VMware View Upgrades

This document supports the version of each product listed and supports all subsequent versions until the document is replaced by a new edition. To check for more recent editions of this document, see http://www.vmware.com/support/pubs.

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VMware View Upgrades

VMware View Upgrades provides instructions for upgrading from VMware View™ 4.0.x, 4.5.x, or 4.6.x to View 5.0. You can also use this guide when you upgrade to View 5.0 patch releases.

If you also upgrade from vSphere 4.0 or vSphere 4.1 to vSphere 5.0, this guide tells you which steps of that upgrade to do at various stages of the VMware View upgrade.

For VMware View 5.0 patch releases, use the sections of this document that are specific to View Manager, View Composer, View Transfer Server, View Agent, and View Client.

Intended Audience

This guide is intended for anyone who needs to upgrade from VMware View 4.0.x, 4.5.x, or 4.6.x to View 5.0. The information in this guide is written for experienced Microsoft Windows or Linux system administrators who are familiar with virtual machine technology and datacenter operations.

VMware View Component Compatibility Matrix

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Because large enterprises must often perform phased upgrades, VMware View components are designed to be forward and backward compatible. VMware View 5.0 components are compatible with most VMware View 4.0.x, 4.5.x, and 4.6.x components.

Although components are forward and backward compatible, View Connection Server compatibility with View Agents is limited to interoperability during a View Connection Server upgrade or downgrade. You must upgrade View Agents as soon as possible to match the version of the View Connection Server that manages them.

Table 1-1 lists the components of VMware View and shows whether they are compatible with other components whose version is different. For information about compatibility with VMware Infrastructure and vSphere, see "Virtualization Software Requirements for View Connection Server," on page 13.

NOTE The View Portal component of VMware View 4.0.x has been changed so that with VMware View 4.5 and later versions, View Portal serves only as a web page for downloading the full Windows-based View Client and the full Mac-based View Client. For this reason, View Portal does not appear in the compatibility table. The Mac-based View Client is compatible only with View 4.5 and later components.

Table 1-1. Compatibility Matrix for VMware View Components

| View 5.0 | View 4.x Components | | | | |
	Connection Server 4.6.x, 4.5.x, or 4.0.x	View Agent 4.6.x, 4.5.x, or 4.0.x	View Client 4.6.x, 4.5.x, or 4.0.x	Thin Client 4.6.x, 4.5.x, or 4.0.x	View Composer 2.6, 2.5, or 2.0
Connection Server 5.0	N/A	Yes	Yes	Yes	Limitations
Security Server 5.0 (PCoIP and RDP)	Yes	Yes	Yes	Yes	N/A
View Agent 5.0	No	N/A	Yes	Yes	No
View Client (Windows) 5.0	Yes	Yes	N/A	N/A	Yes
View Client (Mac) 4.6	4.5 and 4.6 only	4.5 and 4.6 only	N/A	N/A	2.5 and 2.6 only
View Client with Local Mode 5.0	4.5 and 4.6 only	4.5 and 4.6 only	4.5 and 4.6 only	No	2.5 and 2.6 only
Thin Client 4.6	Yes	Yes	N/A	N/A	Yes
View Composer 2.7	Limitations	4.5 and 4.6 only	N/A	N/A	N/A

Until both View Connection Server and View Composer are upgraded, View Composer operations do not work. If you have View Connection Server 5.0 and View Composer 2.0, 2.5, or 2.6, users can connect to their desktops, but no new linked-clone desktops can be created, and recompose, rebalance, and refresh operations do not work. Also, you cannot edit settings for linked-clone pools.

IMPORTANT   As the table shows, View Agent 4.0.x is not compatible with View Composer 2.7. This limitation means that you must not use a View 4.0.x master image, or snapshot, when creating, recomposing, or refreshing a pool that uses features specific to View 5.0. These features, which were introduced with View 4.5, include using a system-disposable disk (SDD), using a Sysprep customization specification, and attaching a previously archived persistent disk to an existing desktop.

Although View Composer 2.7 can work with View Connection Server 4.0.x in a limited fashion, this setup is available only for cases where upgrading all View Connection Server instances during the same maintenance window is not feasible. Specifically, features that were introduced with View Composer 2.5, such as the ability to use SysPrep customization, are not available until you update to View Agent 4.5 or later.

Because View Client with Local Mode is a feature that was introduced with View 4.5, and its predecessor, Offline Desktop, was an experimental feature, View Client with Local Mode is not backward compatible with View 4.0.x components.

VMware View Upgrade Overview **2**

Upgrading an enterprise VMware View deployment involves several high-level tasks. Upgrading is a multistage process in which procedures must be performed in a particular order.

You must complete the upgrade process in a specific order. If you do not complete each upgrade stage before moving on, you can lose data and server access. Order is also important within each upgrade stage.

NOTE   This overview relates to upgrades for major, minor, and maintenance releases. For information about patches, see Chapter 8, "Applying VMware View Patches," on page 55.

How many of the following tasks you need to complete depends on which components of VMware View you use in your deployment. Because VMware View 5.0 includes components that were not available in releases earlier than View 4.5, some of the tasks might be installation rather than upgrade tasks.

1   On the physical or virtual machines that host View Connection Server instances, make backups and record various configuration and system settings. See "Preparing View Connection Server for an Upgrade," on page 21.

2   On the physical or virtual machines that host View Composer and vCenter Server, make backups and temporarily halt certain scheduled tasks. See "Preparing vCenter Server and View Composer for an Upgrade," on page 22.

3   If some of your end users are using View 4.0.x Client with Offline Desktop or View 4.5 Client with Local Mode, ask them to check in their View desktops.

4   Upgrade View Connection Server on the existing host or migrate to a new machine. See "Upgrade View Connection Servers in a Replicated Group," on page 25.

5   If you are upgrading from View 4.0.x, install and configure an event database that View Administrator 5.0 uses for displaying some of the View Connection Server events that were previously recorded only in logs. See the *VMware View 5.0 Installation* document.

   If you are upgrading from View 4.5, you have probably already installed this database. You do not need to upgrade the View 4.5 database schema. View 5.0 does not require any database schema changes.

6   For the View Client with Local Mode component, upgrade or install and configure one or more View Transfer Server instances.

Current Version	Action
View 4.0.x	Install Transfer Server instances. See the *VMware View 5.0 Installation* document.
View 4.5 and 4.6	Upgrade Transfer Server instances. See "Upgrade View Transfer Server," on page 29.

This server transfers data that end users need to check out and run View desktops locally on their client systems.

View Client with Local Mode is the fully supported feature that in earlier releases was an experimental feature called View Offline Desktop.

7   Upgrade View Composer on the existing host or, if you are also upgrading to vSphere 5.0, migrate to a new machine. See "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35.

8   Upgrade the VMware View software that runs on the physical or virtual machines that are used as desktop sources, as full-clone desktops in a pool, and as individual desktops in a manual pool. See "Upgrade View Agent," on page 47.

9   Use the newly upgraded virtual desktop sources to create upgraded pools of View desktops. See "Upgrade View Composer Desktop Pools," on page 49.

10   Upgrade the VMware View software that runs on end users' client devices. See "Upgrade View Clients," on page 50 and "Upgrade Offline Desktop Clients to View Client with Local Mode," on page 52.

Because certain commands can simultaneously upgrade more than one stage, VMware recommends that you thoroughly understand the irreversible changes at each stage before you upgrade your production environments.

System Requirements for Upgrades 3

Hosts and virtual machines in a VMware View deployment must meet specific hardware and operating system requirements.

This chapter includes the following topics:

- "View Connection Server Requirements," on page 11
- "View Transfer Server Requirements," on page 13
- "View Composer Requirements," on page 14
- "View Administrator Requirements," on page 15
- "Supported Operating Systems for Windows-Based View Client and View Client with Local Mode," on page 16
- "Hardware Requirements for Local Mode Desktops," on page 16
- "Client Browser Requirements for View Portal," on page 18
- "Supported Operating Systems for View Agent," on page 18

View Connection Server Requirements

View Connection Server acts as a broker for client connections by authenticating and then directing incoming user requests to the appropriate View desktop. View Connection Server has specific hardware, operating system, installation, and supporting software requirements.

Hardware Requirements for View Connection Server

You must install View Connection Server on a dedicated physical or virtual machine that meets specific hardware requirements.

Table 3-1. View Connection Server Hardware Requirements

Hardware Component	Required	Recommended
Processor	Pentium IV 2.0GHz processor or higher	4 CPUs
Networking	One or more 10/100Mbps network interface cards (NICs)	1Gbps NICs

Table 3-1. View Connection Server Hardware Requirements (Continued)

Hardware Component	Required	Recommended
Memory Windows Server 2008 64-bit	4GB RAM or higher	At least 10GB RAM for deployments of 50 or more View desktops
Memory Windows Server 2003 32-bit R2	2GB RAM or higher	6GB RAM for deployments of 50 or more View desktops, and enable Physical Address Extension (PAE) See the Microsoft KB article at http://support.microsoft.com/kb/283037.

These requirements also apply to replica and security server View Connection Server instances that you install for high availability or external access.

IMPORTANT The physical or virtual machine that hosts View Connection Server must use a static IP address.

Supported Operating Systems for View Connection Server

You must install View Connection Server on a supported operating system.

Table 3-2 lists the operating systems supported for View Connection Server.

These operating systems support all View Connection Server installation types, including standard, replica, and security server installations.

Table 3-2. Operating System Support for View Connection Server

Operating System	Version	Edition	Service Pack
Windows Server 2008 R2	64-bit	Standard Enterprise	None or SP1
Windows Server 2003 R2	32-bit	Standard Enterprise	SP2

Operating System Requirement for the PCoIP Secure Gateway

Although you can install a security server on a Windows Server 2003 physical or virtual machine, if you want to use the PCoIP Secure Gateway component, the operating system must be 64-bit Windows Server 2008 R2. The PCoIP Secure Gateway component enables View Clients that use the PCoIP display protocol to use a security server rather than a VPN from outside the corporate firewall.

You can pair a security server that runs on a 64-bit Windows Server 2008 R2 host with a Connection Server instance that runs on Windows Server 2003 or 2003 R2. Clients can still use the PCoIP Secure Gateway with this pair.

IMPORTANT If you use a load balancer in front of multiple security servers, make sure all security servers use the same operating system.

Upgrade Requirements for View Connection Server

The View Connection Server upgrade process has specific requirements and limitations.

- View Connection Server requires a valid license key for View 5.0. As of the release of VMware View 4.0, the VMware View license key is a 25-character key.

- The domain user account that you use to install the new version of View Connection Server must have administrative privileges on the View Connection Server host. The View Connection Server administrator must have administrative credentials for vCenter Server.

If you plan to perform fresh installations of View Connection Server instances on additional physical or virtual machines, see the complete list of installation requirements in the *VMware View Installation* document.

