Dell EMC Ready System for VDI on VxRail

VMware Horizon 7 for Dell EMC VxRail Hyperconverged Appliance

April 2018

H16989.1

Deployment Guide

Abstract

This deployment guide provides instructions for deploying VMware Horizon 7 components for virtual desktop infrastructure (VDI) on Dell EMC™ VxRail™ Hyperconverged Infrastructure Appliance in a VMware vSphere environment.

Dell EMC Ready Solutions for VDI

D&LLEMC

CONTENTS

CONTENTS

CHAPTER 1

Overview

This chapter presents the following topics:

Document purpose

This deployment guide describes how to install and configure the following VMware Horizon 7 core components for a virtual desktop infrastructure (VDI) on Dell EMC™ VxRail™ Appliances:

- VMware Horizon Connection Server
- Microsoft SQL Server
- VMware Horizon Composer Server
- VMware Horizon View Agent

This guide does not replace the VMware Horizon documentation. The VMware Horizon 7 Product Documentation and VMware Best Practices for Published Application and Desktops in VMware Horizon Apps and VMware Horizon 7 provide more information about deploying Horizon 7.

Microsoft Windows 10 optimizations are not within the scope of this guide because they depend on business IT policies. For more information, see Performance Best Practices for VMware vSphere 6.5 and refer to your local IT policies.

Audience

This guide is intended for decision makers, managers, architects, developers, and technical administrators of IT environments who need an understanding of how to deploy VMware Horizon 7 VDI components on a Dell EMC VxRail Appliance.

We value your feedback

Dell EMC and the authors of this document welcome your feedback on the solution and the solution documentation. Contact EMC.Solution.Feedback@emc.com with your comments.

Authors: Dell EMC Ready Solutions for VDI team, Donna Renfro

CHAPTER 2

Hardware and software requirements

This chapter presents the following topic:

VxRail Appliance prerequisites

Ensure that your environment meets the hardware and software requirements for installing VMware Horizon 7 core components for VDI on a VxRail Appliance Appliance.

This guide assumes that the following prerequisites have been met:

- VMware Horizon 7 software has been installed according to the VMware View Installation documentation.

Table 1 Software requirements

Software	Version
Microsoft Windows	10
Microsoft Windows Server 2016	Standard and Datacenter editions
VMware vCenter	6.5
VMware ESXi	6.5.0 build-5969303
Dell EMC VxRail Appliance	4.5.0-660744
VMware Horizon	7

Horizon 7 component requirements

Ensure that your environment meets the requirements for installing the core Horizon 7 components for VDI on a Dell EMC VxRail Appliance.

This guide assumes that you have met the prerequisites and installed Horizon 7 as detailed in the VMware Horizon documentation.

The Horizon 7 core components require four virtual machines, as shown in the following table:

Table 2 Virtual machine minimum requirements for Horizon 7 core components

Component	VM software	CPU	Memory	Hard drive
Horizon Connection Server	Microsoft Windows Server 2016	4	16 GB	40 GB
Microsoft SQL Server	Microsoft Windows Server 2016	4	8 GB	40 GB + 200 GB
Horizon Composer Server	Microsoft Windows Server 2016	2	8 GB	40 GB
Horizon View Agent	Microsoft Windows 10 Create the master image used to deploy a pool from Horizon 7 on this virtual machine.	Specifications depend on the size of your workload.		

CHAPTER 3

Installation and Configuration

This chapter presents the following topics:

Installing Horizon Connection Server

Before you begin

Ensure that you have met the prerequisites and installed the VMware Horizon 7 software according to the VMware Horizon 7 product documentation.

Procedure

1. On the virtual machine where the software is to be installed, download the VMware Horizon 7 software and extract the installers.

2. Select `VMware-viewconnectionserver-x86_64-7.x.x` application and run the installer.

3. If an **Open File - Security Warning** message appears, follow the best practices of your IT organization.

4. Click **Run**.

5. In the **VMware Horizon 7 Connection Server** Welcome screen, click **Next**.

6. Under **Destination Folder**, verify or change the installation directory and click **Next**.

7. Under **Installation Options**, select **Horizon 7 Standard Server** and select your network protocol. Optionally, clear **Install HTML Access**, and then click **Next**.

   If you need VMware Horizon HTML Access, refer to the VMware Horizon HTML Access Installation and Setup Guide for more information.

