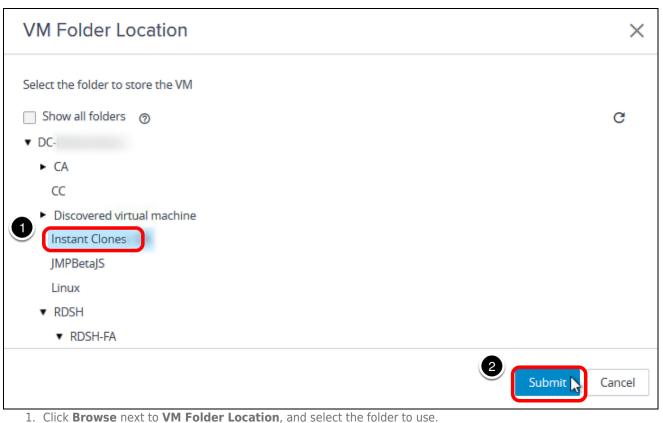
8.2. Select a Snapshot of the Golden VM

Select default image				×
Parent VM in vCenter: /DC/vm				
				G
Snapshot Details				
Snapshot	Time Created	Description	Path	
V	08/07/2 3:03 PM		10000000000	^
				~
SVGA settings for Instar	nt Clone Pool (Inherit	ted from Master VM)		
Number of monitors:	vRAM Size:	Resolution:	3D Renderer:	
1	8.00 MB	1600x1200	Disabled	
			2	c 1
			Submit	Cancel
	Parent VM in vCenter: /DC/vm Snapshot Details Snapshot	Snapshot Details Snapshot Time Created 08/07/2 3:03 PM SVGA settings for Instant Clone Pool (Inherited Stream) Number of monitors: vRAM Size:	Parent VM in vCenter: /DC/vm Snapshot Details Snapshot Details 08/07/2 3:03 PM VGA settings for Instant Clone Pool (Inherited from Master VM) Number of monitors: vRAM Size: Resolution:	Parent VM in vCenter: /DC/vm Snapshot Details Snapshot Details Snapshot Details 08/07/2 3:03 PM SVGA settings for Instant Clone Pool (Inherited from Master VM) SVGA settings for Instant Clone Pool (Inherited from Master VM) Number of monitors: vRAM Size: Resolution: 3D Renderer: B 00 MB 1600x1200 Disabled

For instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

2. Click **Submit**.

8.3. Select a VM Folder for the Instant Clones in the Pool



Note: The **Instant Clones** folder shown in the screenshot is just an example; you can select any available folder. The VM folder is described in **Prerequisites for Deploying an Instant-Clone Pool**.

2. Click Submit.

8.4. Select the Resource Cluster

Select Cluster		×
Select a cluster on which to run the virtual machines created for this desktop pool		
▼ DC-		G
Desktops-1		
Desktops-2		
Desktops-3		
1 Desktops-4		
	2 Submit 📐	Cancel
1. Click Browse next to Cluster , and select a vCenter Server resource cluster.		

Note: The cluster selected in the screenshot is just an example; you can select any available cluster. 2. Click **Submit**.

8.5. Select a Resource Pool

Resource Pool	×
Select a resource pool to use for this desktop pool. Desktops-4	G
1. Click Browns port to Become Deal, and coloct a recourse pool	2 Submit Cancel

1. Click **Browse** next to **Resource Pool**, and select a resource pool.

- **Note**: The resource pool selected in the screenshot is just an example; you can select any available resource pool.
- 2. Click Submit.

8.6. Select a Datastore for the Clones

Select Instant Clone Datastores								×
	selected	d.	astores to use for thi luding local datastor		nly datastores tha	at can be used by the sele	ected host or cluster can b	е С
		Datastore	Capacity (GB)	Free (GB)	FS Type	Drive Type	Storage Overco	
		AppStack_R epo	2,047.75	2,006.12	VMFS6	Non-SSD		^
		📻 AppStacks-1	2,047.75	1,600.35	VMFS6	Non-SSD		
		ClusterVDI3- DS1	2,047.75	2,046.31	VMFS6	Non-SSD		
		ClusterVDI3- DS2	2,047.75	2,046.31	VMFS6	Non-SSD	Unbounded	Ļ
	Data	Туре	Selected Free Spac	e (Min Reco	mmended (50% utilization (GB)	Max Recommended (
	Instar	nt clones	2,046.31	80		200	360	^
								Ŷ
							Submit Cano	cel

- Click Browse next to Instant-Clone Datastores, and select a datastore.
 Note: The datastore selected in the screenshot is just an example; you can select any available datastore or multiple datastores.
- 2. Click **Submit**.

8.7. Select a Datastore for the Replica Disk

elect the replica disk data elected.	astore to use for thi	s desktop pool. Only datastores	that can be used by the	selected host or cluster ca	n be
Show all datastores (in	cluding local datast	ores) 💿			(
Datastore	Capacity (GB)	Free (GB)	FS Type	Drive Type	
📾 AppStack_Repo	2,047.75	2,006.12	VMFS6	Non-SSD	,
RepStacks-1	2,047.75	1,600.35	VMFS6	Non-SSD	
💼 ClusterVDI3-DS1	2,047.75	2,046.31	VMFS6	Non-SSD	
ClusterVDI3-DS2	2,047.75	2,046.31	VMFS6	Non-SSD	
📾 t3600-02-ISO	1.023.75	880.86	VMFS6	Non-SSD	
Data Type		Selected Free Space (GB)	Min Reco	mmended (GB)	
Replica disks		2,046.31	64		1

 Click Browse next to Replica Disk Datastores, and select a datastore. Note: The datastore selected in the screenshot is just an example; you can select any available datastore or multiple datastores.

2. Click **Submit**.

8.8. Select a Network

Select Network	(S)
elect networks to use fo	or this automated pool.			
Use network from cu	urrent parent VM image	1		
	se for this instant clone po	ol. Only static binding port	groups are supported by insta	ant
ones.				
		T	Filter	G
Network	Port Binding	Total Ports	Available Ports	
	Port Binding earlyBinding	Total Ports	Available Ports	^
Network DPG-ESXi_Mgmt DPG-iSCSI1				^
	earlyBinding	64	54	^

2. Click Submit.

8.9. Click Next on the Default Image Page

Quick-Start Tutorial for VMware Horizon 7

vCenter Server	^ Default image		
User Assignment	Parent VM in vCenter:		
	/DC/vr	Browse	
Storage Optimization	Snapshot:		
	N ~~~	Browse	
Desktop Pool Identification	Virtual Machine Location		
	VM Folder Location:		
Provisioning Settings	/DC/vm/Discovered virtual machine	Browse	
vCenter Settings	Resource Settings		
	Cluster:		
Desktop Pool Settings	/DC/host/ClusterVDI3	Browse	
Remote Display Settings	Resource pool:		

On the page that summarizes the default image settings you selected, click Next.

9. Specify Desktop Pool Settings

Add Pool - Win10-instan	t-clone			
VCenter Server	State:			^
User Assignment	Enabled Connection Server restrictions:	~		
Storage Optimization	None Browse Category Folder:			
Oesktop Pool Identification	None Browse Session Types:			
Provisioning Settings	Desktop	~	0	
✓ vCenter Settings	Automatically logoff after disconnect: Never Allow users to restart/reset their machines:	~		
Desktop Pool Settings	No	~		
Remote Display Settings	Allow users to initiate separate sessions from different client devices:	~	0	~
			Cancel Previou	5 Next

For the purposes of this exercise, use the default settings, and click **Next**.

10. Specify Remote Display Settings

Add Pool - Win10-instant-clor	e
^	Remote Display Protocol
Oesktop Pool Identification	Default display protocol:
Provisioning Settings	VMware Blast ~
✓ vCenter Settings	Yes 🗸
Desktop Pool Settings	Manage using vSphere Client v 3
Remote Display Settings	HTML Access: Chabled (2) Requires installation of HTML Access.
Guest Customization	Allow Session Collaboration: Image: Collaboration Requires VMware Blast Protocol.
1 Ready to Complete	3
	Cancel Previous Next

- 1. Select the **HTML Access** check box so that users will be able to access virtual desktops using their web browsers instead of Horizon Client.
- 2. Select the **Allow Session Collaboration** check box.
- 3. Use the defaults for the other settings, and click **Next**.

11. Select a Domain and AD Container on the Guest Customization Page

Add Pool - Win10-instant-clone					
✓ vCenter Settings	Domain:				
Desktop Pool Identification	AD Container:				
	accounts				

- 1. Under **Domain**, select the instant-clone domain administrator, which you added in the exercise Add an Instant-Clone Domain Administrator.
- 2. Click **Browse** in the AD Container section.

11.1. Select the Active Directory OU for the Desktops

AD container	\times
▼ com	
CN=Computers	
► CN=Configuration	
CN=ForeignSecurityPrincipals	
CN=Keys	
CN=Managed Service Accounts	
 CN=Program Data 	
► CN=System	
CN=Users	
OU=Domain Controllers	
OU=EndUsers	
OU=Horizon 7.3	
OU=Horizon 7.5	
OU=Horizon Desktops	
OU=Horizon Desktops NoAD	
OU=Instant Clones	
OU=IT	
► OU=JS_RDSH	
► OU=RDSH	
OU=Servers	
OU=Test_IC_GPO	
Select the OLI that you created in the exercise Create a Domain User Account and OLIs in AD for Clone One	

1. Select the OU that you created in the exercise Create a Domain User Account and OUs in AD for Clone Operations, or if this is a test environment, you can select the Computers OU.

2. Click **Submit**.

11.2. Click Next on the Guest Customization Page

Add Pool - Win10-instant-clor	e				
^				C	^
Oesktop Pool Identification	Domain:				
Provisioning Settings		~			
Provisioning settings	* AD Container: CN=Computers	Browse			
VCenter Settings	Allow reuse of pre-existing computer accounts	0			
Desktop Pool Settings	Use ClonePrep Power-off script name:				
Remote Display Settings	Power-off script parameters:	0			
Guest Customization	Example: p1 p2 p3				
1 Ready to Complete	Post-synchronization script name:	0			
•	Doct synchronization script parameters:				~
			Cancel Previous	Next	

Leave the other fields on the Guest Customization page blank, and click $\ensuremath{\textbf{Next}}.$

12. Begin Deploying the Desktop Pool

Add Pool - Win10-instant-clone						
User Assignment	 Entitle users after this wizard finishes 			^		
	Туре:	Automated desktop pool				
Storage Optimization	User Assignment:	Floating assignment				
Oesktop Pool Identification	vCenter Server:	vc-vdi.l:com				
Provisioning Settings	Use View Composer:	No				
	Unique ID:	Win10-instant-clone				
✓ vCenter Settings	Description:					
Desktop Pool Settings			.:			
	Display name:	Windows 10 Desktop				
Remote Display Settings	Access group:	1				
Guest Customization	Desktop pool state	Enabled				
Ready to Complete	Session Types:	Desktop				
•	Automatically logoff after disconnect:	Never		Ŷ		
		[Cancel Previous	Submit		

Leave the check box at the top of the window de-selected, and click **Submit**. Entitling users is a separate exercise.

For more information about the available settings in this wizard, see the product documentation topic Worksheet for Creating an Instant-Clone Desktop Pool in Horizon Console.

13. Monitor the Pool Creation Process

VMware Horizon ⁻⁷					Q User Sear	ch		About	2 ad	lministrator 🗸
Assignments JMP Users and Groups	Des	ktop Po Edit	ols Delete	Entitlemen	ts v Sta	tus ~ Ac	cess Group	View Ur	nentitled v	
✓ Inventory Desktops	Access	group All	~				T Filt	er		C 7
Applications Farms		ID	Display	Туре	Source	User As	vCenter	Entitled	Enabled	Sessions
Machines Registered Machines		Win10- instant- clone	Windows 10 Desktop	Automa desktop pool	vCenter (instant clone)	Floating assign	vc- deskto	0	~	0
Settings JMP		jmp-inst- clone	JMP Instant Clone	Automa desktop pool	vCenter (instant clone)	Floating assign	vc- deskto	1	~	1

To access details about the newly added pool, click the pool name on the Desktop Pools page.

If you do not see the pool listed, click the Refresh icon above the table.

14. Verify That One Instant-Clone Desktop Is Available

VMware Horizon 7	Q. User	Search About 🛛 🔹 administrator 🗸
	General	
Assignments JMP		
	Unique ID:	Туре:
Users and Groups	Win10-instant-clone	Automated desktop pool
✓ Inventory	User Assignment:	Machine source:
	Floating assignment	vCenter (instant clone)
Desktops		
Applications	Display name:	Access group:
Applications	Windows 10 Desktop	/
Farms		
	State:	Provisioning:
Machines	Enabled	Enabled
Registered Machines	Sessions:	Number of entitled users and groups:
	0	0
Settings JMP		
	Number of Machines:	
	1	
	Machina Ctatus	
	Machine Status	
	Available	
	1	

In the Machine Status area, verify that one instant-clone desktop is now available. For this exercise, you selected to provision the

desktops on demand, with a minimum of one desktop available.

Important: Now that you have created an instant-clone desktop pool, you can entitle users to it, either by using the Add Entitlements wizard, as described in a later exercise, or by using the JMP Integrated Workflow to define a JMP assignment. JMP assignments include information about the App Volumes AppStacks, instant-clone desktops pools, and Dynamic Environment Manager settings for specific groups of users. For instructions, see the Quick-Start Tutorial for VMware Horizon JMP Integrated Workflow.

Push a New Image to an Instant-Clone Desktop Pool

To manage OS patches and software updates with instant clones, you use the push-image operation. The push-image operation achieves the same goal as the recompose operation for View Composer linked clones. However, the recompose operation is slower and requires you to plan for maintenance windows to perform the operation at off-peak hours. Because the provisioning of instant clones is faster than that of View Composer linked clones, it is not necessary to plan for maintenance windows.

Unlike linked clones, instant clones do not need to be recomposed, refreshed, or rebalanced. When a user logs out of the desktop, the desktop is deleted and recreated. This approach to desktop deletion and recreation staggers the patching operation across desktops, eliminates boot storms, reduces storage IOPS, and creates less of a load on the vCenter Server.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating a push-image operation, your changes are lost.

Prerequisites for Pushing a New Image

To perform this exercise, you need:

- Instant-clone desktop pool You must have completed the exercise Deploy an Instant-Clone Desktop Pool.
- New VM snapshot You must have a new image to push to the desktop pool. Therefore, use vSphere Web Client, select the VM that you created for deploying the instant-clone pool, and create a new VM snapshot. For details, see the vSphere documentation topic Taking a Snapshot.

VMware Horizon ⁻⁷				(२ User Sear	ch		About 🕻	• 1 ad	lministrator	~
Assignments JMP Users and Groups V Inventory Desktops	Des Add Access		Delete	Entitlement	is v Sta	tus ~ Acc	cess Group		nentitled v	C	*
Applications Farms		ID	Display	Туре	Source	User As	vCenter	Entitled	Enabled	Sessions	
Machines Registered Machines	2	Win10- instant- clone	Windows 10 Desktop	Automa desktop pool	vCenter (instant clone)	Floating assign	vc- deskto	0	~	0	^
Settings JMP		jmp-inst- clone	JMP Instant Clone	Automa desktop pool	vCenter (instant clone)	Floating assign	vc- deskto	1	~	1	

1. Go to the Summary Page for the Pool

1. Log in to the Horizon Console, and select **Inventory** > **Desktops**.

- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. Click the pool name on the Desktop Pools page.

2. Select to Schedule Maintenance

VMware Horizon 7	Pod: Cluster-HORIZONCA	Q User Search About 🛛 🔒	~
 Monitor Dashboard Events Sessions Users and Groups JMP Assignments JMP 	Win10-instant-clone Summary Machines Machines (InstantC Sessions Edit Delete Desktop Pool Entitlements Status Mo users or groups are entitled to this pool. Click Entitlements General General	Entitlements Events Tasks Policies Policy Overrides Maintain Schedule Cancel	C
✓ Inventory	Unique ID: Win10-instant-clone	Type: Automated desktop pool	
Desktops Applications Farms Machines Persistent Disks	User Assignment: Floating assignment Display name: Windows 10 Desktop State: Enabled	Machine source: vCenter (instant clone) Access group: / Provisioning: Enabled	
> Settings	Sessions: 0	Number of entitled users and groups: 0	*

On the **Summary** tab, select **Schedule** from the **Maintain** drop-down list.

3. Select a New VM Snapshot

Schedule Push Image	e					
	Image					
1 Image	Select the snapshot that will be used as the image. This snapshot can be on the current parent VM or a different one.					
2 Schedule	The machines created in this desktop pool will use the information in the image as their baseline system configuration.					
3 Ready to Complete	Parent VM in vCen	ter:				
e neady to complete	/DC-	/Win10InstClo	oneParent	Change		
	Snapshot:					
	Snapshot Details	5			G	
	Snapshot	Time Created	Description	Path		
	Horizon, App Vol, FlexEngine Agents	6/27/: , 4:52 PM	VM Snapshot 6/27/ 4:50:44 PM	/Horizon, App Vol, FlexEngine Agents	*	
	OS Updates for this week	8/16/ 2:34 PM		/Horizon, App Vol, FlexEngine Agents/OS Updates for this week		
 Select the new snapshot that 	t you created			2 Next C	ancel	

2. Click Next.

For this exercise, we select a new snapshot taken of the same golden VM, but you can also use this page to navigate to a different VM and select a snapshot.

4. Click Next to Start the Task After Users Log Off

Schedule Push Image	2
🖌 Image	Scheduling Specify when you want this task to start
2 Schedule	Start at: 08-16 14 : 35 Web browser local time
3 Ready to Complete	 Wait for users to log off Wait for connected users to disconnect before the task starts. The task starts immediately on machines without active sessions.
	 Force users to log off Users will be forced to log off when the system is ready to operate on their virtual machines. Before being forcibly logged off, users may have a grace period in which to save their work (Global Settings). Stop at first error (2) The warning and grace period can be edited in global settings: Display warning before forced logoff: Log off time: minutes
	Log off message:
	Your desktop is scheduled for an important update and will shut down in 5 minutes. Please save any unsaved
Leave the start time set to the d	Back Next Cancel

The default is **Wait for users to log off**. If, instead, you select to force users to log off, you can give users a warning and a grace period of 5 minutes, by default. To edit this setting, after you finish creating the schedule, open the Horizon Administrator (https://<connection-server-FQDN>/admin), navigate to **View Configuration** > **Global Settings**, and click **Edit** in the General settings section.

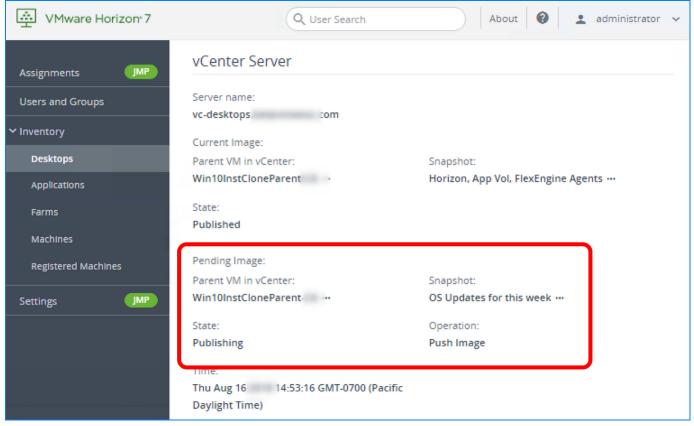
Note: The Stop at first error check box is available only if the Stop provisioning on error check box is not selected on the Edit Pool > Provisioning Settings tab.

5. Click Finish to Complete the Maintenance Schedule

Schedule Push Imag	e	
🕑 Image	Ready to Complete Review the options and click Finish	
Schedule	Forced logoff global settings:	
3 Ready to Complete	Log off message:	Your desktop is scheduled for an important update and will shut down in 5 minutes. Please save any unsaved work now
	Log off time:	5 minutes
	Affected virtual machines: Start time:	3 8/16/ 2:35 PM
	Start time: User log off:	8/16/ 2:35 PM Wait for users to log off
	Stop at first error:	Yes
	Parent VM in vCenter:	/DC-
		/Win10InstCloneParent
	Image:	/Horizon, App Vol, FlexEngine Agents/OS Updates for this week
	Show Details	
		Back Finish Cancel

Click **Finish**. You are returned to the **Summary** tab for the desktop pool, where the pending image for the push operation is displayed in the vCenter Server panel. The state changes from Publishing to Published.

Quick-Start Tutorial for VMware Horizon 7



6. Monitor Progress for Individual Desktops

VMware Horizon ⁻⁷		Pod: Cluster-HORIZ		User Search	About 🛛	+	~
 Monitor Dashboard Events 	Win10-instar Summary Mac Policy Overrides	hines Machines (Instan	ntC Sessions	Entitlements Eve	nts Tasks Policies		^
Sessions 	Restart Desktop	Reset Virtual Machine	Recover	Remove More Cor	nmands v		
JMP Assignments JMP					T Filter	C 1	
✓ Inventory Desktops	Machine Machine	User	Image	Pending Ima Task	Last Compose	Status	
Applications	🗌 👩 <u>Win10-</u>	<u>IC1</u>	W10-GOLD -	None	Aug 15, . 10:19:06 AM	Available	•
Farms						-	~

Click the **Machines (InstantClone Details)** tab to monitor which individual desktops are using which image.