Virtualization Software Requirements for View Connection Server

View Connection Server requires VMware virtualization software to function properly.

- If you are using vSphere, you must use one of the following supported versions:
    - vSphere 4.0 Update 3 or later
    - vSphere 4.1 Update 1 or later
    - vSphere 5.0 or later
- Both ESX and ESXi hosts are supported.

View Transfer Server Requirements

View Transfer Server is an optional View Manager component that supports check in, check out, and replication of desktops that run in local mode. View Transfer Server has specific installation, operating system, and storage requirements.

Installation Requirements for View Transfer Server

You must install View Transfer Server as a Windows application in a virtual machine that meets specific requirements.

The virtual machine that hosts View Transfer Server must meet several requirements regarding network connectivity:

- It must be managed by the same vCenter Server instance as the local desktops that it will manage.
- It does not have to be part of a domain.
- It must use a static IP address.

CAUTION You must configure the virtual machine that hosts View Transfer Server with an LSI Logic Parallel SCSI controller. You cannot use a SAS or VMware paravirtual controller.

On Windows Server 2008 virtual machines, the LSI Logic SAS controller is selected by default. You must change this selection to an LSI Logic Parallel controller before you install the operating system.

The View Transfer Server software cannot coexist on the same virtual machine with any other View Manager software component, including View Connection Server.

You can install multiple View Transfer Server instances for high availability and scalability.

Supported Operating Systems for View Transfer Server

You must install View Transfer Server on a supported operating system with at least the minimum required amount of RAM.

Table 3-3. Operating System Support for View Transfer Server

Operating System	Version	Edition	Service Pack	Minimum RAM
Windows Server 2008 R2	64-bit	Standard Enterprise	None or SP1	4GB
Windows Server 2003 R2	32-bit	Standard Enterprise	SP2	2GB

IMPORTANT   Configure two virtual CPUs for virtual machines that host View Transfer Server.

View Composer Requirements

View Manager uses View Composer to deploy multiple linked-clone desktops from a single centralized base image. View Composer has specific installation and storage requirements.

Supported Operating Systems for View Composer

View Composer supports 64-bit operating systems with specific requirements and limitations. You must install View Composer on the same physical computer or virtual machine as vCenter Server.

Table 3-4 lists the operating systems supported for View Composer.

Table 3-4. 64-Bit Operating System Support for View Composer

vCenter Server Version	Operating System	Edition	Service Pack
4.0 Update 3 and later	Windows Server 2008 R2	Standard or Enterprise	None or SP1
4.1 Update 1 and later	Windows Server 2008 R2	Standard or Enterprise	None or SP1
5.0 and later	Windows Server 2008 R2	Standard or Enterprise	None or SP1

Database Requirements for View Composer

View Composer requires an SQL database to store data. The View Composer database must reside on, or be available to, the vCenter Server computer.

If a database server already exists for vCenter Server, View Composer can use that existing database server if it is a version listed in Table 3-5. For example, View Composer can use the Microsoft SQL Server 2005 or 2008 Express instance provided with vCenter Server. If a database server does not already exist, you must install one.

View Composer supports a subset of the database servers that vCenter Server supports. If you are already using vCenter Server with a database server that is not supported by View Composer, continue to use that database server for vCenter Server and install a separate database server to use for View Composer and View Manager database events.

IMPORTANT   If you create the View Composer database on the same SQL Server instance as vCenter Server, do not overwrite the vCenter Server database.

Table 3-5 lists the supported database servers and versions. For a complete list of database versions supported with vCenter Server, see the *VMware vSphere Compatibility Matrixes* on the VMware vSphere documentation Web site.

Table 3-5. Supported Database Servers for View Composer

Database	vCenter Server 5.0 and later	vCenter Server 4.1 U1 and later	vCenter Server 4.0 U3 and later
Microsoft SQL Server 2005 Express	No	Yes	Yes
Microsoft SQL Server 2005 SP3 and later, Standard and Enterprise (32- and 64-bit)	Yes	Yes	Yes
Microsoft SQL Server 2008 R2 Express	Yes	No	No
Microsoft SQL Server 2008 SP1 and later, Standard and Enterprise (32- and 64-bit)	Yes	Yes	Yes
Oracle 10g Release 2	Yes	Yes	Yes
Oracle 11g Release 2, with Oracle 11.2.0.1 Patch 5	Yes	Yes	Yes

NOTE   If you use an Oracle 11g R2 database, you must install Oracle 11.2.0.1 Patch 5. This patch requirement applies to both 32-bit and 64-bit versions.

View Administrator Requirements

Administrators use View Administrator to configure View Connection Server, deploy and manage desktops, control user authentication, initiate and examine system events, and carry out analytical activities. Client systems that run View Administrator must meet certain requirements.

View Administrator is a Web-based application that is installed when you install View Connection Server. You can access and use View Administrator with the following Web browsers:

- Internet Explorer 7
- Internet Explorer 8
- Internet Explorer 9
- Firefox 3.0
- Firefox 3.5

To use View Administrator with your Web browser, you must install Adobe Flash Player 10 or later. Your client system must have access to the internet to allow Adobe Flash Player to be installed.

To display text properly, View Administrator requires Microsoft-specific fonts. If your Web browser runs on a non-Windows operating system such as Linux, UNIX, or Mac OS, make sure that Microsoft-specific fonts are installed on your computer.

Currently, the Microsoft Web site does not distribute Microsoft fonts, but you can download them from independent Web sites.

Supported Operating Systems for Windows-Based View Client and View Client with Local Mode

Users run View Client to connect to their View desktops. You must install View Client or View Client with Local Mode on a supported operating system.

Table 3-6 lists the Microsoft Windows operating systems supported for View Client. For information about operating systems supported by other View Clients, such as View Client for the Mac and View Client for iPad, see the documents that pertain to the specific client. Go to
https://www.vmware.com/support/viewclients/doc/viewclients_pubs.html.

Table 3-6. View Client Operating System Support for Windows-Based Clients

Operating System	Version	Edition	Service Pack
Windows 7	32-bit and 64-bit	Home, Enterprise, Professional, and Ultimate	None and SP1
Windows XP	32-bit	Home and Professional	SP3
Windows Vista	32-bit	Home, Business, Enterprise, and Ultimate	SP 1 and SP2

IMPORTANT View Client with Local Mode is supported only on Windows systems and only on physical computers. In addition, to use this feature, your VMware license must include View Client with Local Mode.

View Client with Local Mode is the fully supported feature that in earlier releases was an experimental feature called View Client with Offline Desktop.

NOTE VMware partners offer thin client devices for VMware View deployments. The features and Linux operating systems that are available for each thin client device are determined by the vendor and model and the configuration that an enterprise chooses to use. For information about the vendors and models for thin client devices, see the *Thin Client Compatibility Guide*, available on the VMware Web site.

Hardware Requirements for Local Mode Desktops

When you check out a View desktop to run on your local computer, the hardware on the client computer must support both the local system and the virtual machine that now runs on it.

Virtual Hardware

Checking out a View desktop that uses virtual hardware version 8 is not supported. If you use vSphere 5 to create virtual machines that will be sources for local mode desktops, be sure to create virtual machines that use virtual hardware version 7.

PC Hardware

Table 3-7 describes the hardware requirements for various View desktop operating systems.

Table 3-7. Processor Requirements

Client Computer Requirement	Description
PC	Standard x86 or x86 64-compatible
Number of CPUs	Multiprocessor systems are supported
CPU speed	For a Windows XP local desktop, 1.3GHz or faster; 1.6 1GHz recommended
	For a Windows 7 desktop, 1.3GHz or faster; for Aero effects, 2.0GHz or faster
Intel processors	Pentium 4, Pentium M (with PAE), Core, Core 2, Core i3, Core i5, and Core i7 processors
	For Windows 7 Aero: Intel Dual Core
AMD processors	Athlon, Athlon MP, Athlon XP, Athlon 64, Athlon X2, Duron, Opteron, Turion X2, Turion 64, Sempron, Phenom, and Phenom II
	For Windows 7 Aero: Althon 4200+ and above
64-bit operating systems	Intel Pentium 4 and Core 2, and Core i7 processors with EM64T and Intel Virtualization Technology
	Most AMD64 processors (except the earliest revision C Opteron processors)
GPU for Windows 7 Aero	nVidia GeForce 8800GT and above
	ATI Radeon HD 2600 and above

Disk Space

If you use a default setup for the operating system in the View desktop, the actual disk space needs are approximately the same as those for installing and running the operating system and applications on a physical computer.

For example, Microsoft recommends 16GB of hard disk space for a machine that runs a 32-bit Windows 7 operating system. If you configure a 16GB virtual hard disk for a 32-bit Windows 7 virtual machine, only the amount of disk space actually used is downloaded when you check out the local desktop. For a desktop that is allocated 16GB, the actual download size might be 7GB.

After the desktop is downloaded, the amount of disk space used can grow to 16GB if you configured a 16GB hard disk. Because a snapshot is taken during replication, an additional equivalent amount of disk space is required. For example, if 7GB of disk space is currently being used for the local desktop, the snapshot consumes an additional 7GB on the client computer.

IDE and SCSI hard drives are supported.

Memory

You need enough memory to run the host operating system on the client computer, plus the memory required for the View desktop's operating system and for applications on the client computer and the View desktop. VMware recommends that you have 2GB and above for Windows XP and Windows Vista, and 3GB and above for Windows 7. For more information on memory requirements, see your guest operating system and application documentation.

The total amount of memory you can assign to all virtual machines running on a single computer is limited only by the amount of RAM on the computer. The maximum amount of memory for each View desktop on 32-bit client computers is 8GB and on 64-bit computers it is 32GB.

Display

A 32-bit display adapter is recommended. 3D benchmarks, such as 3DMark '06, might not render correctly or at all when running Windows Vista or Windows 7 virtual machines on some graphics hardware.

To play video at 720p or higher requires a multiprocessor system.

For CPU and GPU requirements to support Windows 7 Aero, see Table 3-7.

Client Browser Requirements for View Portal

From a client system, you can browse to a View Connection Server instance and use View Portal to install a Mac-based View Client, a Windows-based View Client, or View Client with Local Mode. If you use Internet Explorer, View Portal indicates when a new version of View Client is available for download.

To use View Portal, you must have one of the following Web browsers:

- Internet Explorer 7

- Internet Explorer 8

- Internet Explorer 9

- Firefox 3.0

- Firefox 3.5

If you use Internet Explorer and you already have View Client installed, if the version available from View Connection Server is newer than that installed on the client device, you can choose to upgrade. If the version is the same as that on the client device, View Portal starts the View Client installed on the local system.

NOTE View Portal does not support Linux. A native client for Linux is available only through certified VMware partners.