8. Under **Data Recovery**, create a password for the Horizon backups and click **Next**.

9. Under **Firewall Configuration**, select **Configure Windows Firewall automatically**, ensure that the ports are open, and click **Next**.

10. Under **Initial Horizon 7 Administrators**, add a domain user or group and click **Next**.

11. Under **Domain Login**, type the user name and password for the domain user or group you added and click **Next**.

12. Under **User Experience Improvement Program**, optionally, complete the form. Click **Next**.

13. To complete the wizard, click **Install**, and then click **Finish**.

Installing Horizon Security Server

After Horizon Connection Server is installed, install Horizon Security Server.

Procedure

1. Log in to the Connection Server and select **View** > **Configuration** > **Servers** > **Connection Servers** > **More Commands** > **Set Password**.

2. Under **Specify Security Server Pairing Password**, create a pairing password and set the timeout value.

   The pairing password is used for deploying the security server. You can reset it if it expires before it is used.

3. On the virtual machine where the software is to be installed, download the VMware Horizon 7 software and extract the installers.

4. Select `VMware-viewconnectionserver-x86_64-7.x.x` application and run the installer.

5. If an **Open File - Security Warning** message appears, follow the best practices of your IT organization.

6. Click **Run**.

7. In the **VMware Horizon 7 Connection Server** Welcome screen, click **Next**.

8. Under **Destination Folder**, verify or change the installation directory and click **Next**.

9. Under **Installation Options**, select **Horizon 7 Security Server**, select your network protocol, and click **Next**.

10. Under **Paired Horizon 7 Connection Server**, type the IP address or hostname of the Connection Server instance you configured in Installing Horizon Connection Server on page 12 and click **Next**.

11. Under **Paired Horizon 7 Connection Server Password**, type the domain user or group password you created in step 11 on page 12 and click **Next**.

12. Under **Horizon 7 Security Server Configuration**, verify that the auto-filled information is correct and click **Next**.

13. Under **Firewall Configuration**, select **Configure Windows Firewall automatically** and click **Next**.

14. To complete the wizard, click **Install**, and then click **Finish**.

Installing SQL Server 2014

Use this procedure if you do not already have SQL Server installed in your environment.

The Microsoft SQL Server Installation documentation provides more details about SQL Server architecture, prerequisites, and installation details.

Procedure

1. On the server that will host the SQL Server instance, double-click the **setup** application.

2. Select **Installation** > **New SQL Server stand-alone installation**.

3. Under **Product Key**, type or paste the product key and click **Next**.

4. Accept the terms of the license agreement and click **Next**.

5. Under **Microsoft Update**, select **Use Microsoft Update to check for updates** and click **Next**.

6. When the wizard has installed all setup files and checked for updates, under **Install Setup Files**, click **Next**.

7. When the **Status** values for all rules show **Passed**, under **Install Rules**, click **Next**.

   Note

   If a warning status appears, review and address the warning according to the best practices of your IT organization.

8. Under **Setup Role**, select **SQL Server Feature Installation** and click **Next**.

9. Under **Feature Selection**, click **Select All** and click **Next**.

    These are the default settings, which you can change.

10. Under **Instance Configuration**, type a unique name for the **Instance ID** and click **Next**.

11. Under **Server Configuration**, accept the default settings and click **Next**.

12. Under **Database Engine Configuration**, select **Mixed Mode**, create and confirm a password, add the local and domain users, and then click **Next**.

    The password is for the SA account and is used for the Composer Server.

13. Under **Analysis Services Configuration**, add local and domain administrator accounts and then click **Next**.

14. Under **Reporting Services Configuration**, accept the default settings and click **Next**.

15. Under **Distributed Replay Controller**, add local and domain administrator accounts and click **Next**.

16. Under **Distributed Replay Client**, type the **Controller Name** and click **Next**.

17. Under **Ready to Install**, verify the configuration and click **Next**.

18. When the installation is complete, click **Close**.

Creating SQL Server databases

Create two databases using SQL Server Management Studio.

Complete this procedure twice to create the `composerDB` and the `viewEvents` databases.

Procedure

1. In SQL Server Management Studio, right-click **Databases** and select **New Database**.

2. In the **New Database** wizard, type the name of the database, click **Add**, and click **OK**.

Results

The new database appears in the **Databases** tree.