Deploy a Full-Clone Desktop Pool

A full clone is an independent copy of a VM. It shares nothing with its golden VM, and it operates entirely separately from the golden VM used to create it. In this exercise, you create full-clone desktops with dedicated user assignment.

Before Horizon 7 was released, full-clone dedicated desktops were created for users who needed to install their own applications. This requirement was weighed against the management overhead required to maintain each individual full clone and all the data and applications installed in the VM.

With Horizon 7 and App Volumes, you have the alternative of creating Just-in-Time Desktops. You can combine instant-clone desktops with App Volumes writable disks, which allow users to install their own applications. This strategy allows you to create disposable desktops that retain user customizations, personas, and user-installed apps from session to session, even though the cloned desktop is destroyed when the user logs out. Users experience a stateful desktop, while the enterprise realizes the

VMWare[°] Confidential | © VMware, Inc.

economy of stateless desktops. For more information, see JMP and VMware Horizon 7 Deployment Considerations.

Prerequisites for Deploying a Full-Clone Pool

To perform this exercise, you need the following:

 Golden VM template – Before you can deploy a pool of full-clone desktops, you must create an optimized golden image, which includes installing and configuring a Windows operating system in a VM, optimizing the OS, and installing the various VMware agents required for desktop pool deployment. For step-by-step instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

Important: Follow the instructions in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop, but instead of taking a snapshot of the VM after you finish creating and optimizing it, you must clone the VM to a VM template. For instructions, see the vSphere product documentation topic Clone a Virtual Machine to a Template in the vSphere Web Client. When creating instant-clone and linked-clone desktops, you use a VM snapshot, but for full-clone desktops, you must use a VM template instead of a snapshot.

• **Microsoft Sysprep customization specification** – If you do not already have a Microsoft Sysprep customization specification for the Windows 10 guest operating system, use the Guest Customization wizard in the vSphere Client to create one. See the vSphere product documentation topic Create a Customization Specification for Windows. You will select this customization specification when completing the Add Desktop Pool wizard.

Note: VMware recommends that you test a customization specification in vSphere before you use it to create a desktop pool. When you use a Sysprep customization specification to join a Windows desktop to a domain, you must use the FQDN of the Active Directory domain. You cannot use the NetBIOS name.

- **Connection Server** For installation and setup instructions, see the exercises Install Horizon Connection Server, Add the Product License Key, and Add a vCenter Server Instance.
- VM folder (Optional) A VM folder in the vCenter Server inventory. Having a specific folder in the vCenter Server inventory helps you locate and manage the virtual desktops in the full-clone pool.

VMware Horizon ⁻⁷		Pod: Cluster-HORIZONCA	Q User Search	About Ø	± ~ ~
Monitor Users and Groups JMP Assignments JMP Inventory	Add Edit Delete	3 Entitlements Y Status	 ✓ Access Group 	View Unentitled View Unentitled	C 🛓
Desktops Applications	DID	Displa Type	Source User A	vCente Entitled Applic	Enabled App

1. Start the Add Pool Wizard in the Horizon Console

1. Log in to the Horizon Console, and select **Inventory** > **Desktops**.

The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

2. Click Add.

2. Select the Automated Desktop Pool Type

Quick-Start Tutorial for VMware Horizon 7

Add Pool		
🕑 Туре	Automated desktop pool	
VCenter Server	 Manual desktop pool RDS desktop pool 	
3 User Assignment		
4 Storage Optimization		
5 Desktop Pool Identification		
6 Provisioning Settings		
VCenter Settings	•	2
		Cancel Previous Next
1 Coloct Automated Deale		

1. Select Automated Desktop Pool.

2. Click Next.

3. Select the Full Clone Type and the vCenter Server Instance

Add Pool		
🕑 Туре	 Instant Clone View Composer linked clones Full Virtual Machines 	^
2 vCenter Server	vCenter Server	
3 User Assignment	vc-vdicom	
4 Storage Optimization		
5 Desktop Pool Identification		
6 Provisioning Settings	~	,
7 vCenter Settings	Description:	
Dackton Bool	Cancel Previous Ne	ext

1. Select **Full Virtual Machines**, and, optionally, add a description of the pool.

2. Select the vCenter Server instance.

3. Click Next.

4. Enable Automatic Assignment

Quick-Start Tutorial for VMware Horizon 7

Add Pool	
📀 Туре	Dedicated Enable automatic assignment
vCenter Server	
3 User Assignment	
4 Storage Optimization	
5 Desktop Pool Identification	
6 Provisioning Settings	
vCenter Settings	
Decitor Bool 1. Select Allow automa	Cancel Previous Next

- 2. Click Next.
- 5. Choose Whether to Use vSAN

Quick-Start Tutorial for VMware Horizon 7

Add Pool	
Type VCenter Server	 Storage Policy Management Use VMware Virtual SAN Do not use VMware Virtual SAN
User Assignmer	ıt.
4 Storage Optimization	
5 Desktop Pool Identification	
6 Provisioning Settings	
vCenter Setting:	
Dackton Dool	Cancel Previous Next

Click Next.

In a production environment, you might select to use VMware Virtual SAN. VMware Virtual SAN, or VMware vSAN[™], is a softwaredefined storage tier that virtualizes the local physical storage disks available on a cluster of vSphere hosts. You specify only one datastore when creating an automated desktop pool or an automated farm, and the various components, such as virtual machine files, replicas, user data, and operating system files, are placed on the appropriate solid-state drive (SSD) disks or direct-attached hard disks (HDDs).

6. Enter a Pool ID and Display Name

Add Pool - win-10	-dedicated
Type VCenter Server User Assignment	 * ID: win-10-dedicated Display name: Dedicated Windows 10 VM Access group:
 Storage Optimization Desktop Pool 	Description:
6 Provisioning Settings	
VCenter Settings Decision Real	v
	Cancel Previous Next

- 1. Add a pool ID.
- 2. (Optional) Add a display name, which users will see when they log in using Horizon Client or the HTML Access web client. If you do not provide a display name, the pool ID is used for the display name.
- 3. (Optional) Select an access group. If you do not specify an access group, the pool is placed in the root access group. For more information about access groups, see the product documentation topic Manage and Review Access Groups.
- 4. Click Next.

7. Specify Provisioning Settings

Add Pool - win-10-dedicated						
ועד 🕑	pe	O names entered Start machines in maintenance mode	Enter names	^		
VC	enter Server	# Unassigned machines kept powered on 1 Use a naming pattern		l		
🕑 Us	er Assignment	* Naming Pattern: Win10-FC				
	orage otimization	 Provisioning Timing Provision machines on demand 				
	esktop Pool entification	Min number of machines: 1 Provision all machines up-front				
-	ovisioning ttings	3 Desktop Pool Sizing * Max number of machines:				
7 vC	enter Settings	Number of spare (powered on) machines:				
Do	sites Deel	C	ancel Previous Next			

- Enter a naming pattern for the VMs. For example, for this exercise, you can use Win10-FC. This naming pattern helps you identify Windows 10 full clones in Horizon Console.
- 2. Select $\ensuremath{\text{Provision machines on demand}},$ and use the default minimum of $\ensuremath{\textbf{1}}.$
- Set Max number of machines to 10 or fewer (for the purposes of this exercise).
 In a production environment, full-clone pools have been tested to support up to 2,000 desktops.
- 4. Set Number of spare (powered on) machines to 1.
- 5. Use the defaults for the other settings, and click $\ensuremath{\textbf{Next}}.$

8. Complete the Virtual Machine Template Settings

Add Pool - win-10-dedicated				
🔨 Туре	Virtual Machine Template			
VCenter Server	Template:			
	Virtual Machine Location			
User Assignment	VM Folder Location:			
Storage Optimization	Browse			
Oesktop Pool	Resource Settings			
Identification	Host or cluster: Browse			
Provisioning	Resource pool:			
Settings	Datastores:			
vCenter Settings	Click Browse to select Browse			
Desisten Beel				
	Cancel Previous Next			

Click the **Browse** button next to the first setting, which is **Template**.

Important: This page has numerous settings, and in the next steps, we do not copy this screenshot into every step, but instead only refer to it and show a screenshot of the window that appears when you click **Browse** for that setting.

Describing all the settings in detail is beyond the scope of this quick-start guide. For details about all the settings in the Add Desktop wizard, see the product documentation topic Worksheet for Creating an Automated Pool That Contains Full Virtual Machines in Horizon Console.

8.1. Select a VM Template

Select template	2	×
Select a template from which to deploy virtual machines selected.	s for this pool. Only templates with a supported OS can be	
Show all templates	T Filter C 🗜	
1 ^{Template}	Path	
Win10-template-	/DC Win10-template	
	2 Submit Cancel	

 Select the VM template that you created. For instructions on creating and optimizing a VM, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop. For instructions on creating a VM template, see the vSphere product documentation topic Clone a Virtual Machine to a Template in the vSphere Web Client.

- 2. Click **Submit**.
- 8.2. Select a VM Folder for the Full Clones in the Pool

VM Folder Location	×
 Instant Clones - CA 	
JMPBetaJS	
Linux	
► RDSH	
Templates	
UEM94	
W101803	
1) W16VDIICJS	
Win10	
Win10ICJS	
Win10JMPBeta	
Win10NoADMode	
Win10OSTJS	
	2 Submit Cancel
1. Click Browse next to VM Folder Location, and sele	

Note: The **Win10** folder shown in the screenshot is just an example; you can select any available folder. The VM folder is described in **Prerequisites for Deploying a Full-Clone Pool**.

2. Click **Submit**.

8.3. Select the Resource Cluster

Select Cluster		×
Select a cluster on which to run the virtual machines created for this desktop pool		
		G
▼ DC-		
Desktops-1		
Desktops-2		
Desktops-3		
1 Desktops-4		
	2 Submit N	Cancel
1. Click Browse next to Cluster , and select a vCenter Server resource cluster.		

Note: The cluster selected in the screenshot is just an example; you can select any available cluster.

^{2.} Click Submit.

8.4. Select a Resource Pool

Resource Pool	×
Select a resource pool to use for this desktop pool.	G
1. Click Provide port to Personne Person and colort a recourse person	2 Submit Cancel

- 1. Click **Browse** next to **Resource Pool**, and select a resource pool.
- Note: The resource pool selected in the screenshot is just an example; you can select any available resource pool.
- 2. Click **Submit**.

8.5. Select a Datastore for the Clones

Select Datastores						×		
Select	Select the Datastore type: Individual Datastore Select the datastores to use for this desktop pool. Only datastores that can be used by the selected host or cluster can be selected.							
	Datastore	Capacity(GB)	Free(GB)	FS Type	Drive Type			
	t3600-01-Beta- VDI-4-1	2047.75 GB	1587.79 GB	VMFS6	Non-SSD	~		
	t3600-01-Beta- VDI-4-2	2047.75 GB	1724.41 GB	VMFS6	Non-SSD			
	t3600-01-ISOs	1023.75 GB	798.46 GB	VMFS6	Non-SSD			
	w3-eucvra- bl-25_local	271.25 GB	269.84 GB	VMFS6	Non-SSD			
					2 Submit N	Cancel		

1. Click **Browse** next to **Datastores**, and select a datastore.

2. **Note**: The datastore selected in the screenshot is just an example; you can select any available datastore or multiple datastores.

3. Click **Submit**.

8.6. Click Next on the Virtual Machine Template Page

Add Pool - win-10-dedicated					
У Туре	^	Virtual Machine Template			
		Template:			
VCenter Server		/DC/vm/ /W10-TMPL	Browse		
User Assignment		Virtual Machine Location			
		VM Folder Location:			
Optimization		/DC/vm/CA_Win10	Browse		
		Resource Settings			
Desktop Pool		Host or cluster:			
		/DC/host/ClusterVDI3	Browse		
Provisioning		Resource pool:			
Settings		/DC/host/ClusterVDI3/Resources	Browse		
		Datastores:			
7 vCenter Settings		1 selected	Browse		
Desisten Real	Ŷ				
			Cancel Previous Next		

On the page that summarizes the default image settings you selected, click **Next**.

9. Specify Desktop Pool Settings

Add Pool - win-10-dedicated					
	Provisioning Settings	^	State:		
	vCenter Settings		Connection Server restrictions:		
8	Desktop Pool Settings		Category Folder: None Browse		
9	Remote Display Settings	i	Session Types: Desktop \checkmark Remote Machine Power Policy:	0	
0	Advanced Storage Options		Take no power action	0	
0	Guest Customization		Never Allow users to restart/reset their machines: No V		
12	Ready to Complete	~			
			Ca	ncel Previous Next	

For the purposes of this exercise, use the default settings, and click **Next**.

10. Specify Remote Display Settings

Ad	dd Pool - win-10-	-dedic	ated					
Ø	Provisioning	^	Allow users to choose protocol:					^
Ĩ	Settings		Yes	~				
			3D Renderer:					
	vCenter Settings		Disabled	\sim	0			
	Desisten Real		vRAM Size:					
v	Desktop Pool Settings		96		MB			
			More VRAM can Improve 3D performance.					
9	Remote Display		Max number of monitors:		-			
	Settings		2	~	0			
0	Advanced Storage		May require power-cycle of related virtual machines ③ Max resolution of any one monitor:					
	Options		1920x1200	\sim	0			
			May require power-cycle of related virtual machines ③					
O	Guest Customization		HTML Access: 🔽 Enabled 💿					
			Requires Installation of HTML Access.					
12	Ready to Complete	2	Allow Session Collaboration: 💽 Enabled 🛛 📀					
		~	Requires VMware Blast Protocol.			3		~
				Γ	Cancel	Previous	Next	
					concer	. Tevious	ITEAC	

- 1. Select the **HTML Access** check box so that users will be able to access virtual desktops using their web browsers in addition to Horizon Client.
- 2. Select Allow Session Collaboration.
- 3. Use the defaults for the other settings, and click **Next**.

11. Click Next on the Advanced Storage Options Page

A	dd Pool - win-10	0-dedicated	
0	Provisioning Settings	Based on your resource selection, the following features are recommended. Options that are not supported by selected hardware are disabled.	t
0	vCenter Settings	Use View Storage Accelerator Regenerate storage accelerator after:	
0	Desktop Pool Settings	7 Days Blackout Times	
0	Remote Display Settings	Storage accelerator regeneration and VM disk space reclamation do not occur during blackout times. The same blackout policy applies to both operations. Add Edit Delete	
0	Advanced Storage Options	Day Time	
0	Guest Customization	No records available	
12	Ready to Complete	Transparent Page Sharing Scope:	
		Virtual Machine	xt

Click Next.

12. Select a Sysprep Customization Specification

Add Pool - win-10-de	edicated			
Desktop Pool				
Settings	None - Customization	will be done manually		
		virtual machines after creati	ion	
Remote Display	Use this customizatio	n specification:		
Settings	Allow reuse of pre	e-existing computer account	s 🕐	
				G
Provisioning				
Settings	Name	Guest OS	Description	
	2 AddToDomain-DHCP	Windows		^
Advanced Storage				
Options				
11 Guest				
Customization				
12 Ready to Complete				
v				
			3	
			Cancel Previous	Next 💦
1. Select Use this customiza	ation specification.			

Select the customization specification.
 Note: The customization specification selected in the screenshot is just an example; select the customization specification you created.

3. Click Next.

13. Begin Deploying the Desktop Pool

Add Pool - win-10-dedicated				
Desktop Pool Settings				
	Entitle users after this wizard fini	shes		
Remote Display Settings	Туре:	Automated desktop pool		
	User Assignment:	Dedicated assignment		
Provisioning Settings	Enable automatic assignment:	Yes		
	vCenter Server:	vc-desktops.betavmweuc.com		
 Advanced Storage Options 	Unique ID:	win-10-dedicated		
	Description:			
Guest Customization	Display name:	Dedicated Windows 10 VM		
	Access group:	1		
12 Ready to Complete	State:	Enabled		
•		Cancel Previous Submit		

Leave the check box at the top of the window de-selected, and click **Submit**. Entitling users is a separate exercise.

For more information about the available settings in this wizard, see the product documentation topic Worksheet for Creating an Automated Pool That Contains Full Virtual Machines in Horizon Console.

14. Monitor the Pool Creation Process

VMware Horizon-7	Po	d: Cluster-HORIZONCA	Q User Search			bout Ø	1	~
> Monitor Users and Groups	Desktop Pools	Entitlements v Status	Access Group	View Une	entitled v	1		
JMP Assignments JMP	Access group				T Filter			€ ∓
Desktops		Displa Type	Source User A	vCente	Entitled	Applic	Enabled	App 5
Applications Farms Machines	U Win10-instant-clone	Window Automat s 10 Des ed deskt ktop op pool	vCenter Floating (instant assignm clone) ent	vc-vdi.be tavmwe uc.com	0	N/A	~	^
Persistent Disks	win-10-denticated	Dedicate d Windo ws 10 V M	Dedicate vCenter d assign ment	vc-vdi.be tavmwe uc.com	0	N/A	~	

To access details about the newly added pool, click the pool name on the Desktop Pools page.

VMWare[°] Confidential | © VMware, Inc.

If you do not see the pool listed, click the Refresh icon above the table.

15. Check the Machine Status

VMware Horizon ⁻⁷	Pod: Cluster-HORIZON	CA Q. User Search About 🖉 🛓	`
> Monitor	A No users or groups are entitled to this pool. Click	Entitlements to add users to this pool.	
Users and Groups	General		
JMP Assignments JMP	Unique ID: win-10-dedicated	Туре:	
✓ Inventory		Automated desktop pool	
Desktops	User Assignment: Dedicated assignment	Enable automatic assignment: Yes	
Applications	Machine source:	Display name:	
Farms	vCenter	Dedicated Windows 10 VM	
Machines	Access group:	State:	
Persistent Disks	1	Enabled	
	Provisioning: Enabled	Sessions: 0	
> Settings	Enabled	0	
	Number of entitled users and groups:	Number of Machines:	
	0	1	
	Machine Status		
	Provisioning 1		

Scroll down to the Machine Status area, which displays the VM state. The state changes from Provisioning to Customizing to Available.

Deploy a Linked-Clone Desktop Pool

Linked clones allow administrators to easily create and manage pools of similar desktops. Because linked-clone desktops share a base system-disk image, they use less storage than full VMs. All linked-clone desktops can be patched or updated by updating the golden VM and VM snapshot.

Prerequisites for Deploying a Linked-Clone Pool

To perform this exercise, you need the following:

- **Golden VM and snapshot** Before you can deploy a pool of desktops, you must create an optimized golden image, which includes installing and configuring a Windows operating system in a VM, optimizing the OS, and installing the various VMware agents required for desktop pool deployment. For step-by-step instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.
- **AD OU** You must have determined which Active Directory OU to use for storing linked-clone computer accounts. In a test environment, you can use the Computers OU. In a production environment, VMware recommends that you create a specific OU and domain user, and delegate the minimum required permissions, as described in the exercise Create a Domain User Account and OUs in AD for Clone Operations.
- **Connection Server** For installation and setup instructions, see the exercises Install Horizon Connection Server and Add the Product License Key.
- **Composer server** For installation and setup instructions, see the exercises Install the Composer and Add a vCenter Server Instance.
- VM folder (Optional) A VM folder in the vCenter Server inventory. Having a specific folder in the vCenter Server inventory helps you locate and manage the virtual desktops in the linked-clone pool.

Important: In this exercise, you use the Horizon Console. If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating a desktop pool, your changes will be lost.

1. Start the Add Pool Wizard in the Horizon Console

VMware Horizon ⁻ 7		Pod: Cluster-HORIZONCA	Q User Search	About 🔮	± c •
 Monitor Users and Groups JMP Assignments 	Add Edit Delete	Entitlements v Status	 ✓ Access Group ✓ 	View Unentitled v	
✓ Inventory	Access group All ~			T Filter	C Ŧ
Desktops Applications	ID	Displa Type	Source User A vC	ente Entitled Applic	Enabled App

- 1. Log in to the Horizon Console, and navigate to **Inventory** > **Desktops**.
- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. Click **Add**.

2. Select the Automated Desktop Pool Type

Add Pool		
🕑 Туре	Automated desktop pool Manual desktop pool	
VCenter Server	O RDS desktop pool	
3 User Assignment		
4 Storage Optimization		
5 Desktop Pool Identification		
6 Provisioning Settings		
7 vCenter Settings		2
		Cancel Previous Next
1. Select Automated Desk	top Pool.	

2. Click Next.

3. Select the Linked Clone Type and Connect to vCenter

Add Pool			
Type VCenter Server	 Instant Clone View Composer linke Full Virtual Machines 		
3 User Assignment	vCenter Server	View Composer m horizonca-compo.	t .com
4 View Composer Disks			
5 Storage Optimization			
6 Desktop Pool Identification			~
7 Provisioning Settings	Description:	.:	
8 vCenter Settings			
9 Desktop Pool Settings	~		3
		Can	

- 1. Select View Composer linked clones.
- 2. Select the vCenter Server instance.
- 3. Click Next.
- 4. Select Floating Assignment

Quick-Start Tutorial for VMware Horizon 7

Add Pool	
Type VCenter Server	 Floating Dedicated Enable automatic assignment
3 User Assignment	
4 View Composer Disks	
5 Storage Optimization	
6 Desktop Pool Identification	
Provisioning Settings	
8 vCenter Settings	
9 Desktop Pool Settings	~
	Cancel Previous Next

- 1. Select **Floating**. Linked-clone pools can use either floating or dedicated user assignment. For this exercise, we use floating assignment.
 - **Dedicated assignment**: Each desktop is assigned to a specific user. A user logging in for the first time gets a desktop that is not assigned to another user. The user always gets this same desktop after logging in, and this desktop is not available to any other user.
 - **Floating assignment**: Users get a random desktop every time they log in. When a user logs out, the desktop is either refreshed and returned to the pool or deleted, depending on pool settings. With automatic deletion, you keep only as many VMs as you need at one time.
- 2. Click Next.