Supported Operating Systems for View Agent

The View Agent component assists with session management, single sign-on, and device redirection. You must install View Agent on all virtual machines, physical systems, and terminal servers that will be managed by View Manager.

Table 3-8 lists the operating systems supported for View Agent.

Table 3-8. View Agent Operating System Support

Guest Operating System	Version	Edition	Service Pack
Windows 7	64-bit and 32-bit	Enterprise and Professional	None and SP1
Windows Vista	32-bit	Business and Enterprise	SP1 and SP2
Windows XP	32-bit	Professional	SP3
Windows 2008 R2 Terminal Server	64-bit	Standard	None and SP1
Windows 2008 Terminal Server	64-bit	Standard	SP2
Windows 2003 R2 Terminal Server	32-bit	Standard	SP2
Windows 2003 Terminal Server	32-bit	Standard	SP2

To use the View Persona Management feature, you must install View Agent on Windows 7, Windows Vista, or Windows XP virtual machines. View Persona Management does not operate on physical computers or Microsoft Terminal Servers.

IMPORTANT   If you use Windows 7 in a virtual machine, the host must be ESX/ESXi 4.0 Update 3 or later, ESX/ESXi 4.1 Update 1 or later, or ESXi 5.0 or later.

Preparing for a VMware View Upgrade

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Before you start the upgrade process, you must review system requirements for the new version, back up databases, take snapshots of virtual machines that host server components, and document configuration settings.

This chapter includes the following topics:

Preparing View Connection Server for an Upgrade

Before you upgrade View Connection Server or before you upgrade any of the vSphere components that View Connection Server relies on, you must perform several tasks to ensure that these upgrades are successful.

- Verify that the virtual or physical machine on which the current View Connection Server instance is installed meets the system requirements for View 5.0.

  See "View Connection Server Requirements," on page 11.

- If View Connection Server is installed in a virtual machine, take a snapshot of the virtual machine. If you have a replicated group of View Connection Server instances, take a snapshot of only one View Connection Server instance.

  For instructions on taking snapshots, see the vSphere Client online help. If you ever need to revert to this snapshot and if you have other View Connection Server instances in a replicated group, you must uninstall those instances before you revert the master to the snapshot. After you revert, you can reinstall the replicated instances and point to the instance you reverted.

  You can label the snapshot Upgrade Preparation Phase.

- Open View Administrator and document all the global settings and settings for desktops and pools. For example, take a screen shot of the applicable settings. If you have multiple instances of View Connection Server in a replicated group, you need only document the settings for one instance.

Version	Location
View 4.0.x	Desktop and Pools View and the Global Settings section of the Configuration View
View 4.5 or 4.6	Pools section and Desktops section in the Inventory tree, and the Global Settings section in the View Configuration tree

- Use the vdmexport.exe utility to back up the View 4.0.x, 4.5.x, or 4.6.x LDAP database.

For instructions, see the administration guide for your current version of VMware View: the *View Manager 4 Administration Guide*, the *VMware View 4.5 Administrator's Guide*, or the *VMware View 4.6 Administration* document. If you have multiple instances of View Connection Server in a replicated group, you need only export the data from one instance.

- Document the IP address and system name of the machine on which View Connection Server is installed.

- Determine if your company has written any batch files or scripts that run against the View database on the View Connection Server instance, and if so, document their names and locations.

- If you use load balancers for View Connection Server, document the configuration settings for the load balancers.

Preparing vCenter Server and View Composer for an Upgrade

Because vCenter Server and View Composer are installed on the same virtual or physical machine, some preparation tasks apply to both.

Preparing for Upgrades That Include vSphere

If you are upgrading to vCenter Server 5.0 in addition to upgrading to VMware View 5.0 with View Composer 2.7, you must consult the *vSphere Upgrade Guide* and perform the following tasks in the following order:

1 Verify that the virtual or physical machine meets the system requirements for vCenter Server 5.0.

   For example, vCenter Server 5.0 requires two CPUs and must run on a 64-bit operating system. Because View Composer 2.0.x was supported only on 32-bit operating systems, upgrading to vSphere 5.0 can mean that you must upgrade View Composer to a different machine.

2 If vCenter Server is installed in a virtual machine, take a snapshot of the virtual machine.

   For instructions on taking snapshots, see the vSphere Client online help.

3 If the computer name is longer than 15 characters, shorten the name to 15 or fewer characters.

   You use this name first on the 32-bit vCenter Server 4.0 host, and then you use this name when you migrate to the 64-bit vCenter Server 5.0 host. You can use the same IP address.

4 Back up the vCenter Server database and the View Composer database.

   For instructions on performing a database backup, see the documentation from your database vendor.

5 Verify that the database server is compatible with vCenter Server 5.0.

   For example, if the database server is Oracle 9i, you must upgrade to Oracle 10g or 11g. If you plan to migrate vCenter Server from a 32-bit operating system to a 64-bit operating system and the database will be on the same system, verify that the database is supported on 64-bit operating systems.

6 Verify that the database is compatible with View Composer 2.7.

   View Composer supports a subset of the database servers that vCenter Server supports. If you are already using vCenter Server with a database server that is not supported by View Composer, continue to use that database server for vCenter Server and install a separate database server to use for View Composer and View Manager database events.

7 Make a copy of the folder that contains SSL certificates.

   This folder is located at `%ALLUSERSPROFILE%\Application Data\VMware\VMware VirtualCenter`.

8 Document the IP address and system name of the machine on which vCenter Server is installed.

9   For all linked-clone desktop pools, disable provisioning of new virtual machines.

Because View Composer might be upgraded during a different maintenance window than its desktop pools, provisioning must be postponed until both components are upgraded.

10   If any desktop pools are set to refresh the OS disk on logoff, edit the **Desktop/Pools** settings for that pool and set **Refresh OS disk on logoff** to **Never**.

This setting prevents an error from occurring when the newly upgraded View Composer attempts to refresh a desktop that has not yet been upgraded to View Agent 5.0.

11   If any desktop pools are scheduled to do a refresh or recompose operation, cancel these tasks.

Preparing for Upgrades of View Composer Only

If you are upgrading only View Composer and are not upgrading VirtualCenter Server, you must perform the following tasks:

1   If View Composer is installed in a virtual machine, take a snapshot of the virtual machine.

For instructions on taking snapshots, see the vSphere Client online help.

2   Back up the vCenter Server database and the View Composer database.

For instructions on performing a database backup, see the documentation from your database vendor.

3   Verify that the database is compatible with View Composer 2.7.

View Composer supports a subset of the database servers that vCenter Server supports. If you are already using vCenter Server with a database server that is not supported by View Composer, continue to use that database server for vCenter Server and install a separate database server to use for View Composer and View Manager database events.

4   Make a copy of the folder that contains SSL certificates.

This folder is located at `%ALLUSERSPROFILE%\Application Data\VMware\VMware VirtualCenter`.

5   Document the IP address and system name of the machine on which vCenter Server is installed.

6   For all linked-clone desktop pools, disable provisioning of new virtual machines.

Because View Composer might be upgraded during a different maintenance window than its desktop pools, provisioning must be postponed until both components are upgraded.

7   If any desktop pools are set to refresh the OS disk on logoff, edit the **Desktop/Pools** settings for that pool and set **Refresh OS disk on logoff** to **Never**.

This setting prevents an error from occurring when the newly upgraded View Composer attempts to refresh a desktop that has not yet been upgraded to View Agent 5.0.

8   If any desktop pools are scheduled to do a refresh or recompose operation, cancel these tasks.

Upgrading VMware View Server Components

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The server components that you must upgrade include View Connection Server, View Client, and View Agent. Depending on the optional components you use, you might also need to upgrade View Composer. If you plan to use View Client with Local Mode, you must also install or upgrade a View Transfer Server instance.

Depending on how large your View deployment is, you might perform the upgrade process incrementally, over several maintenance windows.

For VMware View 5.0 patch releases, see Chapter 8, "Applying VMware View Patches," on page 55.

This chapter includes the following topics:

Upgrade View Connection Servers in a Replicated Group

If you spread the upgrade tasks across multiple maintenance windows, you can verify success or discover issues at each phase of the process. During the first maintenance window, you upgrade all the View Connection Server instances in a group that replicates a View LDAP database.

To use the new features of VMware View 5.0, you must upgrade to VMware View 5.0. For a list of the new features included in View 5.0, see the release notes.

NOTE This procedure describes an in-place upgrade. To migrate to a different machine, see "Upgrade to View Connection Server 5.0 on a Different Machine," on page 27.

Prerequisites

- Determine when to perform this procedure. Choose an available desktop maintenance window. The amount of time the upgrade takes depends on the number of View Connection Server instances in the group. Budget 15 minutes to half an hour for each instance.

- Complete the tasks listed in "Preparing View Connection Server for an Upgrade," on page 21.

- Verify that you have a VMware View license for the new version. VMware View 4.0 and later releases use a new licensing model. The license key has 25 characters. Even if you were not required to purchase an upgrade, you must use a View 4.0 or higher license key.

- Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

- If you are upgrading from View 4.0.x, 4.5.x, or 4.6.x and are unfamiliar with the vdmexport.exe utility, print the instructions for using it from the *View Manager 4 Administration Guide*, the *VMware View 4.5 Administrator's Guide*, or the *VMware View 4.6 Administration* document. You will use this utility to back up the View LDAP database as part of the upgrade procedure.

- If you use security servers, familiarize yourself with the instructions on running the installer to create a security server that uses the new security server pairing mechanism. See the *VMware View 5.0 Installation* document.

- If you do not remember the location of the GPO templates on View Connection Server, see the section about Group Policy Objects in the *View Manager Administration Guide*, for View 4.0.x, the *VMware View 4.5 Administrator's Guide*, or the *VMware View 4.6 Administration* document. You must copy these templates as part of the upgrade procedure.

You do not need to make any changes to the configuration of existing load balancers.

Procedure

1 Stop the service called VMware View Connection Server service on all View Connection Server instances in the group.

   View LDAP database corruption can occur if you upgrade a View Connection Server instance while other instances in the same group are running.

   Do not stop the VMwareVDMDS service. The VMwareVDMDS service must be running so that the View LDAP database can be upgraded.

2 On the host of one of the View Connection Server instances in the group, run the installer for the VMware View 5.0 Connection Server.

   The installer determines that an older version is already installed and performs an upgrade. The installer displays fewer installation options than during a fresh installation.

   The View LDAP is also upgraded.

3 Verify that the VMware View Connection Server service restarts after the installer wizard closes.

4 Verify that you can log in to View Connection Server, and click **About** in View Administrator to verify that the new version is being used.

5 Go to **View Configuration > Product Licensing and Usage**, click **Edit License**, enter the View Manager license key, and click **OK**.