Installing Horizon Composer

After you have created the composerDB and viewEvents databases, use the composerDB database to complete this procedure.

Before you begin

Ensure that Microsoft .NET framework version 4.6 is installed.

Procedure

1. Double-click the `VMware-viewcomposer` installation application.

2. In the VMware Horizon 7 Composer **Welcome** screen, click **Next**.

3. Accept the terms of the license agreement and click **Next**.

4. Under **Destination Folder**, verify or change the installation directory and click **Next**.

5. Under **Database Information**:

   a. Click **ODBC DSN Setup**.

   b. Select **System DSN** and click **Add**.

   c. In **Create New Data Source**, select **SQL Server** and click **Finish**.

   d. Under **Create a New Data Source to SQL Server**, type the name of the composerDB database, type a description, and type the name or IP address for the SQL Server instance, and click **Next**.

   e. Select **With SQL Server Authentication**, type the SA account and password you created when you installed SQL Server, and click **Next**.

   f. Select **Change the default Database**, select the composerDB database, and click **Next**.

   g. Click **Finish**.

   h. Click **Test Data Source** and click **Next**.

      The database appears in the System DSN tab.

   i. Click **OK**.

   j. In the **Database Information** screen, type the Data Source Name, username, and password for this account, and then click **Next**.

6. Under **VMware Horizon 7 Composer Port Settings**, click **Next**.

   Note

   Ensure that your IT organization has configured a firewall exception to allow the required ports to communicate.

7. To complete the wizard, click **Install**, and then click **Finish**.

Setting up the Horizon 7 Administrator console

Procedure

1. In a web browser, type the IP address of the virtual machine on which you configured Horizon Connection Server in Installing Horizon Connection Server on page 12.

2. Log in to the Horizon 7 Administrator console using a domain account with the credentials you configured when you installed Connection Server.

3. Select **View Configuration** > **Servers** and click **Add**.

4. Under **VC Information**, type the required settings for the vCenter Server instance being used for Horizon and click **Next**.

5. Under **View Composer**, select **Standalone View Composer Server**, enter the required information for the Composer Server instance you created in Installing Horizon Composer on page 14 and click **Next**.

6. Under **View Composer Domains**, click **Add**, type the domain name, user name, and password for the Composer Server instance, click **OK**, and then click **Next**.

7. Under **Storage**, accept the default settings and click **Next**.

8. Under **Ready to Complete**, review the information for accuracy, and click **Finish**.

9. Select **View Configuration** > **Event Configuration** > **Edit**.

10. Provide the required information for the `viewEvents` database you created in
    Creating SQL Server databases on page 14 and click **OK**.

    The event database is listed.

After you finish

Dell EMC recommends that you set up additional connection servers for redundancy
and disaster recovery. The Load Balancing for VMware Horizon View (2146312) article
provides more information.

Installing Horizon Agent

Procedure

1. On the virtual machine where the software is to be installed, download the
   VMware Horizon 7 software and extract the installers.

2. Double-click `VMware-viewagent-x86_64-7.`*x.x* and run the installer.

3. Double-click the Horizon Agent `setup` file.

4. In the **VMware Horizon Agent** Welcome screen, click **Next**.

5. Accept the terms of the license agreement and click **Next**.

6. Under **Network protocol configuration**, select **IPv4** and click **Next**.

7. Under **Custom Setup**, accept the default settings and click **Next**.

   Note

   If you do not need vRealize Operations, clear this option. It adds considerable
   overhead to Horizon Agent.

8. Under **Remote Desktop Protocol Configuration**, select **Enable the Remote
   Desktop capability on this computer**.

   If you do not enable Remote Desktop support during Horizon Agent installation,
   enable it manually after the installation is finished.

9. To complete the wizard, click **Install**, and then click **Finish**.

10. Click **Yes** to restart the desktop.

Deploying an instant clone pool

Use Horizon Administrator to create an instant clone pool.

Procedure

1. In Horizon Administrator, select **Catalog** > **Desktop Pools** and click **Add**.

2. Under **Type**, select **Automated Desktop Pool** and click **Next**.

3. Under User **Assignment**, select one of the following and click **Next**:

   - Select **Dedicated** if users require the same desktop each time they log on.
   - Select **Floating** if users do not require the same desktop each time they log
     on.