5. Direct Disposable Files to a Nonpersistent Disk

Quick-Start Tutorial for VMware Horizon 7

Add Pool	
📀 Туре	 Disposable File Redirection (?) Redirect disposable files to a non-persistent disk
vCenter Server	Disk size: 4096 MB (minimum 512 MB) Drive letter: Aut ② O not redirect disposable files Image: Constraint of the second sec
View Composer Disks	
5 Storage Optimization	
6 Desktop Pool Identification	
7 Provisioning Settings	
8 vCenter Setting	
9 Desktop Pool Settings	~ (2)
1.0000000	Cancel Previous Next

 On the View Composer Disks page, leave the default setting to redirect disposable files to a nonpersistent disk that will be deleted automatically when a user's session ends. Disposable files consist of the paging file and the system-level **Temp** directory.

2. Click Next.

6. Set Storage Optimization

Add Pool	
🗸 Туре	Storage Policy Management Use VMware Virtual SAN
vCenter Server	 Do not use VMware Virtual SAN Use separate datastores for replica and OS disks Virtual Volumes(VVOL) and fast NFS clones (VAAI) will be unavailable if the replica disks and
User Assignment	OS disks are stored on separate datastores.
View Composer Disks	
5 Storage Optimization	
6 Desktop Pool Identification	
7 Provisioning Settings	
8 vCenter Settings	
9 Desktop Pool Settings	
	Cancel Previous Next

1. Select Use separate datastores for replica and OS disks.

2. Click Next.

For this exercise, use separate datastores so that you can see the extra settings on the next wizard page. With separate datastores, you can place the replica VM on a solid-state, disk-backed datastore. Solid-state disks have low storage capacity but high read performance, typically supporting 20,000 IOPS. Separate datastores are used in tiered-storage models.

In a production environment, you might select to use VMware Virtual SAN. VMware Virtual SAN, or VMware vSAN[™], is a softwaredefined storage tier that virtualizes the local physical storage disks available on a cluster of vSphere hosts. You specify only one datastore when creating an automated desktop pool or an automated farm, and the various components, such as virtual machine files, replicas, user data, and operating system files, are placed on the appropriate solid-state drive (SSD) disks or direct-attached hard disks (HDDs).

7. Provide a Pool ID

Add Pool - win-10	-linked-clone
🕑 Туре	* ID: win-10-linked-clone
vCenter Server	Display name: Windows 10 Linked Clone
User Assignment	Access group:
View Composer Disks	Description:
Storage Optimization	
6 Desktop Pool Identification	
7 Provisioning Settings	
8 vCenter Settings	
9 Desktop Pool Settings	~
1 Complete the Decktor	Cancel Previous Next Pool Identification page:

- Add a pool ID.
 - $\circ~$ (Optional) Add a display name, which users will see when they log in using Horizon Client or the HTML Access web client.
 - If you do not provide a display name, the pool ID is used for the display name.
 - Optional) Select an access group.
 If you do not specify an access group, the pool is placed in the root access group. For more information about access groups, see the product documentation topic Manage and Review Access Groups.
- 2. In the lower right, click **Next**.

8. Configure Provisioning Settings

A	dd Pool - win-10-link	ked-clone	
	^	Specify Names Manually	^
Ø	Туре	0 names entered Enter names	
		Start machines in maintenance mode	
0	vCenter Server	# Unassigned machines kept powered on	
		1	
Ø	User Assignment	O Use a naming pattern	
		* Naming Pattern:	
Ø	View Composer	win-10-LC	
	Disks		
		Provisioning Timing Provision machines on demand	
	Storage		
	Optimization	Min number of machines: 2	
		Provision all machines up-front	
	Desktop Pool Identification	Dealana Deal Sizion	
	Identification	Desktop Pool Sizing * Max number of machines:	
		10	
7	Provisioning Settings		
	8-	* Number of spare (powered on) machines:	
	vCenter Settings	2	
•	vcenter settings	* Minimum number of ready (provisioned) machines during View Composer maintenance	
		operations:	
9	Desktop Pool Settings		
	×		~
		Cancel Previous Next	ה
		Cancer Previous Nex	

1. On the Provisioning Settings page, change the following settings.

- Enter a naming pattern for the VMs. For example, for this exercise, you can use Win-10-LC-. This naming pattern helps you identify Windows 10 linked clones in Horizon Administrator.
- $\circ~$ Select Provision machines on demand, and set Min number of machines to 2.
- Set **Max number of machines** to **10** or fewer (for the purposes of this exercise). In a production environment, linked-clone pools have been tested to support up to 2,000 desktops.
- Set Min number of spare (powered on) machines to 2.
- Set Min number of ready (provisioned) machines to 1.
- 2. Click Next.
- 9. Configure vCenter Settings

Add Pool - win-10-l	linked-clone	
🔗 Туре	Default image	
VCenter Server	Parent VM in vCenter: /DC/vm/C I/W10-C Browse Snapshot:]
User Assignment	/WSO-Enroll Browse]
View Composer	Virtual Machine Location	
Disks	VM Folder Location:	~
Storage	/DC/vm/CA_Win10 Browse	
Optimization	Resource Settings	_
Desktop Pool	Host or cluster:	_
Identification	/DC/host/ClusterVDI3 Browse	
	Resource pool:	-
Provisioning Settings	/DC/host/ClusterVDI3/Resources Browse	
	Linked clone datastores:	1
8 vCenter Settings	Drowse	J
9 Desktop Pool Settings	Replica disk datastores: 1 selected Browse]
	Cancel Previo	2 Next

- 1. On the vCenter Settings page, click **Browse** next to each text box to make your selections. When making your selections, use the following guidelines:
 - **Parent VM**: Select the golden VM that you created for linked clones in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.
 - $\circ~$ Snapshot: Select the snapshot of the golden VM that you created.
 - $\circ~$ VM folder location: If you do not have a folder created, select the data center, and click OK.
 - Linked clone datastores and Replica disk datastores: If you are not using a tiered-storage model, you can select the same datastore for replicas and clones.
- 2. Click Next.

10. Configure Desktop Pool Settings

Add Pool - win-10-lir	nked-clone
🔨 Туре	State:
VCenter Server	Enabled Connection Server restrictions: None Browse
User Assignment	Category Folder: None Browse
View Composer Disks	Session Types:
Storage Optimization	Remote Machine Power Policy: Take no power action
Desktop Pool Identification	Automatically logoff after disconnect:
Provisioning	Allow users to restart/reset their machines:
Settings	Allow users to initiate separate sessions from different client devices: Yes
VCenter Settings	Delete or refresh machine on logoff: Never ⑦
9 Desktop Pool Settings	
	Cancel Previous Next

On the Desktop Pool Settings page, you can leave the default settings and click **Next**. Be sure to leave **State** set to **Enabled**.

Note: if you select **Yes** for **Allow users to initiate separate sessions from different client devices**, a user connecting to the same desktop pool from different client devices will get different desktop sessions. In this case, the user does not pick up from where they left off unless they are connecting to the same session from the same client device.

11. Configure Remote Display Settings

Add Pool - win-10-	linked-clone
Optimization	Remote Display Protocol
Desktop Pool Identification	VMware Blast ✓
Provisioning Settings	Allow users to choose protocol: Yes
vCenter Settings	3D Renderer:
Desktop Pool Settings	vRAM Size: 96 MB More VRAM can Improve 3D performance.
Remote Display Settings	Max number of monitors:
Advanced Storage Options	Max resolution of any one monitor: 1920x1200 May require power-cycle of related virtual machines ()
12 Guest Customization	HTML Access: Image: Comparison of the second se
13 Ready to Complete	Allow Session Collaboration: C Enabled (2) Requires VMware Blast Protocol.
	Cancel Previous Next

- 1. On the Remote Display Settings page, complete the following settings:
 - Leave Default display protocol set to VMware Blast. The Blast Extreme display protocol is optimized for all types of devices.
 - Set **HTML Access** to **Enabled**. Because you are enabling HTML Access, you can access your desktop from a browser if you do not want to install VMware Horizon Client later.
 - Set Allow Session Collaboration set to Enabled. This setting allows users of the pool to invite other users to join their remote desktop sessions. Session owners and session collaborators must use the VMware Blast display protocol.
 - \circ For assistance with selecting the other settings, click the **?** icon next to the setting, or use the default setting.
- 2. Click Next.

12. Advanced Storage Options

А	dd Pool - win-10)-linked-clone
Image: A start of the start	Optimization Desktop Pool Identification	 Based on your resource selection, the following features are recommended. Options that are not supported by selected hardware are disabled. Use View Storage Accelerator
	Provisioning Settings	Disk Types: OS disks Regenerate storage accelerator after:
0	vCenter Settings	7 Days Vother Options
	Desktop Pool Settings	 Use native NFS snapshots (VAAI) Reclaim VM disk space
	Remote Display Settings	Initiate reclamation when unused space on VM exceeds:
0	Advanced Storage Options	Blackout Times Storage accelerator regeneration and VM disk space reclamation do not occur during blackout times. The same blackout policy applies to both operations.
Ð	Guest Customization	Add Edit Delete
13	Ready to Complete	Day Time No records available
		Cancel Previous Next

On the Advanced Storage Options page, click **Next**.

For the purposes of this exercise, you can use the defaults, but make sure to read the Advanced Storage Options page and the embedded help text on the page to learn about the storage features available for linked clones.

13. Configure Guest Customization

Ac	dd Pool - win-10	-linked-	clone					
	Optimization	^					G	^
	Desktop Pool		Domain:					
	Identification	1	c.com(c	¨)	~			
			* AD Container:					
Ø	Provisioning		CN=Computers		Browse			
	Settings		Allow reuse of pre-exis	ting computer accounts	0			
			 Use QuickPrep 					
	vCenter Settings		Power-off script name:					
					0			
	Desktop Pool Settings		Downer off covint name					
	2		Power-off script parame	ters.				
	Remote Display		Example: p1 p2 p3					
	Settings		Post-synchronization sc	ript name:				
					0			
	Advanced Storage Options		Post-synchronization sc	ript parameters:				
12	Guest		Example: p1 p2 p3					
	Customization		 Use a customization sp 	ecification (SysPrep)				
						C		
B	Ready to Complete							
		¥	Name	Guest OS	Description	2		~
					Cancel	Previous	Next	
								/

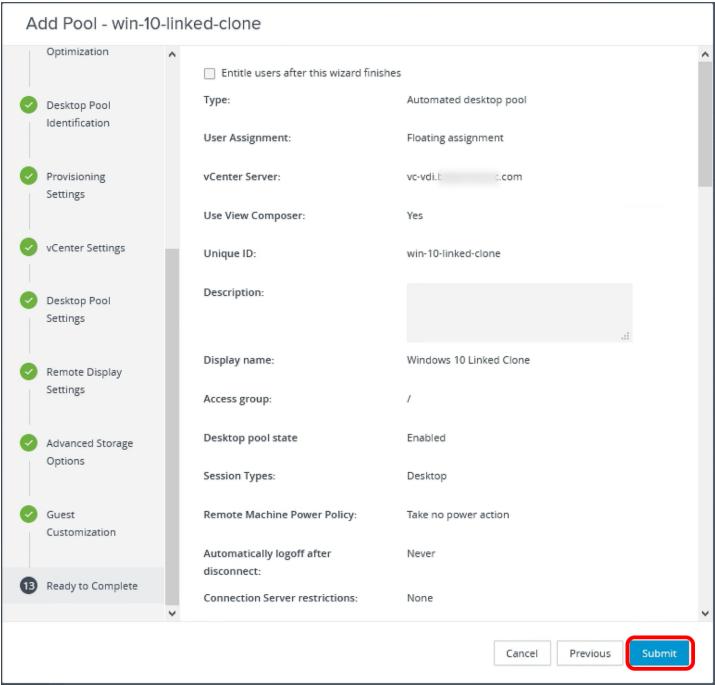
1. On the Guest Customization page, use the following settings.

- $\,\circ\,$ Domain: Select the domain and user that were used when configuring View Composer settings.
- **AD container**: Click **Browse** and select the OU that you created in the exercise **Create** a **Domain User Account and** OUs in AD for Clone Operations, or if this is a test environment, you can select the Computers OU.
- Use QuickPrep: Select this option. When you create linked-clone machines, you must modify each VM so that it can function as a unique computer on the network. QuickPrep and Microsoft Sysprep provide different approaches to customization. Because QuickPrep runs faster than Sysprep, and because QuickPrep does not require you to create a customization specification, use QuickPrep for this exercise.
 Note: For this exercise, you do not enter scripts. In a production environment, you can specify that a script run

immediately after a clone is created. You can also run another script before the clone is powered off. These scripts can invoke any process that can be created with the Windows CreateProcess API, such as CMD, VBScript (VBS), EXE, and batch-file processes.

2. Click Next.

14. Finish Completing the Wizard



On the Ready to Complete page, click **Submit**. You return to the **Inventory > Desktops** list. The new pool appears in the list.

15. Monitor Progress by Going to the Summary Tab

Users and Groups ID Displa Type Source User A vCente Entitled Applic Enabled App S JMP Assignments JMP Inventory Image: State of the state of t	오 VMware Horizon 7		Pod:	Cluster-HOI	RIZONCA	Q	Jser Search			About 0	. .		Ý
Events Sessions Users and Groups JMP Assignments Vintotic victorie Settops Applications Farms Machines Persistent Disks Persistent Disks	Monitor	Desl	ktop Pools										
Sessions Access group AII Users and Groups JMP Assignments Vintows Statistic Applications Farms Machines Persistent Disks <td>Dashboard</td> <td>Add</td> <td>Edit Delete</td> <td>Entitlement</td> <td>s v Stat</td> <td>us v A</td> <td>ccess Group</td> <td>~ View</td> <td>Unentitled</td> <td>~</td> <td></td> <td></td> <td></td>	Dashboard	Add	Edit Delete	Entitlement	s v Stat	us v A	ccess Group	~ View	Unentitled	~			
JMP Assignments JMP JMP Assignments JMP Inventory Displa Type Source User A vCenter Entitled Applic Enabled App Si Machines Win-10-dedicated Dedicated ows 10 VM Mutomat ed Clone vCenter (instant clone) Floating assignm vc-vdl.b 0 N/A V Persistent Disks Win-10-linked-clone Window stol Automat ed Clone VCenter ed deskt Floating assignm vc-vdl.b 0 N/A V		Access	group All ~						T Filte	r		C	ŧ
Machlnes Persistent Disks Win10-iniked_clone Window Automat vCenter Floating vc-vdi.b 0 N/A ✓ Desktops Image: Construction of the point of	Users and Groups		ID	Displa	Туре	Source	User A	vCente	Entitled	Applic	Enabled	App S	i
Applications Image: Constraint of the second se	Inventory		Uin10-instant-clone	s 10 Des	ed deskt	(instant	assignm		0	N/A	~		^
Persistent Disks Win-10-linked-clone Window Automat vCenter Floating vc-vdi.b ed Clon ed deskt (linked c assignm 0 N/A	Applications		win-10-dedicated	ed Wind ows 10	ed deskt	vCenter	ed assig		0	N/A	~		
Settings	Persistent Disks		win-10-linked-clone	s 10 Link			-		0	N/A	~		

Click the desktop pool name to go to the **Summary** tab for the pool.

16. Check the Machine Status

Monitor Unique ID: Type:	^
onque to.	
Dashboard win-10-linked-clone Automated desktop pool	
Events User Assignment: Machine source:	
Sessions Floating assignment vCenter (linked clone)	
Users and Groups Display name: Access group: Windows 10 Linked Clone /	
JMP Assignments JMP State: Provisioning:	
Enabled Enabled	
Desktops Sessions: Number of entitled users and groups: 0 0	
Applications Number of Machines:	
Farms 2	
Machines Charters Charters	
Persistent Disks	
Provisioning	
> Settings 2	
vCenter Server	~

Scroll down to the Machine Status area, which displays the VM state. The state changes from Provisioning to Customizing to Available.

Note: To create another linked-clone pool, you can select this pool In the Desktop Pools window and click **Clone** to clone this pool. The pool's settings are copied into the Add Desktop Pool wizard, allowing you to create a new pool without having to fill in each setting manually. You can clone full-clone and linked-clone desktop pools.

VMWare[°] Confidential | © VMware, Inc.

Creating RDSH-Published Desktops and Applications

Introduction

Horizon 7 Published Desktops and Applications are based on sessions to RDSH servers. That is, administrators use Microsoft Remote Desktop Services (RDS) to provide users with desktop and application sessions on RDS hosts. Delivering published applications and desktops is a very simple process:

- 1. Create an RDSH server farm from a golden VM image, which automatically clones the number of servers you specify.
- 2. Publish a desktop pool so that multiple users can access session-based shared desktops from RDSH servers.
- 3. Publish one or multiple application pools with one trip through the Add Application Pool wizard.
- 4. Learn how to perform image maintenance tasks for RDSH servers.

Create an Instant-Clone RDSH Server Farm

A farm can contain from 1 to 500 RDSH servers. For the exercises in this guide, you create an automated farm of RDSH servers, which is similar to creating an automated pool of instant-clone desktops. With this feature, you do not need to create and configure each RDSH server separately.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating a server farm, your changes will be lost.

Prerequisites for Creating an Instant-Clone Server Farm

To perform this exercise, you need the following:

 Golden VM and snapshot – Before you can deploy a farm of RDSH servers, you must create an optimized golden image, which includes installing and configuring a Windows operating system in a VM, optimizing the OS, and installing the various VMware agents required for server farm deployment. For step-by-step instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

Important: The golden VM for RDSH servers must have the appropriate RDSH roles and services installed, as described in the section of that guide called Configure Windows Server Systems for VDI or RDSH.

Note: It is also possible to enable Windows Server machines to be used as single-user desktops rather than RDSH servers, which provide session-based shared desktops. For information, see the product documentation topic Prepare Windows Server Operating Systems for Desktop Use. None of the exercises that follow involves creating single-user desktops from Windows Server machines.

• **AD OU** – You must have determined which Active Directory OU to use for storing instant-clone computer accounts. In a test environment, you can use the Computers OU. In a production environment, VMware recommends that you create a specific OU and domain user, and delegate the minimum required permissions, as described in the exercise Create a Domain User Account and OUs in AD for Clone Operations.

Note: For the server farm OU, give the OU a descriptive name such as RDSH Servers.

- Instant-clone domain administrator You must have added an instant-clone domain administrator, as described in the exercise Add an Instant-Clone Domain Administrator.
- VM folder (Optional) A VM folder in the vCenter Server inventory. Having a specific folder in the vCenter Server inventory helps you locate and manage the RDSH servers in the instant-clone farm.
- Applications The applications you provide to end users can be either installed directly on the RDSH server, or dynamically attached, as App Volumes AppStacks. Before you begin this exercise, install any applications that you want to have in the base image, available for all users.
 Note: To install applications directly on an RDSH server, place the host into RD-Install mode, install the desired applications, and place the host back into RD-Execute mode. For more information, see the Microsoft TechNet article Learn How To Install Applications on an RD Session Host Server. If you plan to use AppStacks, be sure to install the App Volumes Agent, as described in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

1. Start the Add Farm Wizard in the Horizon Console

VMware Horizon 7	Pod: Cluster-HORIZONCA Q User Search	About 🛛 🛓 🔷 🗸 🗸
✓ Monitor	Farms	
Dashboard 2	Add Edit Delete More Commands ~ Access group ~	
Events Sessions	Access group All V	Ţ Filter C ≛
Users and Groups	ID Type Source RDS Hosts Desktop Applicati	Sessions Max num Enabled
JMP Assignments JMP	No records available	^
~ Inventory Desktops		
Farms		
Machines		
Persistent Disks		
> Settings		
		~
1. Log in to the Horizo	n Console, and select Inventory > Farms .	

- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. Click Add.

2. Select the Automated Farm Type

Quick-Start Tutorial for VMware Horizon 7

Add Farm	
1 Туре	Automated Farm Manual Farm
2 vCenter Server	
3 Storage Optimization	
4 Identification and Settings	
5 Provisioning Settings	
6 vCenter Settings	~
1. Select Automated	Cancel Previous Next

2. Click Next.

3. Select Instant Clone and Select the vCenter Server Instance

Add Farm	
Type	^
2 vCenter Server vCenter Server	
3 Storage Optimization	
4 Identification and Settings	
5 Provisioning Settings	,
6 vCenter Settings 3 Cancel Previous	v ext

2. Select the vCenter Server instance.

3. Click Next.

4. Choose Whether to Use vSAN

Add	Farm	
 Тур <li< th=""><th>oe enter Server</th><th> Storage Policy Management Use VMware Virtual SAN Do not use VMware Virtual SAN Use separate datastores for replica and OS disks </th></li<>	oe enter Server	 Storage Policy Management Use VMware Virtual SAN Do not use VMware Virtual SAN Use separate datastores for replica and OS disks
-	orage otimization	
-	entification and ttings	
	ovisioning ttings	
6 vCe	enter Settings	v
		Cancel Previous Next

1. Select **Do not use VMware Virtual SAN**.

2. Click Next.

In a production environment, you might select to use VMware Virtual SAN. VMware Virtual SAN, or VMware vSAN, is a softwaredefined storage tier that virtualizes the local physical storage disks available on a cluster of vSphere hosts. You specify only one datastore when creating an automated desktop pool or an automated farm, and the various components, such as virtual machine files, replicas, user data, and operating system files, are placed on the appropriate solid-state drive (SSD) disks or direct-attached hard disks (HDDs).