6 Verify that you can log in to a View desktop.

7 Stop the View Connection Server service again.

8 Repeat Step 1 through Step 7 to upgrade each View Connection Server instance in the group.

9 After all servers in the group are upgraded, start the View Connection Server service on all of them.

10 Use the vdmexport.exe utility to back up the newly upgraded View LDAP database.

   If you have multiple instances of View Connection Server in a replicated group, you need only export the data from one instance.

11 On one of the upgraded View Connection Server instances, copy the GPO templates and load them into Active Directory.

12 Repeat Step 1 through Step 7 to upgrade each security server.

   This release of VMware View includes a security server pairing mechanism.

13   If you use security servers, in View Administrator, go to **View Configuration > Servers** and remove any duplicate security servers from the list.

The new automated security server pairing mechanism can produce duplicate entries in the **Security Servers** list if the full system name does not match the name that was assigned when the security server was originally created.

View Connection Server instances are upgraded and are backward-compatible with existing View 4.0.x, View 4.5.x, and View 4.6 View Clients and with desktop sources that have View 4.0.x, 4.5.x, or 4.6.x View Agent installed.

View desktops that were called individual desktops in View 4.0.x deployments are added to manual pools in View 5.0. In the case of individual desktops, the manual pool contains only one desktop.

What to do next

If the upgrade fails on one or more of the View Connection Server instances, see "Create a Replicated Group After Reverting View Connection Server to a Snapshot," on page 28.

If you are upgrading from View 4.0.x or earlier and the upgrade is successful, install and configure the event database. For instructions, see the *VMware View Installation* document. If you are upgrading from View 4.5.x or 4.6.x, you probably installed the event database when you installed View 4.5.x or 4.6.x. The event database does not require an upgrade for View 5.0.

Upgrade the other View server components. If you use View Composer, see "Upgrade View Composer Only," on page 31 or "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35. If you use VMware View with Local Mode, see "Upgrade View Transfer Server," on page 29.

If you ever reinstall View Connection Server on a Windows Server 2008 operating system and you have a data collector set configured to monitor performance data, stop the data collector set and start it again.

Upgrade to View Connection Server 5.0 on a Different Machine

As part of your upgrade, you can migrate View Connection Server to a new machine. For example, you might want to move View Connection Server from a 32-bit Windows 2003 Server machine to a 64-bit Windows 2008 Server machine. View Connection Server on a 64-bit machine can service twice as many endpoints as a 32-bit machine.

Prerequisites

■   Upgrade at least one existing View Connection Server instance to View 5.0. See "Upgrade View Connection Servers in a Replicated Group," on page 25. During this upgrade, your existing View LDAP will be upgraded.

■   Verify that the new physical or virtual machine meets the system requirements for installing View Connection Server. See "Supported Operating Systems for View Connection Server," on page 12 and "Hardware Requirements for View Connection Server," on page 11.

■   Determine when to perform this procedure. Choose an available desktop maintenance window. Budget 15 minutes to half an hour for each instance.

■   Verify that you have a domain user account with administrative privileges on the host you will use to run the installer.

■   Familiarize yourself with the procedure for installing a replicated instance. See the *VMware View Installation* document. You install a replicated instance as part of this procedure.

You do not need to make any changes to the configuration of existing load balancers.

Procedure

1   Verify that an upgraded instance of View Connection Server is running and is accessible to the new machine where you plan to install View Connection Server.

When you install View Connection Server on the new host, you will point to this existing instance.

2   On the new machine, install a replicated instance of View Connection Server.

The View LDAP on the new instance will replicate that of the upgraded source instance.

3   If applicable, uninstall View Connection Server from the old host by using the Windows **Add/Remove Programs** utility.

4   In View Administrator, go to **View Configuration > Servers** and determine whether the View Connection Server instance that was uninstalled still appears in the list.

5   If the uninstalled View Connection Server instance still appears in the list, use a `vdmadmin` command to remove it.

    `vdmadmin.exe –S –s` *`server_name`* `–r`

In this example, *server_name* is the host name or IP address of the View Connection Server host. For more information about the `vdmadmin` command-line tool, see the *VMware View Administration* document.

A new instance of View Connection Server is added to a group and an old instance is removed.

What to do next

If you are upgrading from View 4.0.x or earlier and the upgrade is successful, install and configure the event database. For instructions, see the *VMware View Installation* document. If you are upgrading from View 4.5.x or 4.6.x, you probably installed the event database when you installed View 4.5.x or 4.6.x. The event database does not require an upgrade for View 5.0.

Upgrade the other View server components. If you use View Composer, see "Upgrade View Composer Only," on page 31 or "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35. If you use VMware View with Local Mode, see "Upgrade View Transfer Server," on page 29.

If you ever reinstall View Connection Server on a Windows Server 2008 operating system and you have a data collector set configured to monitor performance data, stop the data collector set and start it again.

Create a Replicated Group After Reverting View Connection Server to a Snapshot

If an upgrade fails, or if for some other reason, you must revert a virtual machine that hosts View Connection Server to a snapshot, you must uninstall the other View Connection Server instances in the group and recreate the replicated group.

If you revert one View Connection Server virtual machine to a snapshot, the View LDAP objects in the database of that virtual machine are no longer consistent with the View LDAP objects in the databases of the other replicated instances. After you revert to a snapshot, the following event is logged in the Windows Event log, in the VMwareVDMDS Event log (Event ID 2103): `The Active Directory Lightweight Directory Services database has been restored using an unsupported restoration procedure.` The reverted virtual machine stops replicating its View LDAP.

If you find it necessary to revert to a snapshot, you must uninstall other View Connection Server instances and uninstall the View LDAP on those virtual machines and then reinstall replica instances.

Prerequisites

Determine which View Connection Server instance is to be the new standard, or master, View Connection Server. This Connection Server has the desired View configuration data.

Procedure

1   On all View Connection Server instances except the one chosen to be the new standard
    View Connection Server instance, uninstall View Connection Server and the View LDAP instance.

    If the operating system on the virtual machine is Windows Server 2003, the View LDAP instance is called
    ADAM Instance VMwareVDMDS. If the operating system is Windows Server 2008, the View LDAP
    instance is called AD LDS Instance VMwareVDMDS.

2   On the virtual machine that hosts the standard, or master, View Connection Server instance, open a
    command prompt and enter the following command to ensure that replication is not disabled.

    ```
    repadmin /options localhost:389 –DISABLE_OUTBOUND_REPL –DISABLE_INBOUND_REPL
    ```

3   On the virtual machines that are to host the replica View Connection Server instances, run the
    View Connection Server installer, select the **View Replica Server** installation option, and specify the host
    name or IP address of the standard View Connection Server instance.

The replicated group of View Connection Server instances is recreated and their View LDAP objects are
consistent.

Upgrade View Transfer Server

The View Transfer Server component was added in View 4.5. View Transfer Server is an optional View
Manager component that supports check in, check out, and replication of desktops that run in local mode.

NOTE   This procedure describes an in-place upgrade. To migrate to a different machine, see "Upgrade to View
Transfer Server 5.0 on a Different Machine," on page 30.

Prerequisites

■   Verify that you have local administrator privileges on the Windows Server that you will use to run the
    installer and perform the upgrade.

■   Verify that the virtual machine on which the current View Transfer Server instance is installed meets the
    system requirements for View 5.0.

    See "Supported Operating Systems for View Transfer Server," on page 14.

■   If the View Transfer Server instance uses a local file system for its Transfer Server Repository, back up the
    Transfer Server Repository directory.

Procedure

1   Put the View Transfer Server into maintenance mode.

    a   In View Administrator, go to **View Configuration > Servers**, select the View Transfer Server, and
        click **Enter Maintenance Mode**.

    b   Wait until the status changes to Maintenance.

        The status remains in Maintenance Pending until all active transfers are complete.

2   On the virtual machine that hosts the View Transfer Server instance, run the installer for the VMware
    View 5.0 Transfer Server.

    The installer determines that an older version is already installed and performs an upgrade. The installer
    displays fewer installation options than during a fresh installation.

3   Verify that the VMware View Transfer Server service restarts after the installer wizard closes.

4   In View Administrator, go to **View Configuration > Servers**, select the View Transfer Server, and click
    Exit Maintenance Mode.

What to do next

If you use View Composer, see "Upgrade View Composer Only," on page 31 or "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35. If you have finished upgrading View server components, at your next maintenance window, continue with the VMware View upgrade.

- If you are also upgrading vSphere components, see Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

- If you upgrading only View components, see "Upgrade View Agent," on page 47.

Upgrade to View Transfer Server 5.0 on a Different Machine

As part of your upgrade, you can migrate View Transfer Server to a new machine. For example, you might want to move View Transfer Server from a 32-bit Windows 2003 Server machine to a 64-bit Windows 2008 Server machine.

Prerequisites

- Verify that the new virtual machine meets the system requirements for installing View Transfer Server. See "View Transfer Server Requirements," on page 13.

- Determine when to perform this procedure. Choose an available desktop maintenance window. Budget 15 minutes to half an hour for each instance.

- Verify that you have local administrator privileges on the Windows Server that you will use to run the installer.

- If the original View Transfer Server instance used a network share for its Transfer Server Repository, document the path to the directory on the network share.

  In View Administrator, go to **View Configuration > Transfer Server Repository**.

- Familiarize yourself with the procedure for installing and configuring View Transfer Server. See the *VMware View Installation* document.

- If the original View Transfer Server instance used a local file system for its Transfer Server Repository, familiarize yourself with the instructions for migrating the Transfer Server Repository to a new location. See the *VMware View Administration* document.

Procedure

1 On the new virtual machine, install View Transfer Server.

2 In View Administrator, add the new View Transfer Server instance.

   Go to **View Configuration > Servers**.

3 If you have a Transfer Server Repository located on a network share, verify that this new View Transfer Server can access the Transfer Server Repository on the network share.

4 If you have a Transfer Server Repository located on the local file system of the original View Transfer Server, migrate the repository to a new location.

5 In View Administrator, remove the original View Transfer Server instance.

6 If applicable, uninstall View Transfer Server from the old host by using the Windows **Add/Remove Programs** utility.

What to do next

If you use View Composer, see "Upgrade View Composer Only," on page 31 or "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35. If you have finished upgrading View server components, at your next maintenance window, continue with the VMware View upgrade.

- If you are also upgrading vSphere components, see Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

- If you upgrading only View components, see "Upgrade View Agent," on page 47.

Upgrade View Composer Only

During the first maintenance window, after you upgrade View Connection Server, you can also upgrade View Composer, which is hosted on the same virtual or physical machine as vCenter Server.

This procedure provides an overview of the tasks you must perform during the first maintenance window. To complete some of these tasks, you might need step-by-step instructions found in other documents.

Prerequisites

- Determine when to perform this procedure. Choose an available desktop maintenance window. For information about how much time is required, see the *vSphere Upgrade Guide*.

- Complete the tasks listed in "Preparing for Upgrades of View Composer Only," on page 23.

- Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

- If you are upgrading from View Composer 1.0, which is included with VMware View 3.0, determine whether to let the installer wizard upgrade the View Composer database. You can choose to run the SviConfig command-line utility after the wizard finishes to upgrade the database manually and to create a log of the upgrade.

NOTE   Upgrading directly from View Composer 1.0 to View Composer 2.7 is not supported. This information is provided only to point out the product behavior that occurs if a database schema upgrade is required.

Procedure

1   Upgrade View Composer instances.

   a   On the virtual or physical machines where View Composer is installed, download and run the installer for View Composer 2.7, which is the version included with VMware View 5.0.

      You can download the installer from the VMware Web site.

   b   If you are upgrading from View Composer 1.0, when a prompt asks whether you want the wizard to upgrade the database, specify whether you do want the wizard to upgrade the database.

      If you are upgrading from View Composer 1.1 or higher, no database schema upgrade is required and no prompt appears.

      If a dialog box appears with the message "Database upgrade completed with warnings" you can click **OK** and safely ignore the message.

   c   When the wizard prompts you for the View Composer port number, verify that the port number is set to 18443.

      The upgrade changes the port number, which was previously 8443, to 18443 because vCenter Server 4 and later releases require port 8443.

   Step-by-step instructions for running the installer appear in the *VMware View Installation* document.

2   In to View Administrator verify or, if necessary, change the port number used for View Composer.

    a   Edit the configuration for the vCenter Server instance and make sure that the View Composer port is set to `18443`.

       The port number must match the port number specified during the View Composer upgrade.

    b   Supply the vCenter Server password.

    c   Select the **Enable View Composer** check box and click **OK**.

3   Upgrade the View Agent on a parent virtual machine and create a desktop pool for testing purposes.

    a   Download and run the View 5.0 View Agent installer on a parent virtual machine.

       You can download the installer from the VMware Web site.

    b   Create a small linked-clone desktop pool from this virtual machine.

    c   Test a virtual desktop from the desktop pool to verify that all the usage scenarios function properly.

       For example, create a desktop pool that contains one virtual desktop, and verify that you can use View Client to log in to that desktop.

       Do not upgrade View Agent on any other desktop sources.

    Step-by-step instructions for running the View Agent installer and creating desktop pools appear in the *VMware View Administration* document, available by clicking the **Help** button in View Administrator.

4   Verify that virtual desktops from the test desktop pool work as expected.

View Composer instances are upgraded and are backward-compatible with existing View 4.0.x, 4.5.x, or 4.6.x View Clients and with desktop sources that have the View 4.0.x, 4.5.x, or 4.6.x Agent installed.

What to do next

At your next maintenance window, continue with the VMware View upgrade. See "Upgrade View Agent," on page 47.

Manually Upgrading the View Composer Database

Rather than letting the View Composer installer upgrade the database when a schema update is required, you can manually upgrade the database. You can use the `SviConfig` utility when you must observe the upgrade process more closely or when upgrade tasks must be distributed to IT administrators with different responsibilities.

When you upgrade View Composer to a version with an updated database schema, an installer prompt asks if you want the wizard to upgrade the database. If you choose not to use the installer wizard, you must use the `SviConfig` utility to upgrade the database and migrate the existing data.

If you are upgrading from View Composer 1.1, which is included with VMware View 3.1, or a higher version, the prompt does not appear.

Using the `SviConfig` command-line utility has the following advantages:

- This utility returns result codes and creates a log of the database upgrade to simplify troubleshooting if the upgrade fails.

- You can separate the upgrade tasks. A vSphere or View Manager administrator can run the View Composer installer to upgrade the software. A database administrator (DBA) can use `SviConfig` to upgrade the View Composer database.

- The software upgrade and the database upgrade can occur during different maintenance windows. For example, your site might run database-maintenance operations on weekends only, whereas software-maintenance tasks can occur during the week.

Run SviConfig to Manually Upgrade the Database

With the SviConfig command-line utility, you can upgrade the View Composer database separately from the View Composer software. This utility also creates a log file to simplify troubleshooting if the upgrade fails.

No database schema changes have been made between View Composer 2.0.x, 2.5.x, or 2.6.x and View Composer 2.7. If you are upgrading from one of these releases, you do not need to perform this procedure.

IMPORTANT   Only experienced View Composer administrators should use the SviConfig utility. This utility is intended to resolve issues relating to the View Composer service.

Prerequisites

Back up the View Composer database. For instructions, see the documentation for your database server.

Procedure

1   On the vCenter Server virtual or physical machine, open a Windows command prompt and navigate to the SviConfig executable file.

The file is located with the View Composer application.

Option	Action
32-bit Windows	Navigate to C:\Program Files\VMware\VMware View Composer\sviconfig.exe.
64-bit Windows	Navigate to C:\Program Files (86)\VMware\VMware View Composer\sviconfig.exe.

2   Enter the command to stop the VMware View Composer service.

net stop svid

3   Run the SviConfig databaseupgrade command.

```
sviconfig –operation=databaseupgrade
              –DsnName=<target database source name (DSN)>
              –Username=<database administrator username>
              –Password=<database administrator password>
```

For example:

```
sviconfig –operation=databaseupgrade –dsnname=LinkedClone
–username=Admin –password=Pass
```

A successful operation displays output that shows the upgrade steps.

```
Establishing database connection.
Database connection established successfully.
Upgrading database.
Load data from SVI_VC_CONFIG_ENTRY table.
Update SVI_DEPLOYMENT_GROUP table.
Update SVI_REPLICA table.
Update SVI_SIM_CLONE table.
SviConfig finished successfully.
Database is upgraded successfully.
```

4   Enter the command to start the VMware View Composer service.

net start svid

A complete log of the upgrade process is created.

Option	Description
Windows Server 2003	C:\Documents and Settings\All Users\Application Data\VMware\View Composer\Logs\vmware-sviconfig.log
Windows Server 2008	C:\Users\All Users\VMware\View Composer\vmware-sviconfig.log

What to do next

If the database upgrade fails, see "Troubleshooting a View Composer Database Upgrade Failure," on page 34.

If the result code is any number other than 0, which means success, see "Result Codes for a Manual Database Schema Update," on page 34.

Result Codes for a Manual Database Schema Update

When you manually upgrade the View Composer database, the sviconfig databaseupgrade command displays a result code.

Table 5-1 shows the sviconfig databaseupgrade result codes.

Table 5-1. Result Codes for the databaseupgrade Command

Code	Description
0	The operation ended successfully.
1	The supplied DSN could not be found.
2	Invalid database administrator credentials were provided.
3	The driver for the database is not supported.
4	An unexpected problem arose and the command failed to complete.
14	Another application is using the View Composer service. Shut down the service before executing the command.
15	A problem arose during the restore process. Details are provided in the onscreen log output.
17	Unable to upgrade the database data.
18	Unable to connect to the database server.

Troubleshooting a View Composer Database Upgrade Failure

When you upgrade the View Composer service with the View Composer installer or run the SviConfig databaseupgrade command, the operation might fail to upgrade the View Composer database.

Problem

The SviConfig databaseupgrade operation displays error code 17, or the View Composer installer displays a warning message.

Database upgrade completed with warnings

Cause

The database-upgrade software contacts vCenter Server to get additional data about desktops. The database upgrade might fail if the desktops are not available, the ESX host is not running, or vCenter Server is not available.

Solution

1   See the View Composer `SviConfig` log file for more information.

Option	Action
Windows Server 2003	Navigate to `C:\Documents and Settings\All Users\Application Data\VMware\View Composer\Logs\vmware–sviconfig.log`.
Windows Server 2008	Navigate to `C:\Users\All Users\VMware\View Composer\vmware–sviconfig.log`.

The upgrade script logs a message for each failure.

2   Examine the log records to identify the desktops that failed to upgrade.

Option	Action
The desktop exists but is unavailable.	Make the desktop available again. Depending on the cause of the failure, you might have to restart the ESX host or vCenter Server, or take another action.
The desktop does not exist.	Ignore the log message. Note A deleted desktop might appear to exist in View Manager if an administrator deletes the desktop virtual machine directly in vSphere.

3   Run the `SviConfig databaseupgrade` command again.

Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine

During the first maintenance window, after you upgrade View Connection Server, you can also upgrade View Composer and vCenter Server, which are hosted on the same virtual or physical machine.

> ⚠ **CAUTION**   When you migrate View Composer and vCenter Server to a new machine, you can use the same host name and IP address on the new machine, or you can change the host name, the IP address, or both.

If you change the host name or IP address, however, you might not be able to recompose View Composer desktop pools, even after you upgrade the parent virtual machine to View 5.0 Agent. Change the vCenter Server host name or IP address only if you are willing to recreate View Composer desktop pools after the upgrade.

Prepare the Source Machine for View Composer Migration

For vSphere 4.1.x and 5.0.x, vCenter Server is supported only on 64-bit Windows operating systems. If your current vCenter Server and View Composer server are installed on a 32-bit Windows machine, you need to move to a 64-bit Windows machine as part of the upgrade.

You upgrade View Composer to 2.6 on the source computer first and if necessary also upgrade VirtualCenter Server to vCenter Server 4.0. You then migrate View Composer 2.6 and vCenter Server 4.0 to the destination computer. After making sure that everything is working on the destination computer, you upgrade to View Composer 2.7 and vCenter Server 5.0.

This procedure provides an overview of the tasks you must perform during the first maintenance window. To complete some of these tasks, you might need step-by-step instructions found in other documents.

Prerequisites

■ Determine when to perform this procedure. Choose an available desktop maintenance window. For information about how much time is required, see the *vSphere Upgrade Guide*.

■ Complete the tasks listed in "Preparing for Upgrades That Include vSphere," on page 22. These tasks include backing up the View Composer database and the vCenter Server database and making a copy of the SSL certificate folder located at `%ALLUSERSPROFILE%\Application Data\VMware\VMware VirtualCenter`.

■ Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

■ Verify that you have the correct license keys for vSphere if you are upgrading Virtual Infrastructure components to vSphere.

■ If you are currently using VirtualCenter Server 2.5, download and print a copy of the *vSphere 4.0 Upgrade Guide*. You must upgrade to vCenter Server 4.0 before upgrading to vCenter Server 5.0.

■ Determine whether to use the vSphere 5.0 data migration tool to perform the vCenter Server migration. This tool is described in the chapter about upgrading to vCenter Server on a different machine and upgrading the existing database, in the *vSphere Upgrade Guide*.

Procedure

1 On the existing virtual or physical machine where vCenter Server and View Composer are installed, download and run the installer for View Composer 2.6, which is the version included with VMware View 4.6.

    a Download the installer from the VMware Web site.

    b When the wizard prompts for the View Composer port number, verify that the port number is set to `18443`.

       If you are upgrading from View Composer 1.1, the upgrade changes the port number, which was previously `8443`, to `18443` because vCenter Server 4 requires port `8443`.