4. Under **vCenter Server**, select **Instant clones**, select the target vCenter, and
   click **Next**.

5. Under **Desktop Pool Identification**, type a unique ID for the pool, a display name that users see when they connect to the View client, type a description of the pool, and click **Next**.

6. Under **Desktop Pool Settings**, change the **Default display protocol** value to **PCoIP**, accept the defaults for the other parameters, and click **Next**.

7. Under **Provisioning Settings**, provide values for the following settings and click **Next**:

   - **Naming pattern**. Type a unique naming pattern for the pool.
     Add `{n}` to the name to append a unique number. Use `{n:fixed=x}` (where *x* is the number of digits) to make the number a fixed length. For example, `vm-{n:fixed=4}-sales`.

   - **Max number of machines**. Type the maximum number of machines. You can add to this number later, if needed.

   - Select **Provision machines on demand** or **Provision all machines up-front**.

     Note

     Provisioning all machines up front enables all machines to be ready to use immediately.

8. Under **Storage Optimization**, select **Use VMware Virtual SAN** and click **Next**.

9. Under **vCenter Settings**, click **Browse** next to each setting to select the following values, clicking **OK** for each, and then click **Next**:

   a. **Parent VM in vCenter**—Select the master image.

   b. **Snapshot**—Select the snapshot from the image.

   c. **VM folder location**—Select the folder in which to store the virtual machine.

   d. **Cluster**—Select the cluster for the virtual machine deployment.

   e. **Resource Pool**—Select the resource pool.

   f. **Datastore**—Select a datastore for the virtual machines.

   g. **Network**—Select a network for the pool.

      Dell EMC recommends that you choose the same network as the master image.

10. Under **Guest Customization**, select a domain, click **Browse** to change the **AD container** to adhere to the best practices and policies of your IT department, and click **Next**.

11. Under **Ready to Complete**, review the information for accuracy and click **Finish**.

Results

The pool appears in the **Desktop Pools** list.

Adding pool user entitlements

Procedure

1. In Horizon Administrator, select **Catalog** > **Desktop Pools**, select the pool you created and select **Entitlements** > **Add entitlement**.

2. In the **Add Entitlements** dialog box, click **Add**.

3. Under **Find User or Group**, add domain users or groups for this pool, and click **OK**.

   The desktop pool virtual machines appear in the cluster you selected during deployment.

Installing and configuring NVIDIA GPU

Before you begin

Ensure that the Memory Mapped I/O (MMIO) setting in the system BIOS is set to 12 TB:

1. Press F2 on startup to enter the system BIOS settings.

2. Select **Integrated Devices**.

3. Ensure that the Memory Mapped I/O base option is set to 12 TB.

4. Save and exit.

The Dell EMC R740xd Installation and Service Manual provides more information about the MMIO default setting and when to change it to 12 TB.

Instructions for the following steps are located in the NVIDIA Virtual GPU Software Quick Start Guide.

Procedure

1. Follow the instructions for Installing the License Server Software to configure the license server and attach the license files.

2. If you are using NVIDIA vGPU, ensure that error correcting code (ECC) memory is disabled on all GPUs.

   NVIDIA vGPU does not support ECC memory and fails to start if ECC is enabled.

   a. Ensure that NVIDIA Virtual GPU Manager is installed on your hypervisor and that the host is in maintenance mode.

   b. Follow the steps under Disabling ECC Memory.

3. Follow the steps for Configuring a vSphere VM with Virtual GPU to configure the virtual machine (VM) hardware and attach an NVIDIA vGPU profile to a VM.

4. Follow the steps for Installing the NVIDIA vGPU Software Display Driver to install the NVIDIA windows drive package on the guest VM/Master image.

CHAPTER 4

References

This chapter presents the following topics:

Dell EMC documentation

The following Dell EMC documentation provides additional and relevant information. Access to these documents depends on your login credentials. If you do not have access to a document, contact your Dell EMC representative.

- Dell EMC Ready Solutions for VDI
- Dell EMC VxRail Appliance documentation

VMware documentation

The following VMware documentation provides additional and relevant information:

- Performance Best Practices for VMware vSphere 6.5
- VMware Horizon documentation
- Best Practices for Published Application and Desktops in VMware Horizon Apps and VMware Horizon 7

NVIDIA documentation

The following NVIDIA documentation provides additional and relevant information:

- NVIDIA Virtual GPU Software Quick Start Guide