5. Enter a Pool ID and Select Remote Display Settings

Add Farm - RDSH-Fa	arm
	* ID
Туре	RDSH-Farm
VCenter Server	Description
Storage Optimization	
Identification and Settings	Access group
5 Provisioning Settings	Farm Settings
6 vCenter Settings	Default display protocol ③
	Allow users to choose protocol
7 Guest Customization	Yes 🗸
8 Ready to Complete	3D Renderer: ③ Manage using vSphere Client
	Pre-launch session timeout (applications only) ③
	After V 10 minutes
	Empty session timeout (applications only) ③
	After Y 1 minutes
	When timeout occurs
	Disconnect
	Log off disconnected sessions
	Never ~
2	Allow HTML Access to desktops and applications on this farm: Enabled Requires Installation of HTML Access.
3	Allow Session Collaboration: 🔽 Enabled 💿
	Requires VMware Blast Protocol.
	Max sessions per RDS Host:
	Unlimited ~
	Cancel Previous Next

- 1. Add a pool ID; for example, enter RDSH-Farm.
- 2. Scroll down and select the **HTML Access** check box so that users will be able to access virtual desktops using their web browsers in addition to Horizon Client.
- 3. Enable Allow Session Collaboration.
- 4. Use the defaults for the other settings, and click **Next**.

6. Specify Provisioning Settings

Add Farm -	RDSH-Farm
🥑 Type	Basic Enable provisioning
VCenter Server	Stop provisioning on error
Storage	Virtual Machine Naming
Optimization	* Naming Pattern:
ldentification a	
Settings	Farm Sizing * Max number of machines:
5 Provisioning	2) 10
Settings	 Minimum number of ready (provisioned) machines during Instant Clone maintenance operations:
	3)
6 vCenter Setting	
	Cancel Previous Next

- 1. Enter a naming pattern for the VMs. For example, for this exercise, you can use RDSH-. This naming pattern helps you identify RDSH server instant clones in Horizon Console.
- 2. For farm sizing, set **Max number of machines** to **10** or fewer (for the purposes of this exercise).

In a production environment, instant-clone farms have been tested to support up to 200 servers.

- 3. Set Number of ready machines to 1.
- 4. Use the defaults for the other settings, and click **Next**.

7. Complete the Default Image Settings

Add Farm - RDSH-Fa	arm	
VCenter Server	Default image	
Storage Optimization	Parent VM in vCenter: Brow	/se
Identification and Settings	Brow	/se
Provisioning Settings	VM Folder Location:	/se
6 vCenter Settings	Resource Settings	
7 Guest Customization ✓	Cluster: Brow	vse 🗸
	Cancel	Previous Next

Click the **Browse** button next to the first setting, which is **Parent VM**.

Important: This page has numerous settings, and in the next steps, we do not copy this screenshot into every step, but instead only refer to it and show a screenshot of the window that appears when you click **Browse** for that setting.

Note: This page refers to the *default* image because after the pool is created, you can edit the pool and select a different snapshot to use if you want to push a new image and generate new desktops using that other image.

Describing all the settings in detail is beyond the scope of this quick-start guide. For details about all the settings in the Add Desktop wizard, see the product documentation topic Worksheet for Creating an Automated Instant-Clone Farm in Horizon Console.

7.1. Select a Parent VM

Select Parent VM		\times
Select the virtual machines to be used as the parer	nt VM for this Automated Farm	Í
Show all parent VMs ②	T Filter	G
Name	Path	
Win2016-template	/DC/vm/Templates/Win2016-template	^
Nsrv_2016_JS	/DC/vm/VDICluster2/Wsrv_2016_JS	
RDSH-79-GOLD	/DC/vm/RDSH-79-GOLD	
W2016_AppVol_Prov_JS	/DC/vm/W2016_AppVol_Prov_JS	
Wsrv_2016_JS_Mv1	/DC/vm/Wsrv_2016_JS_Mv1	
		nit Cancel

For instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

2. Click **Submit**.

7.2. Select a Snapshot of the Golden VM

	Select default image				
	Parent VM in vCenter: /DC/v	rm/RDSH-79-GOLD			^
	Snapshot Details				G
	Snapshot	Time Created	Description	Path	
1	IC Gold	05/31/2(9:32 AM		/IC Gold	^
	IC-apps	05/31/2(9:58 AM		/IC Gold/IC-apps	
					~
				2 Submit	Cancel
	1. Click Browse next to	Snapshot , and select the sna	pshot to use as the def	2 Submit ault image for creating the pool.	Cancel

Click Browse next to Shapshot, and select the shapshot to use as the default image for creating the pool.
 For instructions, see the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.
 Click Submit.

7.3. Select a VM Folder for the Instant Clones in the Farm

VM Folder Location	\times
Select the folder to store the VM	^
Show all folders 💿	G
▼ III DC	
CA_Win10	
DT-APP	
Horizon_WSO	
HZN-710	
HZN-AV	
HZN79-Desk	
Kiosk	
RDSH-79	
	Y
2 Submit	Cancel
1. Click Browse next to VM Folder Location , and select the folder to use.	

Note: The **RDSH** folder shown in the screenshot is just an example; you can select any available folder. The VM folder is described in Prerequisites for Creating an Instant-Clone Server Farm.

2. Click **Submit**.

7.4. Select the Resource Cluster

Select Cluster	×
Select a cluster on which to run the virtual machines created for this Farm Show all clusters T CusterVDI ClusterVDI ClusterVDI ClusterVDI3	G
2 Submit	Cancel

1. Click **Browse** next to **Cluster**, and select a vCenter Server resource cluster.

Note: The cluster selected in the screenshot is just an example; you can select any available cluster.

^{2.} Click **Submit**.

7.5. Select a Resource Pool

Resource Pool	×
Select a resource pool to use for this Farm.	G
2	Submit Cancel

- 1. Click Browse next to Resource Pool, and select a resource pool.
- 2. Note: The resource pool selected in the screenshot is just an example; you can select any available resource pool.
- 3. Click **Submit**.

7.6. Select a Datastore for the Clones

Select Instant Clone Datastores					×			
	he instant clone dat. selected.	astores to use for th	nis Automated Fari	m. Only datastores t	hat can be used by the	selected host or cluste	٢	^
Sho	w all datastores (inc	luding local datasto	ores) 🕐				C	
	Datastore	Capacity (GB)	Free (GB)	FS Type	Drive Type	Storage Overc		
	1	2,047.75	1,600.32	VIVIES6	NOU-22D		^	
1	ClusterVDI1 -DS1	2,047.75	1,598.52	VMFS6	Non-SSD			
	ClusterVDI1 -DS2	2,047.75	1,905.71	VMF56	Non-SSD	Unbounded		
	et 3600-02-IS O	1,023.75	812.61	VMF56	Non-SSD		~	
								¥
1 Click					2	Submit	ancel	

1. Click **Browse** next to **Instant-Clone Datastores**, and select a datastore.

- 2. **Note**: The datastore selected in the screenshot is just an example; you can select any available datastore or multiple datastores.
- 3. Click Submit.

7.7. Select a Network

Sele	ect Networks				×
Selecti	networks to use for th	nis automated farm.			
🖌 Use	e network from curre	nt parent VM image			
Select t	the networks to use f	or this instant clone farm. Only sta	atic binding port groups are s	upported by instant clones.	
Fotal P	Ports Selected: 0 To	tal Available Ports Selected: 0			
				▼ Filter	G
	Network	Port Binding	Total Ports	Available Ports	
	ESXi	static	32	24	^
	iSCSI1	static	32	24	
	iSCSI2	static	32	24	
	vMotion	static	32	24	
				Submit	Cancel

2. Click **Submit**.

7.8. Click Next on the Default Image Page

Quick-Start Tutorial for VMware Horizon 7

Add Farm - RDSH-Farm					
🕑 Туре	Default image				
	Parent VM in vCenter:				
VCenter Server	/DC/vm/RDSH-79-GOLD	Browse			
	Snapshot:				
Storage Optimization	/IC Gold/IC-apps	Browse			
Identification and	Virtual Machine Location				
Settings	VM Folder Location:				
	/DC/vm/CA_Win10	Browse			
Provisioning Settings	Resource Settings				
6 vCenter Settings	Cluster:				
	/DC/host/ClusterVDI1	Browse			
Ouest Customization	Resource pool:				
	/DC/host/ClusterVDI1/Resources	Browse			
8 Ready to Complete	Datastores:				
	1 selected	Browse			
	Network:				
	Parent VM network selected	Browse			
		Cancel Previous Next			

On the page that summarizes the default image settings you selected, click Next.

8. Select a Domain Administrator and an OU

Add Farm - RDSH-Farr	n	
📀 Туре	Domain:	;
vCenter Server	* AD Container:	
Storage Optimization	CN=Computers Browse Allow reuse of pre-existing computer accounts ③	
Identification and Settings	Use ClonePrep Power-off script name:	
Provisioning Settings	Power-off script parameters:	
vCenter Settings	Example: p1 p2 p3 Post-synchronization script name:	
7 Guest Customization	⊘	
8 Ready to Complete	Post-synchronization script parameters: Example: p1 p2 p3	
	Cancel Previous Next	

1. Select the instant-clone domain administrator, which you added in the exercise Add an Instant-Clone Domain Administrator.

2. Click ${\bf Browse}$ in the AD Container section, select the OU, and click ${\bf Submit}.$

3. Click Next.

9. Begin Deploying the Server Farm

Add Farm - RDSH-Farm				
📀 Туре	ID	RDSH-Farm	^	
vCenter Server	Description Access group	1		
Storage Optimization	Farm Settings			
Identification and Settings	Default display protocol	VMware Blast		
	Allow users to choose protocol	Yes		
Provisioning Settings	3D Renderer	Manage using vSphere Client		
vCenter Settings	Pre-launch session timeout (applications only)	10 minutes		
Guest Customization	Empty session timeout (applications only)	1 minute		
	When timeout occurs	Disconnect		
8 Ready to Complete	Log off disconnected sessions	Never		
	Allow HTML Access to desktops and applications on this farm	Enabled		
	Allow Session Collaboration	Enabled	Ŷ	
leave the check box at the top of	the window de-selected and c	Cancel Previous Sub lick Submit . Entitling users is a separate exercise.	mit	

For more information about the available settings in this wizard, see the product documentation topic Worksheet for Creating an Automated Instant-Clone Farm in Horizon Console.

You are returned to the Farms list, where you can verify that the newly created farm was added to the list.

10. Monitor the Farm Creation Process

VMware Horizon [,] 7		Po	od: Cluster-HOP	RIZONCA	Q. User Se	arch		± c	~
Monitor Dashboard Events Sessions	Add Edit D Access group All	elete Mor	e Commands	 Access g 	roup ~	T Filter		C	•
Users and Groups		Туре	Source	RDS Hosts	Desktop	Applicati	Sessions	Max num	
JMP Assignments JMP	RDSH-Farm	Automate d	vCenter (in stant clon e)	0	0	0	0	0	^
Applications									
Farms									
Machines									~

To access details about the newly added pool, click the farm name on the Farms page.

If you do not see the farm listed, click the Refresh icon above the table.

11. Check the Publish State

VMware Horizon-7	Pod: Cluster-HORIZONCA	Q. User Search
✓ Monitor	vCenter Server	^
Dashboard	VM folder:	Cluster:
	RDSH-Farm +++	ClusterVDI1 ***
Events	Resource pool:	
Sessions	Resources ····	
	Blackout Periods:	
Users and Groups	Not Set	
JMP Assignments JMP		
✓ Inventory	Transparent Page Sharing Scope: Virtual Machines	Guest Customization:
inventory	virtual Machines	ClonePrep
Desktops	Domain and account for guest customization:	
Applications		
Farms	Allow reuse of pre-existing computer accounts:	The AD container relative distinguished name:
Fallits	No	CN=Computers
Machines	Current Image:	
Persistent Disks	None	
> Settings	Pending Image:	Constant
	Parent VM: RDSH-79-GOLD •••	Snapshot: IC-apps •••
() () () () () () () () () ()		icopps m
	State:	
	Publishing 🛈	
	Operation:	Time:
	Initial Publish	Thu Aug 22 2 10:20:10 GMT-0700 (Pacific Daylight Time)
<		>

On the **Summary** tab, scroll down to the State area. The status changes from Publishing to Published.

12. Check the List of Hosts

VMware Horizon ⁻⁷				Pod: Cluste	r-HORIZONC/	A (User Search			.	1
Y Monitor	RDS	H-Farm									
Dashboard	Sum	mary RDS	S Hosts Ses	sions							
Events											
Sessions	Reco	over Rer	move From Farr	More C	ommands 🗠						
Users and Groups							٢	Filter		C	<u>+</u>
JMP Assignments JMP		DNS Na	Туре	Image	Pending	Task	Max nu	Agent V	Enabled	Status	
✓ Inventory		rdsh-10.b		RDSH-79-							^
Desktops		etavmwe uc.com	Windows S erver 2012	GOLD - I C-apps +++		None	Unlimited	7.9.0-138 86728	\checkmark	Available	
Applications											
Farms		rdsh-7.be tavmweu	Windows S erver 2012	RDSH-79- GOLD - I		None	Unlimited	7.9.0-138 86728	~	Available	
Machines		c.com		C-apps +++							
Persistent Disks		rdsh-3.be tavmweu c.com	Windows S erver 2012	RDSH-79- GOLD - I C-apps +++		None	Unlimited	7.9.0-138 86728	~	Available	
> Settings											
		rdsh-6.be tavmweu c.com	Windows S erver 2012	RDSH-79- GOLD – I C-apps +++		None	Unlimited	7.9.0-138 86728	~	Available	2
		rdsh-4.be tavmweu c.com	Windows S erver 2012	RDSH-79- GOLD – I C-apps +++		None	Unlimited	7.9.0-138 86728	~	Available	

After the status changes to Published, scroll up and click the **RDS Hosts** tab to verify that the 10 RDSH servers were created.

Deploy an RDSH-Published Desktop Pool

An RDSH desktop pool has different characteristics than an instant-clone, full-clone, or linked-clone automated desktop pool. An RDSH desktop pool is based on a session to an RDSH server. Now that you have created an RDSH server farm, you can select that farm when creating your desktop pool. For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating a desktop pool, your changes are lost.

Prerequisite for Deploying a Session-Based Desktop Pool

To perform this exercise, you need to have completed the exercise Create an Instant-Clone RDSH Server Farm. Although it is possible to actually create the RDSH server farm as part of using the Add Desktop Pool wizard, the steps in this exercise direct you to select an existing server farm.

1. Start the Add Pool Wizard in the Horizon Console

VMware Horizon ⁻⁷		Pod: Cluster-HORIZONCA	Q User Search	About 🔮	≜ ⊂ ~
 Monitor Users and Groups JMP Assignments JMP Inventory 	Add Edit Delete	Entitlements v Status	 ✓ Access Group 	View Unentitled V	C 🛓
Applications	D ID	Displa Type	Source User A	vCente Entitled Applic	Enabled App
Applications					~

 Log in to the Horizon Console, and select **Inventory** > **Desktops**. The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

2. Click Add.

2. Select the RDS Desktop Pool Type

Add Pool	
 Type Desktop Pool Identification Desktop Pool Settings Select RDS Farms Ready to Complete 	 Automated desktop pool Manual desktop pool RDS desktop pool
	Cancel Previous Next

1. Select **RDS Desktop Pool**.

2. Click Next.

3. Complete the Desktop Pool Identification Page

Add Pool - RDSH-de	sktops
🕏 Type	* ID: RDSH-desktops
2 Desktop Pool Identification 2	Display name: RDSH Desktop
3 Desktop Pool Settings	Description:
4 Select RDS Farms	
6 Ready to Complete	
	Cancel Previous Next

- 1. Add a pool ID; for example, RDSH-desktops.
- 2. (Optional) Add a display name, such as RDSH Desktop, which users will see when they log in using Horizon Client or the HTML Access web client.
 - If you do not provide a display name, the pool ID is used for the display name.
- 3. Click Next.
- 4. Click Next on the Desktop Pool Settings Page

Quick-Start Tutorial for VMware Horizon 7

	sktops	
Add Pool - RDSH-de	skiops	
🕑 Туре	State: Enabled	~
Desktop Pool Identification	Connection Server restrictions: None Browse Category Folder:	
3 Desktop Pool Settings	None Browse	
4 Select RDS Farms	Client Restrictions: Enabled	
5 Ready to Complete		
	ottings. For more information about the settings, see	Cancel Previous Next

Click **Next** to accept the default settings. For more information about the settings, see the product documentation topic **Desktop** Pool Settings for RDS Desktop Pools.

5. Select the RDS Farm You Created

Д	Add Pool - RDSH-desktops							
	Type Desktop Pool Identification	Create a new	r RDS farm S farm for this desk	top pool	T Filter		3	^
		Farm ID	Description	RDS Hosts	Max number	Status		
	Desktop Pool Settings	RDSH-Farm		10	Unlimited	No problem de tected		
4	Select RDS Farms							
6	Ready to Complete							
						•		~
					Cancel	3 Previous	Next	

- 1. Click Select an RDS farm for this desktop pool.
- 2. Select the farm name in the list. This is the farm that you created in the exercise Create an Instant-Clone RDSH Server Farm.
- 3. Click Next.

Note: As an alternative to creating the RDSH server farm before you complete this Add Desktop Pool wizard, you can select **Create a new RDS farm**. If you use this option, additional pages are added to this wizard, and you are prompted to specify farm settings and select the RDSH server or servers to add to the farm.

6. Begin Deploying the Desktop Pool

Ado	Add Pool - RDSH-desktops					
رت 📀	ype	Entitle users after this wizard finishes Type:	RDS desktop pool			*
-	Desktop Pool dentification	Unique ID: Description:	RDSH-desktops			
o o	esktop Pool Settings					
🥑 se	elect RDS Farms	Display name:	RDSH Desktop			
		Desktop pool state	Enabled			
5 R	leady to Complete	Session Types:	Desktop			
		Client Restrictions:	No			
		Connection Server restrictions:	None			~
				Cancel Previous	Submit	

Leave the check box at the top of the window de-selected, and click **Submit**. Entitling users is a separate exercise.

7. Monitor the Pool Creation Process

VMware Horizon [.] 7		Pod: Cluster-HORIZONC/	A Q User Se	arch	
 Monitor Users and Groups JMP Assignments JMP Inventory 	Add Edit Delete Access group All	Entitlements Y Status	 Access Group 	View Unentitle	d ∨
Desktops	D ID	Display n Type	Source User	vCent Entitl	App Enabled
Applications Farms Machines	RDSH-desktops	RDSH Des RDS de sktop p ool	vCente r (insta nt clon e)	vc-vdi. betav 0 mweu c.com	N/A 🗸
Persistent Disks Settings	Win10-instant-clone	Autom Windows 1 ated d 0 Desktop esktop pool	vCente Floatin r (insta g assig nt clon nment e)	vc-vdi. betav 0 mweu c.com	N/A 🗸

To access details about the newly added pool, click the pool name on the Desktop Pools page.

If you do not see the pool listed, click the Refresh icon above the table.

8. Review Pool Details

Users and Groups JMP Assignments JMP Astate JMP Astate <	VMware Horizon ⁻⁷	Pod: Cluster-HC	ORIZONCA Q User Search	1 v	/
JMP Assignments Inventory Desktops Applications Parms Unique ID: RDSH-desktops Machines Persistent Dicks Settings Access group: Client Restrictions: No O Number of entitled users and groups: 0	Monitor				^
▶ No users or groups are entitled to this pool. Click Entitlements to add users to this pool. ▶ Applications Farms Unique ID: Machines RDSH-desktops Persistent Disks Machine source: vcenter (instant clone) RDSH Desktop Settings Access group: / Enabled Client Restrictions: Sessions: No 0 Number of entitled users and groups: 0		Edit Delete Desktop Pool Entitlements	Status ~	C	
Applications General Farms Unique ID: Type: Machines RDSH-desktops RDS desktop pool Persistent Disks Machine source: Display name: Vcenter (instant clone) RDSH Desktop Settings Access group: State: / Client Restrictions: Sessions: No 0		🔺 No users or groups are entitled to this pool. Clic	k Entitlements to add users to this pool.		
Farms Unique ID: Type: Machines RDSH-desktops RDS desktop pool Machine source: Display name: vCenter (instant clone) RDSH Desktop Settings Access group: State: / Enabled Client Restrictions: Sessions: No 0 Number of entitled users and groups: 0	Desktops				
Machines RDSH-desktops RDS desktop pool Persistent Disks Machine source: Display name: Settings Access group: RDSH Desktop / Access group: State: / Enabled No 0 Number of entitled users and groups: 0	Applications	General			
Machines Machine source: Display name: Persistent Disks Machine source: Display name: Settings Access group: RDSH Desktop Client Restrictions: Sessions: Display name: No 0 Output Number of entitled users and groups: O Output	Farms	Unique ID:	Туре:		
Persistent Disks vCenter (instant clone) RDSH Desktop Settings Access group: / State: Enabled Client Restrictions: No Sessions: 0 Number of entitled users and groups: 0 0	Machines	RDSH-desktops	RDS desktop pool		
/ Enabled Client Restrictions: Sessions: No 0 Number of entitled users and groups: 0	Persistent Disks				
Client Restrictions: Sessions: No 0 Number of entitled users and groups: 0	Settings	Access group:	State:		
No 0 Number of entitled users and groups: 0		/	Enabled		
Number of entitled users and groups: 0		Client Restrictions:	Sessions:		
0		No	0		
· · · · · · · · · · · · · · · · · · ·		Number of entitled users and groups:			
		0			
	<				×

Review the pool information. In addition to the information shown in the screenshot, if you scroll down, you see information about the server farm used for this pool.