    Step-by-step instructions for running the installer appear in the *VMware View 4.6 Installation* document.

2 If you are running VirtualCenter Server 2.5, upgrade VirtualCenter Server to vCenter Server 4.0 Update 2 or later, as described in the *vSphere 4.0 Upgrade Guide*.

    You will complete the upgrade to vCenter Server 5.0 on the destination machine.

3 Use your database tools to make new backups of the vCenter Server database and the View Composer database.

4 If you upgraded vCenter Server, restart the View Composer service.

5 In View Administrator verify the port number used for View Composer.

    a Edit the configuration for the vCenter Server and if necessary, change the View Composer port to `18443`.

       The port number must match the port number specified during the View Composer upgrade.

    b Supply the vCenter Server password.

    c Select the **Enable View Composer** check box and click **OK**.

6 Verify that View Composer is working correctly by creating a test pool.

7   Migrate the RSA key container used by View Composer.

    a   On the source machine, open a command prompt and change directories to the directory where the `aspnet_regiis` program is located.

        `cd %windir%\Microsoft.NET\Framework\v2.0.`*`xxxxx`*

        You might have several copies of the `aspnet_regiis` program on the computer. Use the one in the `v2.0.`*`xxxxx`* directory.

    b   Type the `aspnet_regiis` command to save the RSA key pair in a local file.

        `aspnet_regiis –px "SviKeyContainer" "keys.xml" –pri`

        This command exports the RSA public-private key pair from the SviKeyContainer container to a `keys.xml` file.

    c   Copy the `keys.xml` file to the destination machine.

8   On the source machine, stop the VMware VirtualCenter Server service and the VMware View Composer service.

9   If you plan to use the same name and IP address on the new, destination machine, change the host name and IP address of the source machine so that you can use the original name and IP address on the destination machine.

10   If you want to use the vSphere 5.0 data migration tool, run that tool as described in the chapter about upgrading to vCenter Server on a different machine and upgrading the existing database, in the *vSphere 5.0 Upgrade Guide*.

What to do next

If you plan to use the vSphere 5.0 data migration tool, complete the tasks for backing up and restoring the vCenter Server database and creating a 64-bit data source name (DSN), as described in the chapter about upgrading to vCenter Server on a different machine and upgrading the existing database, in the *vSphere 5.0 Upgrade Guide*. Next, perform the procedure described in "Use the Data Migration Tool to Migrate to the New Machine," on page 37.

If you do not plan to use the vSphere 5.0 data migration tool, perform the procedure described in "Manually Migrate View Composer to the New Machine," on page 39.

Use the Data Migration Tool to Migrate to the New Machine

After you prepare the source machine for migration, you can use the vCenter Server data migration tool to simplify moving vCenter Server to the destination machine.

This procedure provides an overview of the tasks you must perform if you are using the vCenter Server data migration tool. To complete some of these tasks, you must have the step-by-step instructions found in the *vSphere 5.0 Upgrade Guide* and the *VMware View Installation* document.

⚠️ **CAUTION**   During this procedure, if you change the host name or IP address of the machine that hosts vCenter Server and View Composer, you might not be able to recompose persistent View Composer desktop pools, even after you upgrade the parent virtual machine to View 5.0 Agent. Change the vCenter Server host name or IP address only if you are willing to recreate View Composer desktop pools after the upgrade.

Prerequisites

■   Complete the required tasks on the source machine. See "Prepare the Source Machine for View Composer Migration," on page 35.

■   Verify that the Microsoft .NET Framework and the ASP.NET IIS registration tool are installed on the source and destination computers. See the topic in the *VMware View Administration* document about preparing a Microsoft .NET Framework for migrating RSA keys.

■ Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

■ Verify that you have the correct license keys for vSphere if you are upgrading Virtual Infrastructure components to vSphere.

Procedure

1   On the new, destination machine, set the host name and IP address.

You can set the host name and IP address to the name and IP address originally used on the source machine, or you can use a new host name, IP address, or both.

2   Migrate the RSA key container used by View Composer.

a   On the destination machine, open a command prompt and change directories to the directory where the `aspnet_regiis` program is located.

`cd %windir%\Microsoft.NET\Framework\v2.0.xxxxx`

You might have several copies of the `aspnet_regiis` program on the computer. Use the one in the `v2.0.xxxxx` directory.

b   Use the `aspnet_regiis` command to import the RSA key pair.

`aspnet_regiis –pi "SviKeyContainer" "path\keys.xml"`

In this command, `path\keys.xml` is the complete path to the `keys.xml`file.

The tool imports the key pair data into the local key container.

3   Perform the task described in the section about restoring the vCenter Server configuration and installing vCenter Server on the new machine, in the *vSphere 5.0 Upgrade Guide*.

The data migration tool migrates the bundled SQL Server 2005 Express database server, if you use one, and creates a 64-bit DSN for it. If you use a different database, this procedure provides instructions for upgrading it. This procedure also copies the SSL certificate folder to the new machine.

The data migration tool does not restore the View Composer database or create a DSN for it.

4   If you use a local database server, use your vendor's database tools to restore or attach the vCenter Server database and the View Composer database.

5   Create a 64-bit domain server name (DSN) for vCenter Server and a 64-bit DSN for View Composer.

For instructions, see the *vSphere Upgrades* document and the *VMware View Installation* document.

6   Download and run the installer for the version of View Composer that is included with this release of VMware View.

You can download the installer from the VMware Web site.

7   Verify that the View Composer service starts after the installer wizard finishes.

8   If you changed the host name or IP address of the destination machine, on the machine that hosts View Connection Server, log in to View Administrator and update the configuration settings for vCenter Server.

a   Edit the vCenter Server settings so that the server address uses the correct host name.

If you changed the host name, enter the new name. You can enter an IP address in this field, but using a host name is recommended.

b   Supply the vCenter Server password.

   c   Deselect the **Enable View Composer** check box and click **OK**.

          You apply the new vCenter Server settings before you enable View Composer.

   d   After a few moments, edit the vCenter Server settings again to select **Enable View Composer** and click **OK**.

View Composer and vCenter Server instances are upgraded and are backward-compatible with existing View 4.0.x, 4.5.x, and 4.6.x View Clients and with desktop sources that have the View 4.0.x, 4.5.x, or 4.6.x Agent installed.

What to do next

Create a test desktop pool and verify that virtual desktops from the test pool work as expected.

If you upgraded vCenter Server, perform the post-upgrade tasks described in the *vSphere Upgrade Guide*.

At your next maintenance window, continue with the VMware View upgrade. See Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

Manually Migrate View Composer to the New Machine

After you prepare the source machine for migration, you must perform certain tasks on the destination machine. If you do not use the vCenter Server data migration tool, you can perform the required tasks manually.

Some of the steps in this procedure would be performed automatically if you use the vCenter Server data migration tool. You might choose not to use the tool if you want to perform the upgrade incrementally so that you can verify at every step that the upgrade is successful. To use the data migration tool instead of performing this procedure, see "Use the Data Migration Tool to Migrate to the New Machine," on page 37.

> ⚠️ **CAUTION** During this procedure, if you change the host name or IP address of the machine that hosts vCenter Server and View Composer, you might not be able to recompose View Composer desktop pools, even after you upgrade the parent virtual machine to View 5.0 Agent. Change the vCenter Server host name or IP address only if you are willing to recreate View Composer desktop pools after the upgrade.

Prerequisites

■ Complete the required tasks on the source machine. See "Prepare the Source Machine for View Composer Migration," on page 35.

■ Verify that the Microsoft .NET Framework and the ASP.NET IIS registration tool are installed on the source and destination computers. See the topic in the *VMware View Administration* document about preparing a Microsoft .NET Framework for migrating RSA keys.

■ Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

■ Verify that you have the correct license keys for vSphere if you are upgrading Virtual Infrastructure components to vSphere.

■ Print or have available the *vSphere 4.0 Upgrade Guide* and the *vSphere 5.0 Upgrade Guide*.

Procedure

1   On the new, destination machine, set the host name and IP address.

     You can set the host name and IP address to the name and IP address originally used on the source machine, or you can use a new host name, IP address, or both.

2　Migrate the RSA key container used by View Composer.

    a　On the destination machine, open a command prompt and change directories to the directory where the `aspnet_regiis` program is located.

```
cd %windir%\Microsoft.NET\Framework\v2.0.xxxxx
```

       You might have several copies of the `aspnet_regiis` program on the computer. Use the one in the `v2.0.xxxxx` directory.

    b　Use the `aspnet_regiis` command to import the RSA key pair.

```
aspnet_regiis –pi "SviKeyContainer" "path\keys.xml"
```

       In this command, *path*\keys.xml is the complete path to the keys.xmlfile.

       The tool imports the key pair data into the local key container.

3　Copy the SSL certificate folder to the destination machine.

Option	Action
Windows 2003 Server	Copy the folder to `%ALLUSERSPROFILE%\Application Data\VMware\VMware VirtualCenter.`
Windows 2008 Server	Copy the folder to `%ALLUSERSPROFILE%\VMware\VMware VirtualCenter.`

4　If you use a local database server, use your vendor's database tools to restore or attach the vCenter Server database and the View Composer database.

5　Create a 32-bit DSN for the vCenter Server 4.0 database.

For more information, see the topic about creating a 32-bit DSN on a 64-bit operating system in the *vSphere 4.0 Upgrade Guide*.

You need this 32-bit DSN if you install vCenter Server 4.0 rather than 5.0 on the destination machine. The data migration tool installs vCenter Server 5.0 on the destination machine.

6　Create a 64-bit domain server name (DSN) for vCenter Server and a 64-bit DSN for View Composer.

For instructions, see the *vSphere Upgrades* document and the *VMware View Installation* document.

7　Install vCenter Server 4.0 Update 2 or later.

For instructions, see the *vSphere 4.0 Upgrade Guide*. In the installer wizard, you will select the 32-bit DNS that you created earlier.

8　Download and run the installer for the version of View Composer that is included with this release of VMware View.

You can download the installer from the VMware Web site.

9　Create a test desktop pool and verify that virtual desktops from the test pool work as expected.

10　Upgrade vCenter Server 4.0 to 5.0, as described in the chapter about upgrading to vCenter Server 5.0, in the *vSphere 5.0 Upgrade Guide*.

11　Restart the View Composer service.

12　If you changed the host name or IP address of the destination machine, log in to View Administrator and update the configuration settings for vCenter Server.

    a　Edit the vCenter Server settings so that the server address uses the correct host name.

       If you changed the host name, enter the new name. You can enter an IP address in this field, but using a host name is recommended.

    b　Supply the vCenter Server password.

c   Deselect the **Enable View Composer** check box and click **OK**.

You apply the new vCenter Server settings before you enable View Composer.

d   After a few moments, edit the vCenter Server settings again to select **Enable View Composer** and click **OK**.