Publish Applications Hosted on RDSH Servers

The Published Applications feature supports a wealth of remote-experience features, which include client-drive redirection, access to locally connected USB devices, file-type association, Windows media redirection, content redirection, printer redirection, location-based printing, 3D rendering, smart card authentication, and more.

After applications are published, end users launch Horizon Client, or the HTML Access web client, to access a catalog of published applications. Selecting an application from the catalog opens a window for that application on the local client device, and the application looks and behaves as if it were locally installed.

For example, on a Windows client computer, an item for the application appears in the taskbar and looks identical to the way it would look if it were installed on the local Windows computer. Users can also create shortcuts for published applications, and the shortcuts appear on the client desktop, just like shortcuts for locally installed applications.

To publish applications, administrators create an application pool. Horizon 7 automatically enumerates the installed applications on the RDSH servers. Administrators can select which of the applications to deploy and entitle users to.

Note: With Horizon 7.9, it is also possible to publish applications using a Windows 10 desktop pool rather than a farm of RDSH servers. For more information, see the What's New video Horizon 7.9: Desktop Application Publishing. For this exercise, we use RDSH.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Important: If your session in the Horizon Console is idle for more than a few minutes, you might be automatically logged out, and if you were in the middle of creating an application pool, your changes are lost.

Prerequisites for Publishing Applications

- **RDSH server farm** You need to have completed the exercise Create an Instant-Clone RDSH Server Farm. Although it is possible to actually create the RDSH server farm as part of using the Add Desktop Pool wizard, the steps in this exercise direct you to select an existing server farm.
- Applications The applications you provide to end users can be either installed directly on the RDSH server, or

dynamically attached, as App Volumes AppStacks. Before you begin this exercise, install any applications that you want to have in the base image, available for all users.

Note: For Windows Server 2014 and earlier, to install applications directly on an RDSH server, place the host into RD-Install mode, install the desired applications, and place the host back into RD-Execute mode. For more information, see the Microsoft TechNet article Learn How To Install Applications on an RD Session Host Server. For Windows Server 2016 and later, see the Microsoft documentation. If you plan to use AppStacks, be sure to install the App Volumes Agent, as described in the guide Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop.

1. Start the Add Pool Wizard in the Horizon Console

VMware Horizon-7	Pod: Cluster-HORIZONCA Q User Search
✓ Monitor	Application Pools
Dashboard 2	Add Edit Delete Entitlements Application Icon
Sessions	Add Manually Add from Installed Applications 🙀
Users and Groups	ID Display Pool or Version Publisher App Sho Pre-Lau Multi-Se Status
JMP Assignments JMP	No records available
Desktops	
Applications	
Farms	
Machines	
Persistent Disks	
> Settings	
<	

1. Log in to the Horizon Console, and select **Inventory** > **Applications**.

The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

- 2. Click Add.
- 3. Select Add from Installed Applications.

Note: For this exercise, you will use installed applications. For information about adding an application pool manually, see the product documentation topic Worksheet for Creating an Application Pool Manually.

2. Select Applications

Add Application Pool			
•	O Desktop Pool O RDS Farm		^
Select Applications	RDSH-Farm		~
2 Edit Applications	Select installed applications	▼ Filter	G
	Name Name	Path	
2	Calculator	C:\ProgramData\Microsoft\Windows\St art Menu\Programs\Accessories\Calcul ator.lnk	
3	Paint	C:\ProgramData\Microsoft\Windows\St art Menu\Programs\Accessories\Paint.l nk	
	Remote Desktop Connection	C:\ProgramData\Microsoft\Windows\St art Menu\Programs\Accessories\Remot e Desktop Connection.Ink	
	Pre-Launch		~
	Connection Server restrictions:		
	Category Folder: None Browse		
	Client Restrictions		
4	Entitle users after this wizard finishes		~
		Cancel Previous	Next

- 1. Select **RDS Farm**, and select the automated server farm you created.
- **Note**: With Horizon 7.9, it is also possible to publish applications using a Windows 10 desktop pool rather than a farm of RDSH servers. For more information, see the What's New video Horizon 7.9: Desktop Application Publishing. For this exercise, we use RDSH.
- Click the check box next to an application.
 Note: The list of applications includes both natively installed apps and App Volumes AppStacks that you have attached to the servers, if you are using AppStacks.
- 3. Click the check box next to another application. You can create multiple application pools with only one trip through the wizard.
- 4. De-select the check box **Entitle users after adding the pool**. You will entitle users in a later exercise.
- 5. For the other settings, use the defaults, and click $\ensuremath{\textbf{Next}}.$

For information about the other settings on this page, including Pre-launch, category folder, and restrictions, see the product documentation topic Worksheet for Creating an Application Pool Manually.

3. Edit the Display Name and Begin Pool Deployment

Add Application Poo	I		
Select Applications	Edit ID and Display	Name of selected application	ns lath
2 Edit Applications	Calculator	RDSH-Calculator	C:\ProgramData\Microsoft\Windows\Start Menu\P pgrams\Accessories\Calculator.Ink
	Paint	RDSH-Paint	C:\ProgramData\Microsoft\Windows\Start Menu\P
			Cancel Previous Submit

- 1. Add RDSH- to the beginning of the display name. This way, if you later open the published app on a Windows computer, you will be able to distinguish between the locally installed app and the RDSH-published app.
- 2. Click **Submit**.

The wizard closes and the application pools are added to the list.

VMware Horizon ⁻⁷		Pod	l: Cluster-HORIZONC	A Q User	Search		± -	~
Y Monitor								
Dashboard	App	lication Po	ools					
Events	Add	✓ Edit	Delete Entitle	ments v Appl	lication lcon	~		
Sessions			_					
Users and Groups	Access	group All ~				TF	ilter	
JMP Assignments JMP		ID	Display name	Pool or Farm	Version	Publisher	App Sh	Pre-Lau
✓ Inventory					6.3.9600.	Minnach Con		
Desktops		<u>Calculator</u>	RDSH-Calculator	RDSH-Farm	6.3.9600. 16384	Microsoft Cor poration		
Applications		Paint	RDSH-Paint	RDSH-Farm	6.3.9600.	Microsoft Cor		
Farms		Pant	RUSHPAIR	NUSIFFEITI	16384	poration		
Machines								
Persistent Disks								
<								>

Perform Maintenance on a Server Farm

When you use automated instant-clone RDSH server farms, you can rapidly change the size of the farm, refresh the servers back to their original state and disk size, or update the servers to use a new golden image. Performing maintenance on an instant-clone farm means deleting the VMs in the farm and either recreating them from the current golden image or creating VMs from a new golden image, or snapshot.

- Create a recurring maintenance schedule to restore the operating system disk of each VM in the farm to its original state and size, reducing storage costs. The VM is deleted and recreated from the currently selected golden image.
- Schedule immediate maintenance to change the golden image used by the VMs in the farm, such as to apply an urgent security patch.

You can use both types of schedules at the same time, and if you specified a minimum number of provisioned servers to be available during maintenance operations, your end users might never have their work interrupted.

Prerequisites for Performing This Exercise

1. Click the Farm Name

This exercise involves making changes to instant-clone RDSH server farms. Therefore, you must have completed the exercise Create an Instant-Clone RDSH Server Farm before you begin this exercise.

VMware Horizon 7 Pod: Cluster-HORIZONCA Q User Search 2 Farms > Monitor Users and Groups Add Edit Delete More Commands Access group JMP Assignments T Filter Access group All ID Туре Source RDS Ho ... Desktop ... Applicat... Sessions Max nu. Applications vCenter (in RDSH Des 1 2 **RDSH-Far** Automated 2 0 Unlimited 10 stant clone) ktop Machines > Settings 1. Log in to the Horizon Console, and select **Inventory** > **Farms**.

The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

2. Click the farm name; for this example the farm name is **RDSH-Farm**.

2. Select to Schedule Maintenance

VMware Horizon 7	Pod: Cluster-HORIZONCA Q User Search
 Monitor Users and Groups JMP Assignments JMP Inventory Desktops Applications Farms Machines Persistent Disks Settings 	Summary RDS Hosts RDS Pools Sessions Edit Maintain Genere Schedule Cancel Type: RDSH-Farr Automated Farm Description: Access group: Itility

On the **Summary** tab, select **Schedule** from the **Maintain** drop-down list.

3. Set a Weekly Maintenance Schedule

Schedule Recurring I	Maintenance
1 Maintenance	Maintenance Mode
 2 Image 3 Schedule Maintenance Setting 	Schedule Image: Construction of the second seco
4 Ready to Complete	Recurring Maintenance Configuration 2 Maintenance Period: Daily Weekly Monthly Day of the Week: Sunday ✓ Repeat Interval: Every 1 week(s)
	3 Next Cancel

1. For Schedule, select Recurring.

Note: If, instead, you select Immediate from the drop-down list, you are prompted to specify the task start time.

2. For Maintenance Period, select Weekly.

3. Click Next.

4. Click Next to Use the Current Snapshot

Schedule Recurring I	Maintenance							
 Maintenance Image Schedule Maintenance Setting Ready to Complete 	Image The snapshot of the current parent VM will usually be used for maintenance. If required, select a different VM or snapshot to use for maintenance. The machines created in this Automated Farm will use the information in the snapshot image as their baseline system configuration. Image Use current parent VM image Parent VM in vCenter: /DC/vm/RDSH-79-GOLD							
	Snapshot Details				G			
	Snapshot	Time Created	Description	Path				
	IC Gold	05/31/2019, 9:32 A M		/IC Gold	^ ,			
				Back Next	Cancel			

On the Image page, click **Next**. (If the **Next** button is dimmed, de-select **Use current parent VM image** and then select the check box again.)

The default is to use the current golden image. To select a different golden VM and snapshot, you can de-select the check box, browse to a new golden VM, and select one of its snapshots.

Note: Setting this schedule so that it runs weekly means that on a weekly basis, the servers are refreshed back to their original state and disk size using the golden VM and snapshot that you specify.

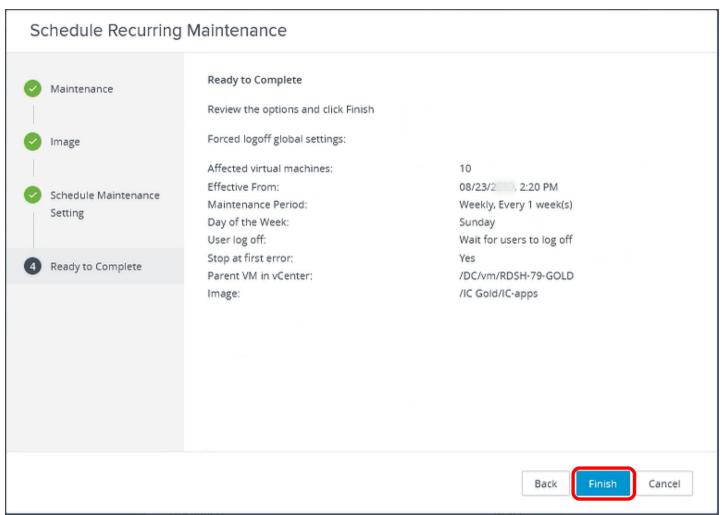
5. Click Next to Start the Task After Users Log Off

S	chedule Recurring I	Maintenance						
		Schedule Maintenance Setting	^					
Ø	Maintenance	Specify user log off behavior at the time of maintenance						
		O Wait for users to log off						
	Image	Wait for connected users to disconnect before the task starts. The task starts immediately on machines without active sessions.						
8	Schedule Maintenance	Force users to log off						
	Setting	Users will be forced to log off when the system is ready to operate on their virtual machines.						
		Before being forcibly logged off, users may have a grace period in which to save their work (Global Settings).						
4	Ready to Complete	Stop at first error						
		The warning and grace period can be edited in global settings:						
		Display warning before forced logoff:						
		Log off time:						
		5 🖨 minutes						
		Log off message:						
		Your desktop is scheduled for an important update	~					
		Back Next Cancel]					

Click Next.

The default is **Wait for users to log off**. If, instead, you select to force users to log off, you can give users a warning and a grace period of 5 minutes, by default. To edit this setting, after you finish creating the schedule, navigate to **Settings** > **Global Settings**, and click **Edit** in the General settings section.

6. Click Finish to Complete the Maintenance Schedule



Click Finish. You are returned to the Summary tab for the farm.

The schedule you set appears in the Farm Maintenance section.

VMware Horizon [•] 7	Pod: Cluster-HORIZONCA Q User	Search 🔺 🗸
> Monitor Users and Groups	VM naming pattern: RDSH-	Max sessions per RDS Host: Unlimited
JMP Assignments	Farm Maintenance	
∼ Inventory	Next Maintenance Time: Sun Aug 25 11:19:00 GMT-0700 (Pacific Daylight Time)	Immediate Maintenance Scheduled: No
Desktops	Recurring Maintenance Configuration:-	
Applications	Recurring Period:	Day of the Week:
Farms	Weekiy, Every 1 week(s)	Sunday
Machines	vCenter Server	
Persistent Disks		
> Settings	VM folder: RDSH-Farm ***	Cluster: ClusterVDI1 ···

If, in addition to this recurring schedule, you find you need to schedule an immediate push of a new golden image, you can repeat this process, selecting **Maintenance** > **Immediate** rather than **Recurring**. The farm would then have both a recurring and an immediate maintenance schedule.

In the following steps, we will explore other maintenance tasks.

7. Select to Edit the Farm

VMware Horizon [®] 7	Pod: Cluster-HORIZONCA	iearch 🖌
> Monitor Users and Groups	RDSH-Farm Summary RDS Hosts RDS Pools Sessions	
JMP Assignments JMP	Edit Maintain 🗸 General	
Applications Farms	ID: RDSH-Farm	Type: Automated Farm
Machines Persistent Disks	Description:	Access group: /
> Settings		

Scroll back up to the top of the page, and click Edit.

8. Change the Max Number of Machines to 4

Edit Farm - RDSH-Fai	m			\times	
					٨
Farm Settings	Provisioning Setti	vCenter Settings	Guest Customizatio	_	
Basic					
 Enable provisioning Stop provisioning on error 					
Virtual Machine Naming * Naming Pattern:					
RDSH-					
Farm Sizing	2				
* Max number of machines:					
4					
			Cancel	ОК	¥
1 Click the Provisioning Set	tings tob				_

1. Click the **Provisioning Settings** tab.

2. In the Farm Sizing section, set the **Max number of machines** to 4.

3. Click **OK**.

You are returned to the Farms **Summary** tab.

9. Monitor Changing the Size of the Farm

VMware Horizon 7			Po	d: Cluster-HC	RIZONCA	Q. Use	er Search			· · · · · · · · · · · · · · · · · · ·
> Monitor	RDS	H-Farm								
Users and Groups	Sum	mary RDS	5 Hosts RI	S Pools S	Sessions					
JMP Assignments JMP	Reco	wer Per	nove From Fa	m More	Commands	~				
 Inventory 	Nect	Nei Kei	nove From Pa	More	commands			_		
Desktops								T Filter		C 1
Applications		DNS Na	Туре	Image	Pending	Task	Max nu	Agent V	Enabled	Status
Farms					-					
Machines		rdsh-10.b etavmwe	Windows Server 20	RDSH-79- GOLD - I	RDSH-79- GOLD – I	None	Unlimited		~	Deleting
Persistent Disks		uc.com	12	C-apps	C-apps +++					
> Settings		rdsh-7.be tavmweu c.com	Windows Server 20 12	RDSH-79- GOLD – I C-apps +++	RDSH-79- GOLD – I C-apps +++	None	Unlimited	7.9.0-138 86728	~	Available
		rdsh-3.be tavmweu c.com	Windows Server 20 12	RDSH-79- GOLD – I C-apps +	RDSH-79- GOLD – I C-apps +++	None	Unlimited		~	Deleting
,		rdsh-6 be	Windows	RDSH-79-	RDSH-79-					

Click the **RDS Hosts** tab. Note that the status for some of the servers changes to Deleting. Some servers are deleted to reduce the size of the farm to 4 machines.

Click the **Refresh** icon, if necessary, to update the status.

Tip: If you change the maximum number of machines to a larger number, the new RDSH servers will typically become available within a minute. This is because the VM snapshot is already published, and therefore only the instant-clone provisioning phase is required.

Provisioning Users and Accessing Virtual Desktops

Introduction to User Provisioning

The first part of this chapter walks you through the process of entitling end users to a desktop or application pool. The second part of this chapter shows you how to connect to a virtual desktop or published application as an end user would, from a variety of client devices.

User Entitlement

You can entitle users to an application pool or desktop pool when you create the pool. At the end of the Add Application Pool wizard or Add Desktop Pool wizard, you can select the **Entitle users after this wizard finishes** check box.

You can also create user entitlements after the pool is created. If you are entitling users to application pools, you can select multiple application pools, and entitle users to all the selected pools. For desktop pools, you must select one pool at a time.

It is also possible to set up the system so that end users can access RDSH application pools without having to authenticate at all.

Note: For this evaluation, you create local entitlements, which entitle users to desktops within one Horizon 7 pod. A pod is a group of interconnected Connection Servers running in the same LAN segment that broker desktops or published applications. For information about using the Cloud Pod Architecture feature to create global entitlements, which entitle users to multiple desktops across multiple pods in a pod federation, see the guide Administering Cloud Pod Architecture in Horizon 7.

Important: Alternatively, for instant-clone desktop pools, you can also entitle users by using the JMP Integrated Workflow to define a JMP assignment. JMP assignments include information about the App Volumes AppStacks, instant-clone desktops pools, and Dynamic Environment Manager settings for specific groups of users. For instructions, see the Quick-Start Tutorial for VMware Horizon JMP Integrated Workflow.

Launching Remote Desktops and Applications from Client Devices

After you have finished deploying virtual desktops or published applications and entitling users, you are ready to explore end-user connection options. End users can connect to desktops and applications using different Horizon Clients, including desktop and mobile clients. VMware provides native Horizon Clients for iOS, Android, Chrome, macOS, Windows, Linux, and Windows 10 UWP.

Alternatively, you can use the HTML Access web client by entering the URL of your Connection Server, using the following format:

https://<FQDN or IP address>

On the VMware Horizon web portal page that appears, you can click either the icon that takes you to the Horizon Clients download page or the icon for logging in using the HTML Access web client.

Entitle End Users to Application Pools or Desktop Pools

Entitling users means specifying which users and groups are allowed to access the desktop or application. You can entitle users to an application pool or desktop pool when you create the pool. At the end of the Add Application Pool wizard or Add Desktop Pool wizard, you can select the **Entitle users after this wizard finishes** check box.

You can also create user entitlements after the pool is created, which is what we do in this exercise.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console.

Prerequisites for Entitling Users

Before you can entitle users, you must create a desktop or application pool. Exercises for performing these tasks are included in the chapters Creating Single-User Desktop Pools and Creating RDSH-Published Desktops and Applications.

1. Start the Add Entitlements Wizard in the Horizon Console

VMware Horizon 7		Pod: Clust	er-HORIZO	NCA	Q User	Search			±	~
✓ Monitor	Desktop Pools									
Dashboard	Add Edit Delete	Entitlemen	ts v St	atus v	Access Gr	oup ~	View Uner	titled v		
Events Sessions	Access group AII ~	Add Entitle	ements by			T	Filter		C	±
Users and Groups		Displ	Туре	Source	User	vCent	Entitl	Appli	Enabl	Ap
JMP Assignments JMP V Inventory Desktops	RDSH-desktops	RDSH Deskto P	RDS de sktop p ool	vCente r (insta nt clon e)	Floatin g assig nment	vc-vdi. betav mweu c.com	0	N/A	~	^
Applications Farms 2 Machines	Win10-instant-clone	Windo ws 10 Deskto P	Autom ated d esktop pool	vCente r (insta nt clon e)	Floatin g assig nment	vc-vdi. betav mweu c.com	0	N/A	~	
Persistent Disks	win-10-dedicated	Dedica ted Wi ndows 10 VM	Autom ated d esktop pool	vCente r	Dedica ted ass ignme nt	vc-vdi. betav mweu c.com	0	N/A	~	,

1. Log in to the Horizon Console, and select **Inventory** > **Desktops** or, for application pools, select **Inventory** > **Applications**.

The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

- Select the check box next to the name of the pool you want to entitle users to.
 Important: If you are entitling users to application pools, you can select multiple pools, and entitle users to all the selected
- pools. For desktop pools, you must select one pool at a time.
- 3. Select Entitlements > Add Entitlements.

2. Click Add to Add New Users

Add Entitlements			×
Add new users and groups who ca	in use the selected pool(s).		
Name	Domains	Email	
No records available			*
			Cancel OK

Click **Add**.

3. Search for Users and Groups

Fi	nd User or Gro	up					×
Тур	e:	v U:	sers 🔽 Groups				
Dor	main:	Entir	e Directory				~
Nai	me/User name:	1 Start	ts with	~	d		
Des	scription:	Cont	tains	~			
C	ind 2						
3	Name	User Name	Email	Descri		In Folder	
2	Domain Guests	Domain Guests/betavm		All dor	nain guests	-	Ĵ
×	Domain Users	Domain Users/betavmw.	**	All dor	All domain users		
V	DefaultAccount	DefaultAccount. (DefaultAccount			account ged by the		
							ок

- Use the Name/User name drop-down list and text box to search for users. For this example, we selected Starts with and entered a D so that all user and group names that begin with D will be returned. You can narrow your query using the drop-down menus to add search terms and modifiers. If you leave the text boxes empty, all users and groups are returned.
- 2. Click Find.
- 3. Scroll through the list and select the check boxes next to the names of the users and groups to entitle.
- 4. Click **OK**.

4. Click OK to Add Entitlements

Quick-Start Tutorial for VMware Horizon 7

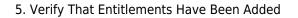
Add	Entitlements			×	5
Add ne	ew users and groups who can use th	e selected pool(s).			
Add	Remove				
-					
•	Name	Domains	Email		
	Domain Guests			A	
	Domain Users				
	DefaultAccount				
				_	
				Cancel OK	k

Click OK.

.

Note: The **Add** button in this dialog box is for adding additional users to the list. The check boxes are for selecting a user or users you want to remove.

You are returned to the Application Pools list or the Desktop Pools list.



VMware Horizon ⁻⁷	Pod: Cluster-HORIZONCA Q User Search	± · · · ·
 Monitor Dashboard Events Sessions Users and Groups JMP Assignments 	Win10-instant-clone Summary Machines Machines (InstantC Sessions Entitlements Events Tasks Policy Overrides Add Entitlements Remove Entitlements	Policies C 🛓
✓ Inventory Desktops	Name Sessions	
Applications	DefaultAccount@totoumust.com (DefaultAccount)	^
Farms	Domain Admins/beta-mwebe.com	
Machines Persistent Disks	Domain Users/hersumuratc.com	
> Settings +	Domain Guests/betaviniece.com	

Click the name of the desktop or application pool in the list of pools, and select the **Entitlements** tab.

Note: You can also use the buttons on the Entitlements tab to add and remove user entitlements for a specific pool.

VMWare[°] Confidential | © VMware, Inc.

Configure Unauthenticated Access to Published Applications

In this exercise, you set up the system so that end users can access RDSH-published application pools without having to authenticate first. Use this feature to provide unauthenticated access if your users require access to a seamless application that has its own security and user management, or for kiosk use cases.

For this exercise, you will use the newest Horizon 7 management interface, the Horizon Console, to add and entitle an unauthenticated use and to configure unauthenticated access for a specific Connection Server.

Prerequisites for Configuring Unauthenticated Access

To perform this exercise, you need to have created a user account, not a user group, in Active Directory that will be used for unauthenticated access. For this example, we created a user account named Unauthenticated User.

Be sure to create a user account that will not be used for any other purpose. If you select a user with desktop entitlements and make the user an unauthenticated access user, the user will not have access to the entitled desktops.

1. Start the Unauthenticated Access User Wizard

오 VMware Horizon 7		Pod: Cluster-HO		er Search			~	
 Monitor Dashboard Events Sessions 	Users and Gro		ticated Ac					
Users and Groups				T	Filter	G	<u>+</u>	
JMP Assignments JMP	User Alias Us	ser Name First Name	Last Name	Domains	Application E	Sessions		
> Inventory > Settings	No records available						^	
<								>
1 Log in to the Horizon C	onsola and select	Ilsers and Group	F					

 Log in to the Horizon Console, and select Users and Groups. The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin

2. Select the **Unauthenticated Access** tab.

3. Click Add.

2. Select the User Account to Designate for Unauthenticated Access

Add unauthenticated	l access user						
1 User	Domain:		Entire Directory				~
	Name/User name:		Starts with	~	un		
2 Settings	Description:	0	Contains	~			
	Find						
	Name	User Name	Email	Descript	tion	In Folder	
	Unauthentica User	unauthen@b (Unauthentic User)					
					-		
							-
			C	ancel Pre	4 vious	Next	Submit
1. Use the Name/User na	me drop-down list a	nd text box	to search for use	ers. For this e	example	e, we select	ed Starts

 Use the Name/User name drop-down list and text box to search for users. For this example, we selected Starts with and entered a Un so that all user and group names that begin with Un will be returned. You can narrow your query using the drop-down menus to add search terms and modifiers. If you leave the text boxes empty, all users and groups are returned.

- 2. Click Find.
- 3. Scroll through the list and select the user account.
- 4. Click Next.

3. Enter a User Alias

Add unauthenticated access user	
User User Alias:	
2 Settings User Name: 	
Comments:	
1. Enter an alias for the account. For this example, because the us	Cancel Previous Next Submit

 Enter an alias for the account. For this example, because the user name was Unauthenticated User, which has a space between the words, we added a hyphen to create the alias. Spaces are not allowed.

2. Click Submit.

The user account is added to the list of users who have unauthenticated access.

✓ Monitor Dashboard	Users and G	roups emote Access Unauthentic	ated Ac					
Events Sessions Users and Groups	Add Delete				T Filter		G	ŧ
JMP Assignments JMP	User Alias	User Name	First Name	Last	Domains	Application	Sessions	5
> Settings	Unauthenticated- User	unauthen@b om (Unauthenticated User)	Unauthenticated	User	c. com	0	0	^
								~

4. Edit the Connection Server Configuration

VMware Horizon ⁻⁷		Pod: Clust	ter-HORIZONCA	Q User Search		. ~	
 Monitor Dashboard Events 	Servers vCenter Servers	Gateways Conr	ection Servers				
Sessions Users and Groups	Enable Disable	e Edit B	ackup Now		▼ Filter	C	ŧ
JMP Assignments JMP > Inventory	Connection Serv	Version	PCoIP Secure G	State	Settings	Last Backup	
 Settings Servers 	HORIZONCA	7.9.0-13956742	Installed	Enabled	nection, Smart ca rd authentication: Optional, Automa	✓ 09/25/2 00 PM	
Instant Clone Domain Accounts					ис васкор		>

- 1. Navigate to **Settings** > **Servers**.
- 2. Select the **Connection Servers** tab.
- 3. Select the Connection Server in the list.
- 4. Click **Edit**.

5. Configure the Authentication Settings for Unauthenticated Access

Quick-Start Tutorial for VMware Horizon 7

Edit Connection Server Settings	×
Horizon Authentication Changes to authentication settings will take effect on next user login Smart card authentication for users:	^
Optional ~	
Disconnect user sessions on smart card removal	
Allow smart card user name hints	
Unauthenticated Access:	
Default unauthenticated access user:	
2 Select Y	
Select Unauthenticated-User	
Login Deceleration Level: ⑦	
Medium ~	
Block Non-Compliant Clients ③	
	Cancel OK

 Select the Authentication tab, scroll down to the Horizon Authentication section, and set Unauthenticated Access to Enabled.

- 2. In the **Default unauthenticated access user** drop-down list, select the user account you added; for this example, Unauthenticated-User.
- 3. Click **OK**.

6. Start the Add Entitlement Wizard in Horizon Console

VMware Horizon 7			Pod: Cluste	r-HORIZONCA	Q Use	er Search			1	/
 Monitor Dashboard Events Sessions 	Applica Add ~		Delete Entitler	nents V Ap ntitlements k ve Entitlements	plication Icon	×	T Filter		G	Ŧ
Users and Groups	D ID		Display name	Pool or Far	Version	Publisher	App Sho	Pre-Lau	Multi-Se	
JMP Assignments JMP		lculator	RDSH-Calculator	RDSH-Farm	6.3.9600. 16384	Microsoft Corporati on			Disabled	^
Applications Farms		int	RDSH-Paint	RDSH-Farm	6.3.9600. 16384	Microsoft Corporati on			Disabled	
Machines Y										~

- 1. Log in to the Horizon Console, and select **Inventory** > **Applications**.
- 2. Select the check box next to the name of the pool you want to entitle users to. You can select multiple pools.
- 3. Select Entitlements > Add Entitlements.

7. Click Add to Add the New User

Add Entitlements			×
Add new users and groups who ca	an use the selected pool(s).		
Name	Domains	Email	
No records available			*
			-
		C	Cancel OK

Click **Add**.

8. Select the User Account for Entitling Unauthenticated Access to This Pool

Find	User or Grou	ıp					\times
Type:			Jsers 🗌 Grou	1 Ips Unauth	nenticated u	sers	
Domai	in:	Ent	ire Directory				~
Name	/User name:	2 Cor	ntains	Ŭ	un		
Descri	ption:	Cor	ntains	v			
Find	3						
4	Name	User Name	Email	Des	cription	In Folder	
V	Unauthenticated User	unauthen@b (Unauthenticat User)				t	^
							Ŧ
						5 Cancel	ок

- 1. Select the **Unauthenticated users** check box.
- Use the Name/User name drop-down list and text box to search for the user. For this example, we selected Starts with and entered a Un so that all user and group names that contains Un will be returned.
 You can narrow your query using the drop-down menus to add search terms and modifiers. If you leave the text boxes empty, all users and groups are returned.
- 3. Click Find.
- 4. Scroll through the list and select the check box next to the name of the user entitle.
- 5. Click **OK**.

9. Click OK to Add the Entitlement

Quick-Start Tutorial for VMware Horizon 7

Add	Entitlements			×
Add ne Add	ew users and groups who can use th Remove	ne selected pool(s).		
	Name	Domains	Email	
	Unauthenticated User	com		•
				Cancel OK

Click **OK**.

10. Verify That Entitlement Has Been Added

VMware Horizon [®] 7	Pod: Cluster-HORIZONCA Q User Search	* (· · ·
Y Monitor		
Dashboard	Paint	
Events	Summary Entitlements Events	
Sessions		
Users and Groups	Add Entitlements Remove Entitlements	
JMP Assignments JMP		G Ŧ
✓ Inventory	Name	
Desktops	unauthen@bc.com (Unauthenticated User)	^
Applications		
Farms		
<		>

Click the name of the application pool in the list of pools, and select the **Entitlements** tab.

Important: At the time of this writing, the latest client software release is Horizon Client 4.8, and this feature is available only for the HTML Access web client, and for Linux, Windows, Android, and Chrome OS client devices. Part of the exercise Use Horizon Client from a PC or Laptop gives step-by-step instructions for using this feature to access published applications anonymously.

For a complete list of rules and guidelines for configuring unauthenticated users, see the product documentation topic **Providing Unauthenticated Access for Published Applications**.

Use Horizon Client from a PC or Laptop

After you have finished deploying virtual desktops or published applications and entitling users, you are ready to explore end-user connection options. This exercise guides you through using VMware Horizon® Client on a PC or laptop endpoint, which include Windows, macOS, and Linux.

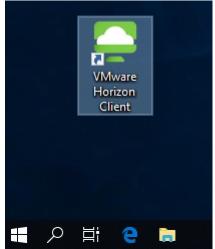
VMWare^{\circ} Confidential | \odot VMware, Inc.

Prerequisites for Connecting to a Desktop or Application with Horizon Client

To perform this exercise, you need the following:

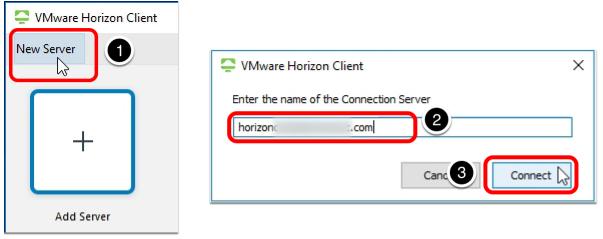
- Endpoint PC You can use a Mac, Linux, or Windows PC. For this exercise, do not use a device with a Windows 10 UWP
 operating system because the unauthenticated user access feature is not yet available for that OS.
- Installer Go to the Download VMware Horizon Clients page, and download and install the free Horizon Client software.
- **User account** To install the Horizon Client software, you must log in to the endpoint device as a user with administrative privileges.
- **Connection Server address** Verify that you have the fully qualified domain name of the Connection Server that brokers connections to the desktop and application pools you created in earlier exercises.
- **Desktop or application pools** Exercises for creating pools are included in the chapters Creating Single-User Desktop Pools and Creating RDSH-Published Desktops and Applications.
- **Configuration of unauthenticated access** To connect anonymously to a published application, you must have performed the exercise Configure Unauthenticated Access to Published Applications.

1. Start Horizon Client



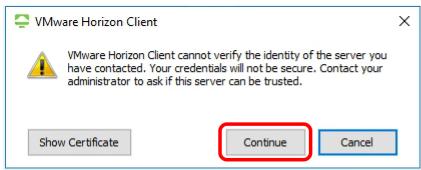
Start VMware Horizon Client the same way you would start any application. For example, on a Windows PC, double-click the desktop icon.

2. Connect to the Connection Server



- 1. Click New Server.
- 2. When prompted, enter the FQDN of the Connection Server.
- 3. Click Connect.

3. Click Continue If You Receive a Security Warning



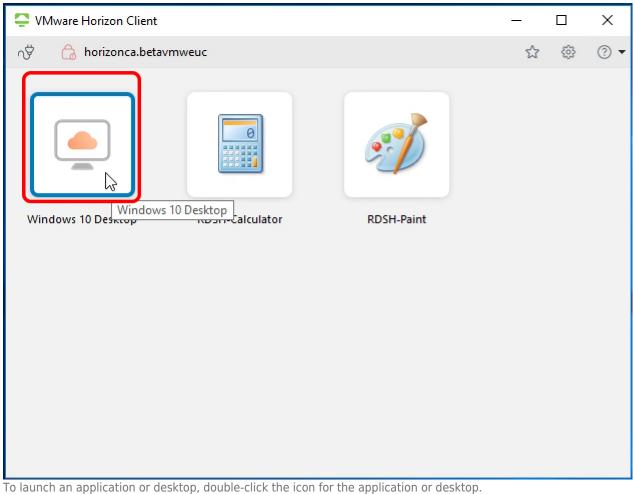
Click **Continue** to bypass the certificate warning. If you install a CA-signed security certificate on the machine that hosts the Connection Server, this warning does not appear.

4. Supply User Credentials

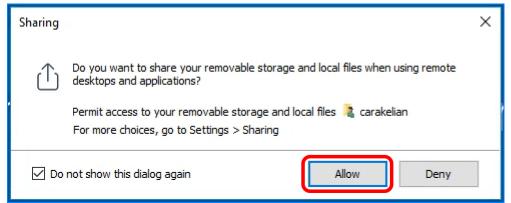
📮 Login	—	×
Server:	🔒 https://horizon	
User name:		
Password:	•••••	
	Cancel	

Enter credentials of a user who is entitled to desktops and published applications, and click **Login**.

5. Launch a Desktop or Application

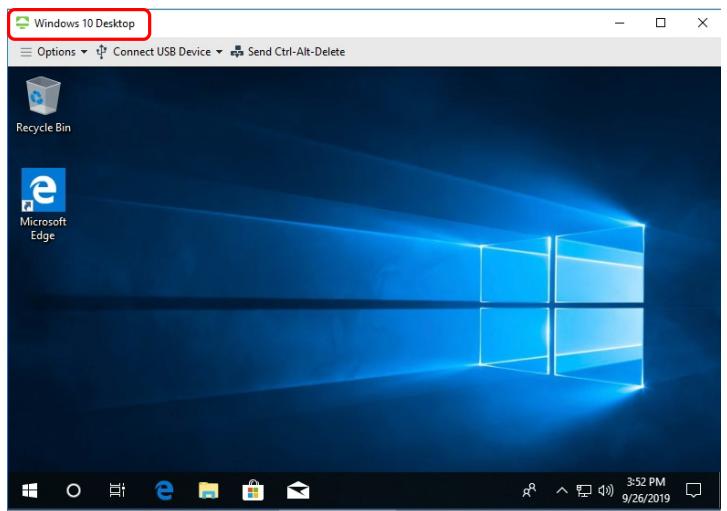


6. Allow Sharing of Removable Storage and Local Files



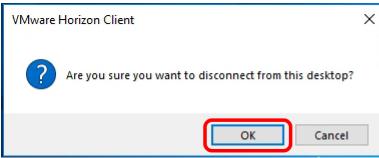
Click **Allow** to allow access to files on your client device, as well as locally connected storage devices such as USB thumb drives, while using virtual desktops and published applications.

7. Verify a Successful Connection



Verify that you have successfully logged in to your desktop or application. For this example, we have successfully logged in to an instant-clone VM from the Windows 10 Desktop pool.

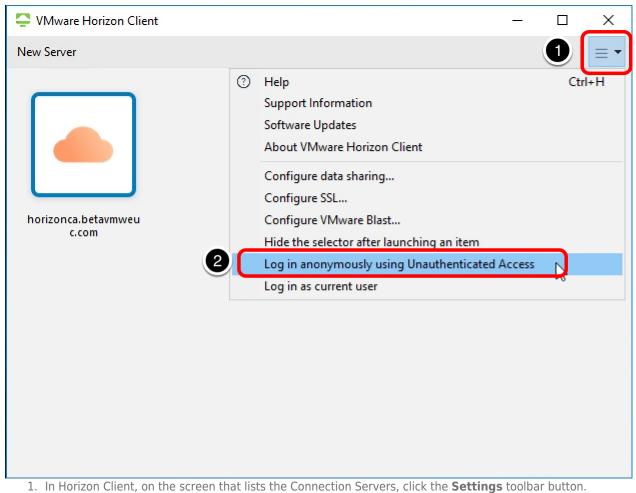
8. Disconnect from the Session and Exit



1. Close the window as you normally would, and, for desktops, confirm that you want to disconnect.

- 2. Quit Horizon Client.
- 3. Restart Horizon Client.

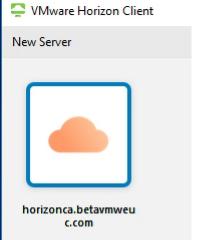
9. Select to Log In to Published Applications Anonymously



2. Click to place a check mark in front of **Log in anonymously using Unauthenticated Access**.

Important: At the time of this writing, the latest release is Horizon Client 5.2, and this feature is available only for the HTML Access web client and for Linux, Windows, Android, and Chrome OS client devices.

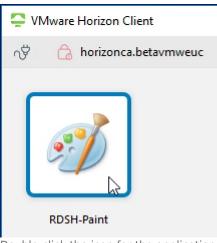
10. Connect to the Server



Double-click the server icon.

Instead of being prompted to enter user credentials, you will see the application selector screen, displaying all the published applications that are configured for unauthenticated user access. If no applications appear in the selector, you need to complete the exercise **Configure Unauthenticated Access to Published Applications**.

11. Launch the Application



Double-click the icon for the application.

12. Verify Unauthenticated Access

øj 🔡 '	າ ຕ =	•		Untitled - Paint				_ □	x
File	Home	View	1						^ 🕐
Clipboard	[]] Image	Tools	Brushes	(P) Shapes	Size	Colors			
Ŧ	Ŧ	*	▼	*	*	*			
									^
									=
									- 11
									~
<		III							>
÷						100% 🤆) —	Ū—	•
<u>م</u>	Цi	е	i -	VMware	Horizon	Client	øj Untitl	led - Paint	
Note that th		ation win	ndow looks	s iust like	e it would	l if it wer	e a locally	installed	applicatio

The application icon for the published application appears in the taskbar just as it would for a locally installed application.

The screenshots in this exercise showed the Windows-based client and seamless integration into the Windows user experience. If you install Horizon Client on other operating systems, such as macOS or Linux, the experience of using Horizon Client is likewise

VMWare[°] Confidential | © VMware, Inc.

integrated into those operating systems and their OS-specific features.

Tip: If you have problems logging in anonymously, see the complete list of rules and guidelines for configuring unauthenticated users, available in the product documentation topic **Providing Unauthenticated Access for Published Applications**.

Use the HTML Access Web Client

You can connect to virtual desktops and published applications from an HTML5-enabled web browser. The supported web browsers are

- Chrome
- Internet Explorer
- Microsoft Edge
- Firefox
- Safari

The versions of browsers supported depend on the client operating system. For details about supported client operating systems and browser versions, see the VMware Horizon HTML Access User Guide.

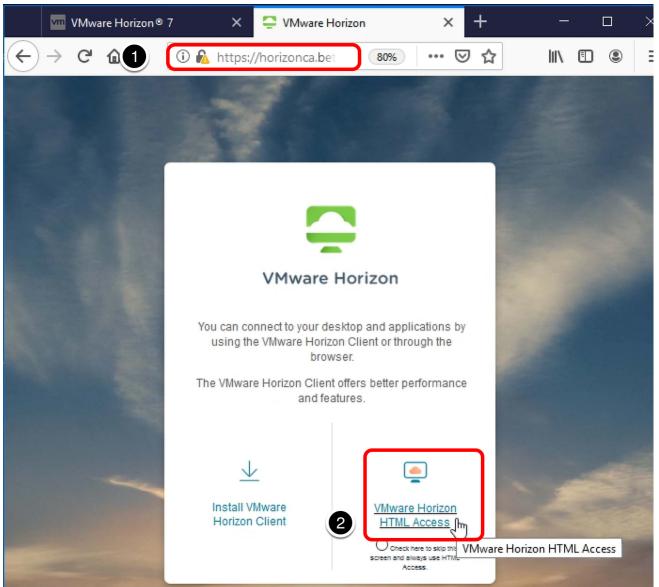
Important: The desktop or application you are connecting to through HTML Access must be in a pool with the HTML Access feature enabled. The exercises in this quick-start guide directed you to enable HTML Access when creating pools.