View Composer and vCenter Server instances are upgraded and are backward-compatible with existing View 4.0.x, 4.5.x, and 4.6.x View Clients and with desktop sources that have the View 4.0.x, 4.5.x, or 4.6.x Agent installed.

What to do next

If you upgraded vCenter Server, perform the post-upgrade tasks described in the *vSphere Upgrade Guide*.

At your next maintenance window, continue with the VMware View upgrade. See Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

Upgrading ESX/ESXi Hosts and Virtual Machines

6

Upgrading ESX/ESXi hosts and virtual machines to vSphere 5.0 is the most time-consuming aspect of this middle phase of a VMware View upgrade.

Upgrading from ESX/ESXi 3.5 involves more steps than upgrading from ESX/ESXi 4.x.

This chapter includes the following topics:

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Upgrade ESX 3.5 Hosts and Their Virtual Machines

Upgrading ESX 3.5 hosts and virtual machines involves upgrading the host, the virtual machine virtual hardware version, and the version of VMware Tools on the virtual machines.

This procedure provides an overview of the tasks you must perform during the second and subsequent maintenance windows. To complete some of these tasks, you might need step-by-step instructions found in the *vSphere Upgrade Guide* and the *VMware View Administrator's Guide*.

Prerequisites

- Complete the procedure described in "Upgrade View Connection Servers in a Replicated Group," on page 25.

- Perform the ESX/ESXi upgrade preparation tasks listed in the *vSphere Upgrade Guide*.

- Verify that you have the correct license key for vSphere if you are upgrading Virtual Infrastructure components to vSphere.

- Verify that all ESX/ESXi hosts are members of a cluster. If you want to upgrade a standalone host, place it in a single-host cluster.

Procedure

1 Upgrade ESX/ESXi hosts to vSphere 5.0, cluster by cluster.

For instructions, see the *vSphere Upgrade Guide*. If you have many clusters, this step could take several maintenance windows to complete. Upgrading ESX/ESXi hosts includes the following tasks:

a Use VMotion to move the virtual machines off of the ESX/ESXi host.

b Put the host into maintenance mode.

c Perform the upgrade.

        d   Use VMotion to move the virtual machines back onto the host.

        e   Perform post-upgrade tasks for ESXi hosts.

        Every host must be a member of a cluster, as mentioned in the prerequisites.

2   If an upgraded host does not reconnect itself to vCenter, use vSphere Client to reconnect the host to the vCenter Server.

3   If you use View Composer, after all ESX/ESXi hosts are upgraded, on the vCenter Server host, restart the View Composer service.

4   On a parent virtual machine, upgrade View Agent to 5.0 and create a test desktop pool.

    This new test desktop pool uses a new View Composer API and as a result, does not create a source linked clone from the replica. If you use vCenter Server to watch the virtual machines being created, you see that a replica is created from the parent, but not a `source–lc` virtual machine.

5   Upgrade VMware Tools and the virtual hardware on all parent virtual machines, virtual machine templates, and virtual machines that host View server components such as View Connection Server instances.

        a   Plan for down time, as described in the *vSphere Upgrade Guide*.

        Each virtual machine must be rebooted three times.

        b   Update VMware Tools, and upgrade the virtual machine hardware to version 8 for virtual machines that will be used for remote View desktops, or upgrade to version 7 for virtual machines that will be used for local mode View desktops.

        To use the Windows 7 3D rendering feature, available with View 5.0, you must upgrade the virtual machine hardware to version 8.

        If you use vSphere Update Manager, you can update VMware Tools and then the virtual hardware version in the correct order for all the virtual machines in a particular folder. See the *vSphere Upgrade Guide*.

6   If you use full-clone desktops, on each virtual machine, upgrade VMware Tools and the virtual hardware to version 7 for local mode View desktops, or upgrade to version 8 for remote View desktops.

    To use the Windows 7 3D rendering feature, available with View 5.0, you must upgrade the virtual machine hardware to version 8.

    If you use vSphere Update Manager you can update VMware Tools and then the virtual hardware version in the correct order for all the virtual machines in a particular folder. See the *vSphere Upgrade Guide*.

What to do next

Upgrade View Agent. See "Upgrade View Agent," on page 47.

Upgrade ESX 4.0.x or 4.1.x Hosts and Their Virtual Machines

Upgrading ESX 4.0.x and 4.1.x hosts and their virtual machines involves fewer steps than upgrading from ESX 3.5.

This procedure provides an overview of the tasks you must perform during the second and subsequent maintenance windows. To complete some of these tasks, you might need step-by-step instructions found in the *vSphere Upgrade Guide* and the *VMware View Administrator's Guide*.

Prerequisites

Perform the following preparation tasks:

■   Complete the procedure described in "Upgrade View Connection Servers in a Replicated Group," on page 25.

■ Perform the ESX/ESXi upgrade preparation tasks listed in the *vSphere Upgrade Guide*.

Procedure

1 Upgrade ESX/ESXi hosts to vSphere 5.0, cluster by cluster.

For instructions, see the *vSphere Upgrade Guide*. If you have many clusters, this step could take several maintenance windows to complete. Upgrading ESX/ESXi hosts includes the following tasks:

a Use VMotion to move the virtual machines off of the ESX/ESXi host.

b Put the host into maintenance mode.

c Perform the upgrade.

d Use VMotion to move the virtual machines back onto the host.

e Perform post-upgrade tasks for ESXi hosts.

Every host must be a member of a cluster, as mentioned in the prerequisites.

2 If an upgraded host does not reconnect itself to vCenter, use vSphere Client to reconnect the host to the vCenter Server.

3 If you use View Composer, after all ESX/ESXi hosts are upgraded, on the vCenter Server host, restart the View Composer service.

4 Upgrade VMware Tools on all parent virtual machines, virtual machine templates, and virtual machines that host View server components such as View Connection Server instances.

a Plan for down time, as described in the *vSphere Upgrade Guide*.

Each virtual machine must be rebooted three times.

b Update VMware Tools, and upgrade the virtual machine hardware to version 8 for virtual machines that will be used for remote View desktops, or upgrade to version 7 for virtual machines that will be used for local mode View desktops.

To use the Windows 7 3D rendering feature, available with View 5.0, you must upgrade the virtual machine hardware to version 8.

If you use vSphere Update Manager, you can update VMware Tools and then the virtual hardware version in the correct order for all the virtual machines in a particular folder. See the *vSphere Upgrade Guide*.

5 If you use full-clone desktops, on each virtual machine, upgrade VMware Tools and the virtual hardware to version 7 for local mode View desktops, or upgrade to version 8 for remote View desktops.

To use the Windows 7 3D rendering feature, available with View 5.0, you must upgrade the virtual machine hardware to version 8.

If you use vSphere Update Manager you can update VMware Tools and then the virtual hardware version in the correct order for all the virtual machines in a particular folder. See the *vSphere Upgrade Guide*.

What to do next

Upgrade View Agent. See "Upgrade View Agent," on page 47.

Upgrading VMware View Desktops and Clients

7

The desktop and client components that you can upgrade include View Client for Windows, View Client for Mac, thin clients provided by VMware partners, and the View Agent, which runs inside the operating systems of View desktops.

This chapter includes the following topics:

Upgrade View Agent

The strategy for upgrading View Agent depends on the type of desktop source.

This procedure provides an overview of the tasks you must perform to upgrade View Agent in a variety of virtual machines used as desktop sources. To complete some of these tasks, you might need the step-by-step instructions found in the vSphere Client online help or in the *VMware View Administration* document, available by clicking the **Help** button in View Administrator.

IMPORTANT   If you are upgrading View Agent from a version earlier than 4.5 and if you have used a group policy object (GPO) to disable Windows firewall, the installer returns one of the following errors and the upgrade is rolled back:

- ` Error 28014. Unable to close the firewall.`
- ` Warning 28013 Unable to open the firewall.`
- ` Internal Error 28051 Shared Access.`

If you encounter error 28014 or warning 28013, you must use a GPO to enable firewall services and run the installer again to upgrade the agent. If you encounter internal error 28051, click **OK** in the error message box to continue the upgrade.

Prerequisites

Perform the following preparation tasks:

- If you are upgrading ESX hosts and virtual machines, complete the procedure described in Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

■ Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

Procedure

1 On parent virtual machines and virtual machine templates, download and run the installer for View Agent 5.0.

You can download the installer from the VMware Web site. Step-by-step instructions for running the View Agent installer appear in the *VMware View Administration* document.

2 Take a snapshot of each upgraded parent virtual machine that you use to create linked-clone desktop pools with View Composer.

You use the new snapshot for recomposing all the virtual machines in the pool.

For instructions on taking snapshots, see the vSphere Client online help.

3 If you use full-clone desktops or other virtual machines that you added as individual desktops or as part of a manual pool, upgrade View Agent by using whatever third-party tools you usually use for software upgrades.

View desktops that were called individual desktops in View 4.0.x deployments are added to manual pools in View 4.5 and later versions. In the case of individual desktops, the manual pool contains only one desktop.

4 For automated and manual Windows 7 pools that are not linked-clone pools, to use the Windows 7 3D rendering feature available with View 5.0, edit the pool and power the virtual machine desktops off and on.

a Configure the following pool settings:

■ Set the pool to use the PCoIP display protocol.

■ Set **Allow users to choose protocol** to **No**.

■ Turn on the **Windows 7 3D Rendering** feature.

b Power off each virtual machine and power it on again.

Restarting a virtual machine, rather than powering off and on, does not cause the setting to take effect.

5 If you use Windows Terminal Servers or physical or blade PCs as desktop sources, download and run the installer for View Agent 5.0 on these physical machines.

You can download the installer from the VMware Web site.

6 Use a View Client that has not been upgraded to verify that you can log in to the upgraded View 5.0 desktop sources with your old View Client software.

What to do next

If you use View Composer desktop pools, recompose or recreate the pools. See "Upgrade View Composer Desktop Pools," on page 49.

Upgrade View Clients. See "Upgrade View Clients," on page 50 and "Upgrade View Local Mode Clients," on page 51.

Upgrade View Composer Desktop Pools

Part of the final phase of a VMware View upgrade includes upgrading View Composer desktop pools.

Upgrading pools that were created with View Composer requires that you use a snapshot taken after upgrading View Agent on the parent virtual machine.

NOTE   If you are also upgrading the virtual hardware version, such as upgrading to virtual hardware version 8, included with vSphere 5, the snapshot of the upgraded parent virtual machine is used to upgrade the virtual hardware version of the rest of the virtual machines in the linked-clone pool. Upgrading in this way, from one virtual hardware version to a higher version, is supported. You cannot, however, recompose linked clones to a lower hardware version than their current version. For example, you cannot recompose hardware version 8 clones to a parent virtual machine that is hardware version 7.