Prerequisites for Connecting to a Desktop or Application with HTML Access

To perform this exercise, you need the following:

- **Connection Server address** Verify that you have the fully qualified domain name of the Connection Server that brokers connections to the desktop and application pools you created in earlier exercises.
- **Desktop or application pools** Exercises for creating pools are included in the chapters Creating Single-User Desktop Pools and Creating RDSH-Published Desktops and Applications.
- Chrome browser (Optional) To display the Allow H.264 decoding setting, which is pictured in one of the following steps, you must use a Chrome browser.

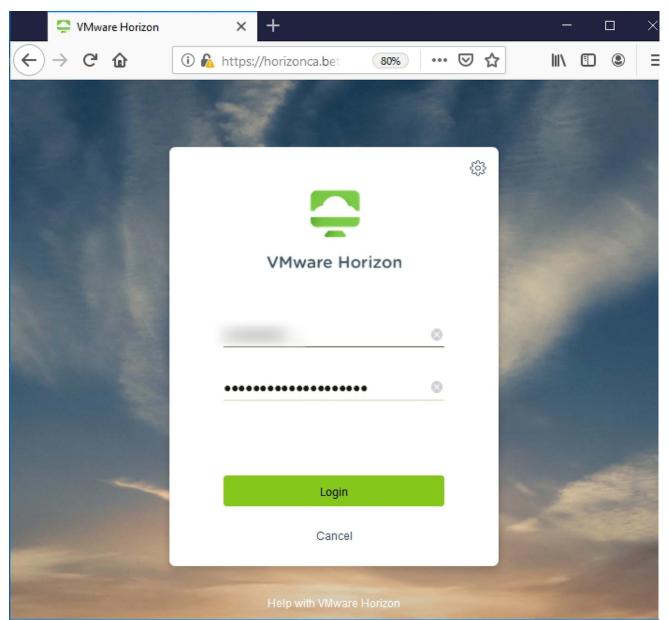
1. Use a Browser to Launch HTML Access



- Open a supported web browser and enter the address of your Connection Server. The URL format is https://<connection-server-FQDN>
 Note: If you do not have a CA-signed security certificate, you might be prompted to add a security exception to your browser.
- 2. Click VMware Horizon HTML Access.

2. Log In to the Server

Quick-Start Tutorial for VMware Horizon 7



Enter credentials of a user who is entitled to the desktop or application pool, and click **Login**.

After the credentials are validated, you can see the available desktops and applications.

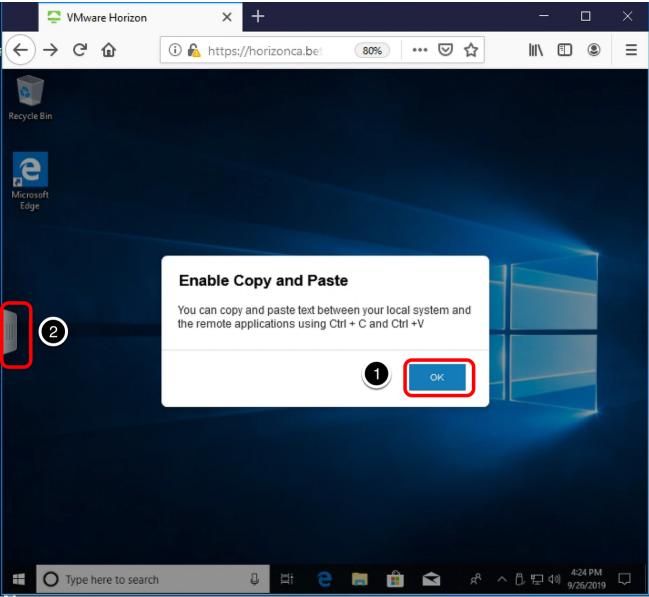
3. Mark an Item as a Favorite

	Ģ	VMwa	are Horizon		× +						_	[×
$\langle \boldsymbol{\leftarrow} \rangle$	\rightarrow	G	ወ	🛈 <u>6</u> ht	tps://horizor	nca.bet	80%	•••	⊠ ☆	•	lii\	1	۲	≡
		-	Horizo	on				2	☆	<u>نې</u> (3 6	Þ		~
		Q	Search											
		3	Uindows 7 Desktop	Mark as F	avorite									
			RDSH- Calculate	*	RDSH-Paint									
														~

- Click a star in one of the desktop icons to mark the desktop as a favorite. This feature is convenient if you have many desktops and applications and do not want to have to scroll to find the applications and desktops you use most frequently.
- 2. Click the Star toolbar button to display only favorites.
- 3. Click the desktop icon, rather than the star, to launch the desktop in your browser.

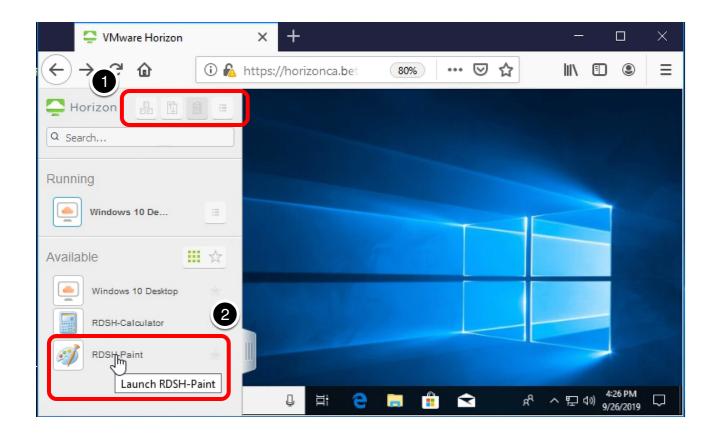
Note: You can also use the **Search** field to quickly locate an application or desktop if you know its display name.

4. Click an Icon to Launch a Desktop and Then Open the Sidebar



- 1. Click $\ensuremath{\textbf{OK}}$ to enable copy and paste functionality.
- 2. Click the tab on the left side of the screen to open the navigation sidebar.

5. Open a Published Application Using the Sidebar



- 1. Hover your cursor over each toolbar button to display its tooltip.
 - You can use the toolbar at the top of the sidebar to
 - $\circ~\mbox{Send}$ Ctrl+Alt+Del to the application work area
 - $\circ\;$ Transfer files, if the feature is enabled
 - Open the Copy & Paste panel
 - Open the Settings menu
- 2. Click an application in the sidebar to launch it.

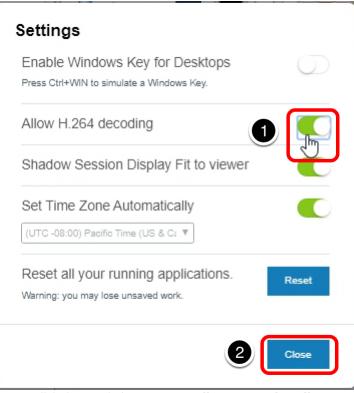
Note: In the sidebar, you can click the star icon to the right of an application or desktop name to designate the item as a favorite, and click the star above the list to display only favorites.

6. Examine the Settings Available Through the Sidebar

Steven VMware Horizon	× +		- 🗆 X
← → ⊂ ŵ ① №	https://horizonca.bet	80% … 🛛 🕁	\ 🗊 🔹 ≡
Horizon 🖁 🗊	Intitled -	Paint	- 🖬 ×
Q Search	Settings		
	E Fullscreen	Color Color	Edit
Running	i About	Colors	
Windows 10 Des	E→ Log out		
Available			
Windows 10 Desktop			
RDSH-Calculator			
RDSH-Paint	15, 425, 216		
	1 426 × 216px	8	100% 🖂 —— 🕞 🛞

Click the **Menu** toolbar button, and select **Settings**.

7. Turn On Hardware Decoding

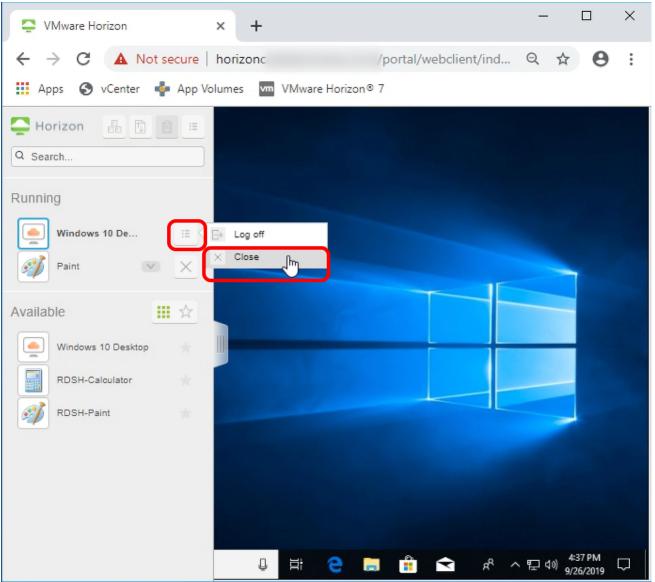


1. Click the toggle button to set Allow H.264 decoding to On.

2. Click Close.

When you use a Chrome browser and use the VMware Blast Extreme display protocol, this setting causes the graphics processor on the client device to do the work involved in playing back video and images. Hardware decoding offloads the work to the GPU, so that CPU consumption is reduced, resulting in less device power consumed, for longer battery life. To make the setting take effect, you must disconnect and reconnect to the desktop or application.

For information about the **Shadow Session Display Fit to viewer** setting, see the product documentation topic Using the Session Collaboration Feature.



8. Disconnect from the Desktop

In the list of running desktops and applications, click the **Menu** toolbar button next to the desktop and select **Close**, or close the browser tab or window.

This exercise described using the HTML Access web client, which does not require installing any software on the client device. For information about HTML Access features such as copying and pasting or transferring files between your local client system and the virtual desktop or published application, see the HTML Access documentation.

This exercise described logging in as an entitled user. For information about logging in using unauthenticated user access, see the product documentation topic Use Unauthenticated Access to Connect to Published Applications.

Use Horizon Client from a Mobile Device

This exercise guides you through using the iOS Horizon Client on an iPad, though Horizon Clients are also available for Android, Windows 10 UWP, and Chrome mobile devices.

Prerequisites for Connecting to a Desktop or Application with Horizon Client

To perform this exercise, you need the following:

- Installer On your mobile device, go to the Download VMware Horizon Clients page, and download and install the free Horizon Client software.
- **Connection Server address** Verify that you have the fully qualified domain name of the Connection Server that brokers connections to the desktop and application pools you created in earlier exercises.
- **Desktop or application pools** Exercises for creating pools are included in the chapters Creating Single-User Desktop Pools and Creating RDSH-Published Desktops and Applications.

Alternatively, if you are a VMware customer, partner, or VMUG Advantage member, you can connect to a Horizon server and desktop and application pools through the VMware TestDrive portal. For information about signing up and using TestDrive, go to kb.vmtestdrive.com.

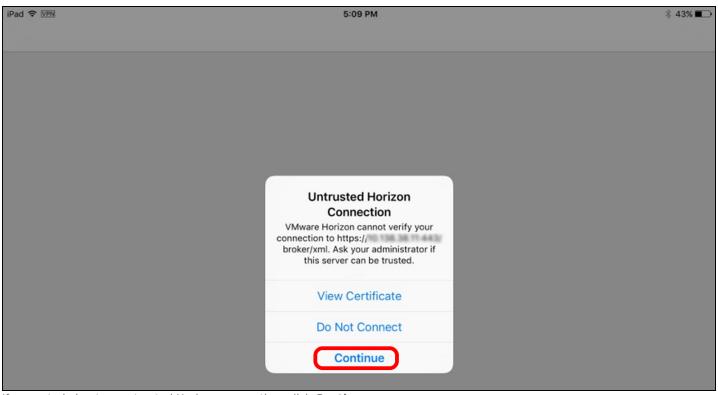
1:08 PM	Sat Se	en 28							84	80%
<	>	Ш	AA		kb.vmtestdrive.com		૮	₾	+	G
v	mw	/are	TEST	DRIVE		(SUBMIT A RE	QUEST	SIGN	IN
					How can we help?	>				
			Q Searc	h			SEARCH			
		ſestDriv	ve Overviev	v	Digital Workspace Product Walkthroughs	Act	celerate Cl	oud Jou		
									Add	Choices

1. Start Horizon Client

11:45 AM Sat Sep 28		우 🗸 98% 🛤
Cancel	Server Setup	Settings
	VMware Horizon	
	Server Address	
	Description (optional)	
	Connect	
Launch Horizon Client, enter the FODN of	of the Connection Server in the Server Address	text box, and tap Connect .

Tip: If you are using the default self-signed SSL certificate, an Untrusted View Connection warning appears. You can modify the Horizon Client security settings by tapping the **Settings** link in the upper-right corner.

2. Click Continue to Accept the Self-Signed Certificate

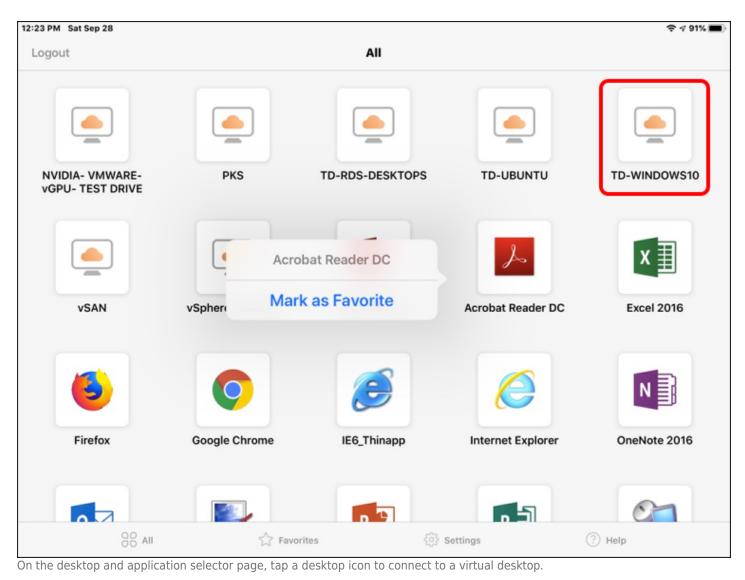


If prompted about an untrusted Horizon connection, click Continue.

3. Log In to the Connection Server

12:41 PM Sat Sep 28			হ 🕫 84% 🔳
Cancel			
	<u> </u>		
	_	•	
	VMware He		
	A https://horizon.testdriv		
	_		
	Username		
	Dessurend		
	Password		
	Domain	>	
	Login		
Enter the credentials of a user who is entil	lad to the decision or early	cation need	

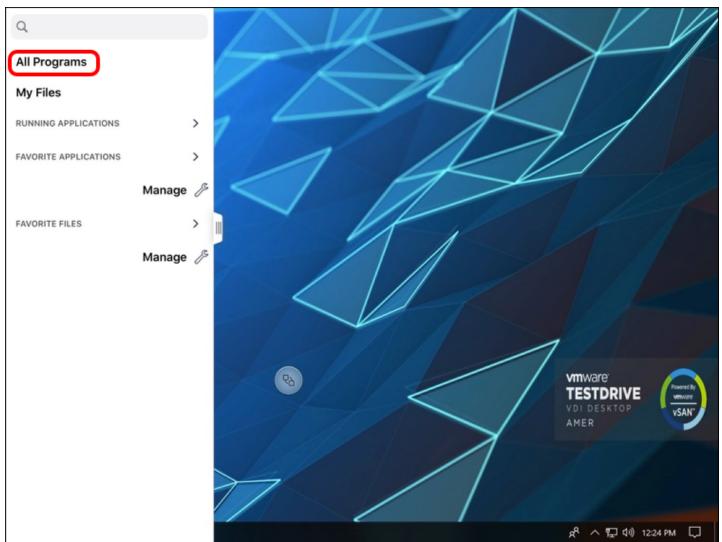
4. Launch a Desktop



Tip: You can tap and hold an icon to display a context menu and mark the item as a favorite. Tap **Favorites** at the bottom of the screen to display only items marked as favorites.

The Unity Touch sidebar appears on the left side of the screen. If you are connected to a desktop, the sidebar provides the functionality of a typical Windows Start menu without having to maneuver your touch screen to use the Start menu. If the sidebar is closed, you can slide the tab to the right to open the sidebar.

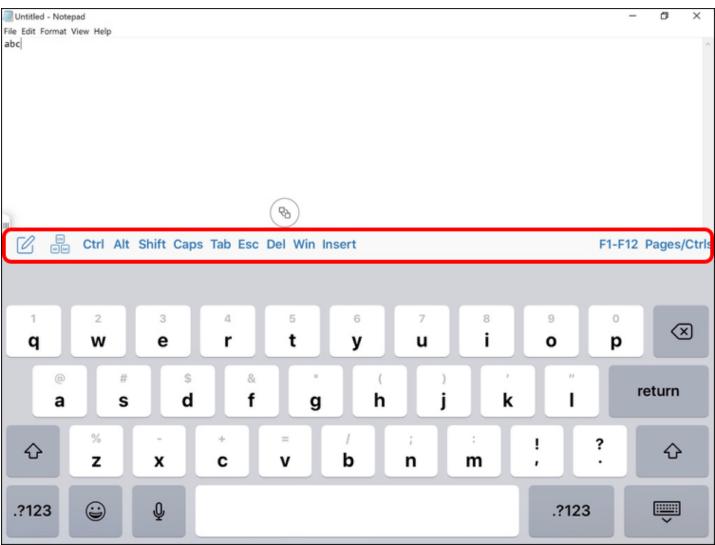
5. Tap All Programs and Select an Application



Tap **All Programs** in the sidebar and tap an application such as a word-processing or spreadsheet application, which allows you to enter text.

Tip: For convenience, to keep favorite applications or files listed in the sidebar, tap **Manage** under **FAVORITE APPLICATIONS** or **FAVORITE FILES** and select your favorites.

6. Enter Text in the Application

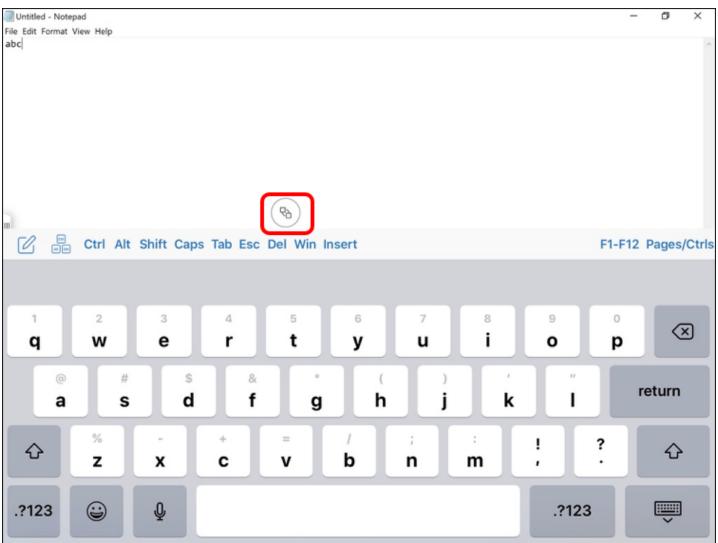


Tap in the application to enter text.

The on-screen keyboard appears unless you already have a keyboard attached to the device.

Above the traditional keyboard overlay is a row of Windows-specific keys such as arrow keys, Ctrl, Win, and so on.

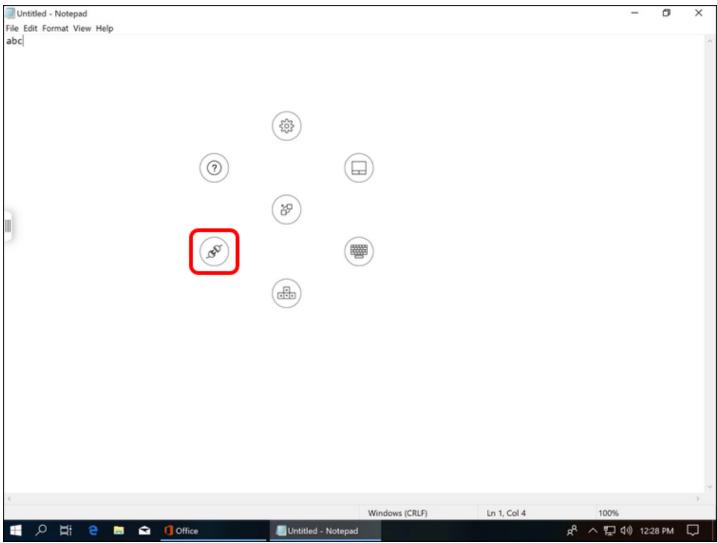
7. Tap the Horizon Client Tools Icon



Tap the Horizon Client Tools icon, and note the various icons for the various client settings.

The Horizon Client Tools enable you to perform such tasks as disconnecting from the session or bringing up the keyboard.

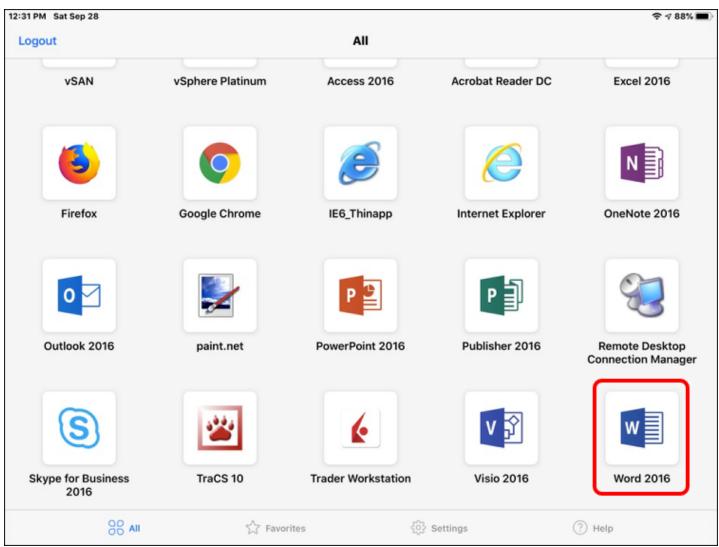
8. 9. Tap the Disconnect Icon



To end the desktop session, tap the **Disconnect** icon.

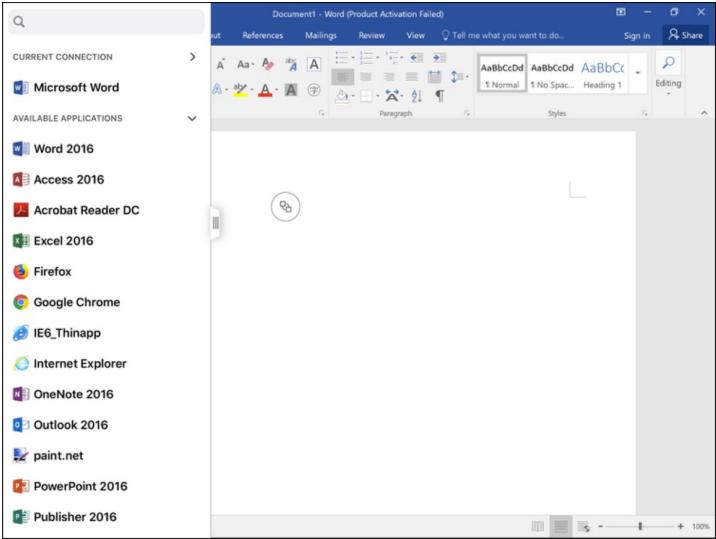
After you confirm that you want to disconnect, you are disconnected from your desktop session and returned to the list of available desktops and applications.

9. Launch a Published Application



On the desktop and application selector screen, tap a published application, such as Calculator or Word.

The application opens, along with the sidebar. To exit out of the application, you can tap the Close button (**X**) just as you would for a Windows application installed on a Windows PC or laptop.



The Unity Touch sidebar displays a list of the other application pools and desktop pools the user is entitled to. You can use the sidebar to quickly switch to another desktop or published application provided by the server you are logged in to.

10. Launch a Desktop Using the Sidebar

Q	De	cument1 - Word	d (Product Activa	tion Failed)		Ð	-	o ×
<u> </u>	t Reference	Mailings	Review	View 🖓	Tell me what you want to do	Sigr	n in	A₄ Share
PowerPoint 2016	A Aa- 🍫			ĝ↓ ¶	AaBbCcDd AaBbCcDd AaBbCc		Q	
🗐 Publisher 2016	- ab/ - A -		= \$ ≡∙	<u>@</u> •⊞•	1 No Spac Heading 1	1	Editing	
🬏 Remote Desktion Manager	G.		Paragraph	5	Styles	6		^
Skype for Business 2016								
谢 TraCS 10								
Frader Workstation	(8)						
划 Visio 2016								
word 2016								
DESKTOPS V								
NVIDIA- VTEST DRIVE (i) >								
● PKS (i) >								
TD-RDS-DESKTOPS								
TD-WINDOWS10 (i) >		Connec	t					
SAN () >								
vSphere Platinum (j) >								+ 100%

Tap an arrow next to a desktop listed in the sidebar, and tap **Connect**. You are logged in to the desktop.

This exercise showed only a few of the features available on mobile clients. For more information about all the features for the various Horizon Clients, see the VMware Horizon Client documentation.

Troubleshooting

Introduction to Troubleshooting

The exercises in this chapter demonstrate a couple of tools you can use for troubleshooting using the new Horizon Console UI.

For further information about troubleshooting, see the following Horizon 7 product documentation topics:

- Troubleshooting Horizon 7, in the Horizon 7 Administration guide
- Troubleshooting Machines and Desktop Pools, in the guide Setting Up Virtual Desktops in Horizon 7
- Troubleshooting Horizon Client, in the applicable guide for the client operating system

Note: The exercises in this guide use Horizon 7 version 7.9. But with Horizon 7 version 7.10, the newly enhanced Horizon Console Dashboard now allows you to monitor the status of Horizon 7 components, the Connection Server load, and gateway service components. For more information, see the Horizon 7 Version 7.10 Release Notes.

Monitor Remote Sessions

You can use Horizon Administrator and the new Horizon Console to monitor desktop and application sessions. These consoles give you a view into details from a farm, pool, or machine perspective. For example, you can see how many sessions are active for a pool. If you need to drill down into details for a particular user, the new Help Desk Tool is preferred, as is described in later exercises.

Note: To monitor linked-clone pools, which are created using the Composer, you must use Horizon Administrator. Linked-clone pools are visible but dimmed in the Horizon Console **Inventory** > **Desktops** list of desktop pools.

Prerequisites for Monitoring Remote Sessions

To perform this exercise, you need to have created a desktop or application pool.

1. Go to the Summary Page for the Pool or RDSH Server Farm

VMware Horizon 7		Pod: Clus	ter-HORIZON	ICA	Q User S	earch				~
▲ ▲ Monitor	Desl	ktop Pools								
Dashboard Events	Add	Edit Delete	Entitlement	s ~ St	atus v	Access Gro	oup ~	View Unen	titled ~	
Sessions	Access	group All ~					T	Filter		C
Users and Groups		ID	Displ	Туре	Source	User	vCent	Entitl	Appli	Enabl
JMP Assignments JMP V Inventory Desktops		RDSH-desktops	RDSH Deskto p	RDS de sktop p ool	vCente r (insta nt clon e)	Floatin g assig nment	vc-vdi.	0	N/A	~
Applications Farms Machines	2	Uin10-instant-clone	Windo ws 10 Deskto P	Autom ated d esktop pool	vCente r (insta nt clon e)	Floatin g assig nment	vc-vdi. c.com	4	N/A	~
Persistent Disks Settings		win-10-dedicated	Dedica ted Wi ndows	Autom ated d esktop	vCente r	Dedica ted ass ignme	vc-vdi.	0	N/A	~

Log in to the Horizon Console, and select **Inventory** > **Desktops**, for VDI desktop pools, or **Inventory** > **Farms**, for RDSH server farms.

- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. For VDI desktop pools, click the pool name on the Desktop Pools page. For published applications or desktops, click the farm name on the Farms page.

2. Monitor Sessions for a Desktop Pool or Farm

VMware Horizon ⁻⁷			Pod: Cluster	HORIZONCA	Q User S	earch		About 🕜	±
Monitor									
Dashboard	Win10-insta	nt-clone							
Events	Summary Mad	hines Machin	es (InstantC	Sessions Entitlem	ents Even	ts Tasks	Policies	Policy Overrides	
Sessions			C						
Users and Groups	Disconnect Session	Logoff Ses	sion Restart	Desktop Reset	Virtual Machin	e	T Fi	lter	G
JMP Assignments JMP	Send Message								
Inventory									
Desktops	User	Type DNS	Na Client ID	Security Gat	Start Ti	Duration	Session State	Last Session	Display Protocol
Applications	eo.		10-ic 805285a		09/26/2	17 hours			
Farms		Desk top		a a .com	19, 3:47 PM	36 minut es	Disconnected	9 hours 58 minutes	
Machines			d587710	2					
Persistent Disks									
Settings	<								>

Click the **Sessions** tab to see the following information about each session:

- User name
- Type of pool
- Machine name
- Client ID
- Security gateway
- Start and duration time
- Session state
- Time since last session (if currently disconnected)
- Display protocol; for example: Blast Extreme, PCoIP, Microsoft RDP, Console (if you launch a vSphere console)

3. Select Sessions

VMware Horizon ⁻⁷						Pod: Clus	ter-HORIZO	NCA	0
▲ Monitor	Win10-i	nstant-clo	one						
Dashboard Events	Summary	Machines	Machines (Insta	antC	Sessions	Entitlements	Events	Tasks	Policies
Sessions	Discopped	t Session	Logoff Session	Decta	art Desktop	Reset Virtual	Machine	Send M	055300
Users and Groups	Disconnec	L'SESSION LA	Logon Session	Resta	in Desktop	Reset virtual	Wathine	Seria M	essage
JMP Assignments JMP	Use Use	r Typ	pe DNS	Name	Client ID	Security Ga	teway	Start Time	e Dura
∽ Inventory		,	win1	0-ic1.k	ebdb0753-				
Desktops Applications		De	om		06a-4c66-9 ff-dc65755 7982			09/26/. 3:47 PM	17 h mini
Farms									
Machines									
Persistent Disks									

If you need to perform emergency maintenance tasks, you can select one or more users in the list, and click a button to

- Disconnect the session.
- Log the user out of the session.
- Restart the user's desktop.
- Reset the VM.
- Send a message to the user.

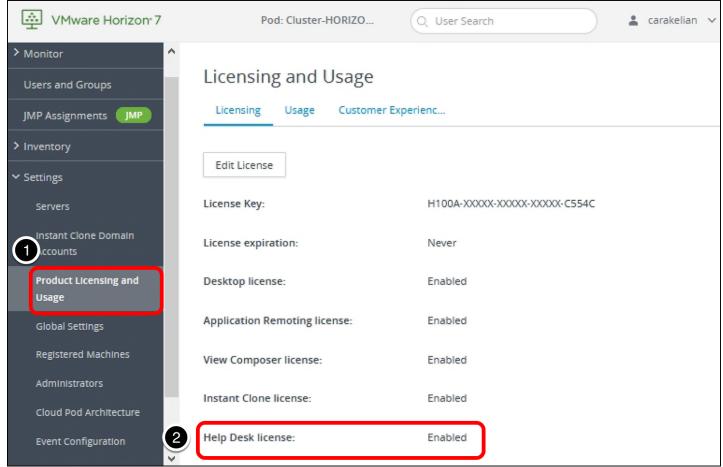
Note: The Restart Desktop and Reset Virtual Machine buttons are not available for RDSH server sessions.

Verify Prerequisites for Using the Horizon Help Desk Tool

To use the Horizon Help Desk Tool to look up and troubleshoot user sessions, you must have the correct type of Horizon license and you must verify that at least one user account in Horizon Administrator has been assigned the required role.

1. Verify That the Horizon License Includes Horizon Help Desk Tool

Quick-Start Tutorial for VMware Horizon 7



1. Log in to the Horizon Console, and navigate to **Settings > Product Licensing and Usage**.

The format of the URL for accessing Horizon Administrator is: https://<connection-server-FQDN>/newadmin 2. Verify that the Help Desk license is enabled.

You must have a valid product license key for Horizon 7 Enterprise Edition or Horizon Apps Advanced. If you do not have the correct license, after you obtain one, you can click the **Edit License** button to add the new license.

2. Familiarize Yourself with the Help Desk Administrators Roles

VMware Horizon ⁻ 7				Pod: Cluster-HORIZONCA	User Search
 Monitor Users and Groups JMP Assignments JMP 	Administrators Administrators Add Role Remove Role		Role Permission:	s Access Groups	
> Inventory	Name		Edit		
✓ Settings Servers	Administrators	^	Selected	Privilege	Scope
Instant Clone Domain Accounts	🛓 Administrators (Read only)			Local (Read only)	All
Product Licensing and Usage	Agent Registration Administra tors			Manage vCenter Configuration (Read only)	All
Global Settings	Global Configuration and Poli cy Administrators	4	~	Manage Help Desk (Read only)	All
Administrators	Global Configuration and Poli		~	Manage Global Sessions	All
Cloud Pod Architecture	cy Administrators (Read only)		~	Console Interaction	Global
Event Configuration	Help Desk Administrators			Direct Interaction	Global

- 1. In the Horizon Console, navigate to **Settings** > **Administrators**.
- 2. Click the **Role Privileges** tab.
- 3. Select the Help Desk Administrators role.
- 4. Scroll through the Privileges list to see which privileges are granted to this role.

Note: If you installed the Horizon Connection Server that included this instance of Horizon Console, you were automatically given the Administrators role. This role includes all the permissions required for the Help Desk Administrator role. If you do not have the correct permissions, you will need to edit your permissions (from the **Administrators and Groups** tab, click **Add Permission**). Next, in the Add Permission wizard, select the Help Desk Administrators role, as shown in the following screen shot:

Add Permission				
Select a role	Global Configuration and Policy Admi nistrators (Read only)			^
	🛓 Help Desk Administrators			
	🛓 Help Desk Administrators (Read only)			
	Administrators	Yes		
	📳 Inventory Administrators (Read only)	Yes		
	🛓 Local Administrators	Yes		
	🛓 Local Administrators (Read only)	Yes		
				~
			Cancel Previous	Finish

Use the Help Desk Tool to Restart a User's Virtual Desktop

In this exercise, you are a help-desk administrator. An end user needs your help because their virtual desktop has stopped responding. For virtual desktops in this desktop pool, end users are not allowed to reset or restart their machines, so the user has asked you to restart the machine. Using the Horizon Help Desk Tool, you can perform this task in less than a minute.

You can perform many troubleshooting tasks for end users with this tool:

- Restart the desktop
- End an application process running on an RDSH server for a specific user
- Send a message to the user
- Launch Microsoft Remote Assistance
- Disconnect the user session (without logging the user off)
- Log the user off of the machine
- Reset the machine, which equates to turning the power off and then on, and is useful if the OS freezes

The following section, **Troubleshooting Users in Horizon Help Desk Tool**, lists all the details about the various types of information you can view for an end user. (**10-minute** read)



https://youtu.be/

Prerequisites

Use Horizon Client or the HTML Access web client to log in to a virtual desktop as an end user. After you connect to the desktop, an active session can appear in the Horizon Help Desk Tool.

1. Select the End User

VMware Horizon 7	Pod: Cluster-H	ORIZONCA	Q Ca	roline					1 user >	$\langle \rangle$
▲ ✓ Monitor			carake CArakel			om m - 2				
Dashboard		Variation								+ 1-
Events		Your de	esktop	o mar	lage	ment ex	xperier	ice ju	ist go	ם זכ
Sessions	Introd	ucing Horizon (ace with more s				o depl
Users and Groups			Integ	rated feat	tures tha	t make managi	ng Horizon ea	isier than (ever.	
JMP Assignments JMP										
∽ Inventory	1.1									-
Desktops						•/•.•				-
Applications										
Farms										

- 1. Log in to the Horizon Console, and enter the user's name in the search bar.
- The format of the URL for accessing the console is: https://<connection-server-FQDN>/newadmin
- 2. Select the user from the search results.

2. Select the Desktop or Application Session to Troubleshoot

Com\carakelian								
2	Sessions	1 Desktops	2	Applications	5 Activities			
				▼ Filter	G			
State	Computer Name	Protocol	Туре	Connection Time	Session Duration			
● L	win10-ic1.t € :.com J ^{Im}	VMware Blast	Desktop	9/26/ 3:47 PM	21 hours 28 minute s			
ΟL	rdsh-4.b	VMware Blast	Application	9/26/ 4:28 PM	20 hours 47 minute s			

On the **Sessions** tab, in the list of active sessions, click an item in the Computer Name column.

3. Scroll Down and Click the Restart Button

● win10-ic1.≿	Details	Processes Applications		\times
VM				^
More 🗸				
User Experience Metr	ics @			
Less 🔺				
Frame Rate: 0 FPS				
BLAST Session Counters		BLAST Imaging Counters		
Estimated Bandwidth (Uplink): 76.3 Mbps	Packet Loss (Uplink): 0%	Transmitted Bytes: 944 KB	Received Bytes: 1.56 KB	
BLAST CDR Counters		BLAST Audio Counters		
Transmitted Bytes: -	Received Bytes: -	Transmitted Bytes: 58 KB	Received Bytes: 0 B	
Send Message Remote	e Assistance	More ~		~

Scroll down the **Details** tab until you get to the end of the User Experience Metrics section, and click **Restart**.

Also note the other troubleshooting options. The **Remote Assistance** option is based on Microsoft Remote Assistance. If you click **More**, the additional options are **Disconnect**, **Logoff**, and **Reset**. For more information, see **Troubleshoot Desktop or Application** Sessions in Horizon Help Desk Tool.

4. Confirm Restarting the Desktop

🛕 Restart Desktop	×		
Are you sure you want to restart this Desktop?			
This command will gracefully restart the Desktop. The guest operating system will go through a normal restart process.			
This action may take a few minutes to complete.			
Cancel	ОК		

Click **OK**. You are returned to the Sessions list, and the session for the desktop is removed from the list.

For application sessions, the troubleshooting options are slightly different, as shown in the following screenshot.

⊖ rdsh-4	Details	Processes Applications		\times		
VM						
More 🗸						
User Experience Metrics a						
Less 🔨						
Frame Rate: 0 FPS						
BLAST Session Counters		BLAST Imaging Counter	s			
Estimated Bandwidth (Uplink): 19.5 Mbps	Packet Loss (Uplink): 0%	Transmitted Bytes: 375 KB	Received Bytes: 710 B			
BLAST CDR Counters		BLAST Audio Counters				
Transmitted Bytes: -	Received Bytes: -	Transmitted Bytes: 0 B	Received Bytes: 0 B			
Send Message Remote	Assistance Disconne	ect More ~				

Be sure to see the VMware Horizon v7.5 Help Desk Tool Feature Walkthrough video for the Horizon 7 Help Desk.

Quick-Start Tutorial for VMware Horizon 7



https://youtu.be/

Summary and Additional Resources

Summary

This quick-start guide demonstrated just how quickly and easily you can use VMware Horizon 7 to create VDI desktops and RDSHpublished applications and desktops using a Horizon 7 on-premises infrastructure. You completed simple wizards to install and configure a Connection Server, which streamlines provisioning of RDSH servers and cloned desktops.

You then created automated desktop pools and an automated RDSH farm. With one simple wizard, you created multiple application pools. Next, you entitled end users to applications and desktops. In addition, this guide provided an overview of features, architecture, and components.

Finally, you enjoyed the end-user experience of launching desktops published applications from the Windows-based Horizon Client, the iOS-based Horizon Client, and the web-based HTML Access client. The native client software can be installed on Windows, Windows UWP, macOS, Linux, Chromebook, iOS, and Android endpoint devices.

Because this guide is meant to get you started quickly, it does not delve into details of all the options and features that provide a rich user experience:

- Support for use cases such as graphics-intensive 3D applications with NVIDIA GRID vGPU and Unified Communications with Microsoft Skype for Business.
- Quick and easy access to a user's files from their virtual desktops and applications with file-type association
- Support for the most commonly used peripherals, including printers, scanners and imaging devices, smart cards, and USB storage devices
- Performance optimizations to increase application responsiveness

For more information about these and other topics, see the VMware Horizon 7 documentation.

Additional Resources

The following documents are companion quick-start tutorials for Horizon 7:

- Creating an Optimized Windows Image for a VMware Horizon Virtual Desktop
- Quick-Start Tutorial for VMware Horizon JMP Integrated Workflow
- Horizon Smart Policies chapter of the Quick-Start Tutorial for User Environment Manager

You can find out more about Horizon 7 from the following resources:

- Horizon Techzone page
- VMware Horizon 7 Hands-On Lab
- VMware Horizon 7 (product information page)
- VMware Horizon 7 Documentation
- JMP and VMware Horizon 7 Deployment Considerations
- Blast Extreme Display Protocol in VMware Horizon 7
- Customizing Horizon RDSH Application Icons (VMware video)
- Help Desk Tool Demo (VMware video)
- VMware support:
 - $\circ~$ VMware Consulting Professional Services Organization (PSO)
 - VMware Product Interoperability Matrices
 - VMware Knowledge Base

You can learn more about infrastructure products that support Horizon 7 from the following resources:

- VMware vSphere (product information page)
- VMware vCenter Server (product information page)
- Microsoft SQL Server Management Studio Express (if installing the Horizon 7 event database)

VMWare[°] Confidential | © VMware, Inc.

• Microsoft .NET Framework 4.6.1 RC Web Installer for Windows

About the Authors and Contributors

This tutorial was written by Caroline Arakelian, Senior Technical Marketing Manager, End-User-Computing Technical Marketing, VMware, and Cindy Heyer Carroll, Technical Writer, End-User-Computing Technical Marketing, VMware, with appreciation and acknowledgement for assistance from:

- Jim Yanik, Senior Manager, End-User-Computing Technical Marketing, VMware
- Donal Geary, Reference Architect Engineer in End-User-Computing Technical Marketing, VMware
- Frank Anderson, End-User-Computing Architect, End-User-Computing Technical Marketing, VMware
- Graeme Gordon, Senior Staff End-User-Computing Architect, End-User-Computing Technical Marketing, VMware
- Marilyn Basanta, Director, Global Platform Engineering & Analytics, VMware

Your feedback is valuable. To comment on this tutorial, contact VMware End-User-Computing Technical Marketing at euc_tech_content_feedback@vmware.com.



Copyright © 2023 VMware, Inc. All rights reserved. VMware, Inc. 3401 Hillview Avenue Palo Alto CA

94304 USA Tel 877-486-9273 Fax 650-427-5001 VMware and the VMware logo are registered trademarks or trademarks of VMware, Inc. and its subsidiaries in the United States and other jurisdictions. All other marks and names mentioned herein may be trademarks of their respective companies. VMware products are covered by one or more patents listed at http://www.vmware.com/go/patents. Item No: vmw-wp-tech-temp-uslet-word-2021 8/21