View Agent 4.0.x is not compatible with View Composer 2.5 and later. This limitation means that you must not use a View 4.0.x master image, or snapshot, when creating, recomposing, or refreshing a pool that uses features specific to View 4.5 or later releases. These View 4.5 and later features include using a system-disposable disk (SDD), using a Sysprep customization specification, and attaching a previously archived persistent disk to an existing desktop.

Prerequisites

- Complete the procedure described in "Upgrade View Connection Servers in a Replicated Group," on page 25.

- Complete the procedure described in "Upgrade to View Composer 2.7 and vCenter Server 5.0 on a Different Machine," on page 35 or "Upgrade View Composer Only," on page 31.

- If you are also upgrading ESX/ESXi hosts and virtual machines, complete the procedure described in Chapter 6, "Upgrading ESX/ESXi Hosts and Virtual Machines," on page 43.

  To use the 3D rendering feature available with View 5.0, you must upgrade the virtual hardware version to 8 in Windows 7 virtual machines.

- Complete the procedure described in "Upgrade View Agent," on page 47 for upgrading the agent in the parent virtual machine.

- Plan maintenance windows carefully so that recreating and recomposing desktop pools will not overwhelm the storage array and ESX/ESXi hosts.

Procedure

1   If you disabled provisioning of new virtual machines in preparation for the upgrade, enable provisioning again.

2   For pools composed of Windows 7 desktops, to use the Windows 7 3D rendering feature available with View 5.0, edit the pool to configure the following settings:

   - Set the pool to use the PCoIP display protocol.

   - Set **Allow users to choose protocol** to **No.**

   - Turn on the **Windows 7 3D Rendering** feature.

   This feature is available for Windows 7 desktops that use virtual hardware version 8, available with vSphere 5.

3   Use the snapshot you created after upgrading the parent virtual machine to recreate or recompose desktop pools.

Option	Action
View 4.0.x pools	For floating desktop pools, delete virtual desktops from the pool and recreate the desktop pool. For dedicated pools, recompose the desktop pool.
View 4.5.x and 4.6.x pools	For both floating and dedicated pools, recompose the desktop pool.

4   If you changed the **Refresh OS disk on logoff** setting for a pool to **Never** in preparation for the upgrade, change the setting back to reflect the appropriate refresh policy.

5   If you canceled any refresh or recompose operations for any desktop pools, schedule the tasks again.

What to do next

Upgrade View Clients. See "Upgrade View Clients," on page 50 and "Upgrade View Local Mode Clients," on page 51.

Upgrade View Clients

The final phase of a VMware View upgrade includes upgrading View Clients and upgrading the firmware on thin client devices if you use them.

NOTE   This procedure provides instructions for upgrading View clients that use remote desktops. If you are upgrading from View 4.5 or 4.6 Client with Local Mode or View 4.0.x or Offline Client, see "Upgrade View Local Mode Clients," on page 51 or "Upgrade Offline Desktop Clients to View Client with Local Mode," on page 52.

Prerequisites

■   Complete the procedures for upgrading the server components, which can include View Connection Server, View Transfer Server, and View Composer. See Chapter 5, "Upgrading VMware View Server Components," on page 25.

■   Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the installer and perform the upgrade.

■   Verify that client systems have a supported operating system and, if you plan to use the PCoIP display protocol, verify that clients meet the additional hardware requirements. See "Supported Operating Systems for Windows-Based View Client and View Client with Local Mode," on page 16.

Procedure

1   Have end users upgrade to View 5.0 Client.

Option	Action
View Client	For View Client installers that are hosted on the VMware Web site, such as View Client for Windows and View Client with Local Mode, download and send the View Client to your end users or post it on a Web site and ask end users to download the installer and run it.
	For some View clients, you might need to instruct your end users to get the latest version of View Client from the Apple App Store or the Android Market.
View Portal	For end users with Windows or Mac systems, let your end users know that the next time they connect to the View Portal, they will be prompted to download and run the new client installer.
	If their existing View Clients require smart cards and end users use Internet Explorer to connect to View Portal, they will be prompted to insert a smart card before View Portal checks the client version. End users can either insert their smart card or click **Cancel**. The result is the same. View Portal checks the version and prompts end users to download the new client installer.
	For end users with Linux systems, the View Portal no longer lets them connect to View desktops.
Thin client	Upgrade the thin client firmware and install the new View Client on end users' client devices. Thin clients and zero clients are provided by VMware partners.

2   Have end users verify that they can log in and connect to their View desktops.

What to do next

If any of your end users have View or 4.0.x Offline Desktop, upgrade these clients. See "Upgrade Offline Desktop Clients to View Client with Local Mode," on page 52. If your end users have View 4.5.x or 4.5.x Client with Local Mode, upgrade these clients. See "Upgrade View Local Mode Clients," on page 51.

Upgrade View Local Mode Clients

Upgrading View 4.5.x or 4.6.x Client with Local Mode is very similar to upgrading View Client for Windows. You run the new installer on the client system.

NOTE   This procedure provides instructions for upgrading from View 4.5.x or 4.6.x Client with Local Mode. If you are upgrading from View 4.0.x Offline Clients, see "Upgrade Offline Desktop Clients to View Client with Local Mode," on page 52.

Prerequisites

■   Verify that you have either a local user account with administrative privileges or a domain user account with administrative privileges on client systems that you will use to run the installer and perform the upgrade.

■   Verify that client computers have a supported operating system and can accommodate the View desktop that end users plan to download and run locally. See "Supported Operating Systems for Windows-Based View Client and View Client with Local Mode," on page 16 and "Hardware Requirements for Local Mode Desktops," on page 16.

■   Determine a strategy for upgrading the View Agent software installed in the local desktop operating system. One strategy is to instruct end users to check in their local desktops and upgrade View Agent on the virtual machine in the datacenter. Another strategy is to upgrade View Agent inside the local View desktop on the client system. You can use whatever third-party tools you usually use for software upgrades.

Procedure

1   If you plan to upgrade View Agent on the virtual machine in the datacenter, have end users check in their local mode desktops.

2   On the client system, run the View 5.0 Client with Local Mode installer.

    If end users have the required administrative privileges on their computers, you have several options for providing end users with the installer:

    ■   Download the installer from the VMware Web site and send it to your end users.

    ■   Post the installer on a company Web site and ask end users to download it.

    ■   Give end users the URL for View Portal and have them download the installer from View Portal.

3   Have end users verify that they can log in and connect to their local View desktops.

What to do next

If end users checked in their local mode desktops so that the View Agent software could be upgraded in the datacenter, when the View Agent upgrade is complete, instruct end users to check out their newly upgraded View desktops to their local systems.

If the View Agent software inside the local desktops is not yet upgraded to View Agent 5.0, upgrade View Agent, either in the datacenter virtual machine or on the local client system.

Upgrade Offline Desktop Clients to View Client with Local Mode

Offline Desktop was an experimental feature of VMware View 4.0.x, but you can upgrade to the fully supported View Client with Local Mode available with View 5.0.

NOTE   This procedure provides instructions for upgrading from View 4.0.x View Offline Clients. If you are upgrading from View 4.5.x or 4.6.x Client with Local Mode, see "Upgrade View Local Mode Clients," on page 51.

Prerequisites

■   Verify that you have either a local user account with administrative privileges or a domain user account with administrative privileges on client systems that you will use to run the installer and perform the upgrade.

■   Verify that client computers have a supported operating system and can accommodate the View desktop that end users plan to download and run locally. See "Supported Operating Systems for Windows-Based View Client and View Client with Local Mode," on page 16 and "Hardware Requirements for Local Mode Desktops," on page 16.

Procedure

1   Have end users check in their View 4.0.x offline desktops.

2   Have end users delete the folder that contains the files that make up their offline desktops.

Desktop Operating System	Check-out Directory
Default directory on Windows 7 and Windows Vista	`C:\Users\`*User Name*`\AppData\Local\VMware\VDM\Offline Desktops\`*pool_display_name*
Default directory on Windows XP	`C:\Documents and Settings\`*User Name*`\Local Settings\Application Data\VMware\VDM\Offline Desktops\`*pool_display_name*

3   Upgrade all components that need to be upgraded.

These components might include View Connection Server, View Transfer Server, View Composer, vCenter Server, ESX/ESXi hosts, virtual machines, VMware Tools in virtual machines, and View Agent in virtual machines.

4   If you do not already have View Transfer Server installed and configured, install and configure a View Transfer Server instance, as described in the *VMware View 5.0 Installation* document.

With VMware View 4.5 and later versions, the View Transfer Server component transfers data between local client devices and the datacenter during check in, check out, replication, and system-image provisioning operations.

5   On the client system, run the View 5.0 Client with Local Mode installer.

If end users have the required administrative privileges on their computers, you have several options for providing end users with the installer:

- Download the installer from the VMware Web site and send it to your end users.

- Post the installer on a company Web site and ask end users to download it.

- Give end users the URL for View Portal and have them download the installer from View Portal.

6   Have end users verify that they can log in and connect to their upgraded View desktops.

Applying VMware View Patches 8

Patch releases can include installer files for the following VMware View components: View Connection Server, View Composer, View Agent, and various View clients. The patch components that you must apply depend on the bug fixes that your View deployment requires.

Depending on which bug fixes you require, install VMware View patches in the following order, as applicable:

1 View Connection Server

2 View Composer

3 View Agent

4 View Client

This chapter includes the following topics:

- "Apply a Patch for View Connection Server," on page 55
- "Apply a Patch for View Composer," on page 56
- "Apply a Patch for View Agent," on page 57
- "Apply a Patch for View Clients," on page 58

Apply a Patch for View Connection Server

Applying a patch involves uninstalling the current version and then installing the patch version.

Prerequisites

- Determine when to perform this procedure. Choose an available desktop maintenance window. The amount of time required depends on the number of View Connection Server instances in the group. Budget 15 minutes to half an hour for each instance.

- Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the patch installer.

Procedure

1 If View Connection Server is installed in a virtual machine, take a snapshot of the virtual machine.

   For instructions on taking snapshots, see the vSphere Client online help.

2 Stop the service called `VMware View Connection Server service` on all View Connection Server instances in the group.

   View LDAP database corruption can occur if you upgrade a View Connection Server instance while other instances in the same group are running. Do not stop the `VMwareVDMDS` service.

3   On one of the View Connection Server instances in a replicated group, download the installer file for the patch version of VMware View Connection Server.

Your contact at VMware will provide instructions for this download.

4   Use the Windows **Add/Remove Programs** utility to remove your previously installed View Connection Server, but do not remove **Adam Instance VMwareVDMDS**.

5   Run the installer that you downloaded for the patch release of VMware View Connection Server.

For information about running the installer, see the *VMware View Installation* document.

6   Follow the installation wizard prompts and click **OK** when asked to continue the installation with the existing ADAM instance.

7   Verify that the VMware View Connection Server service restarts after the installer wizard closes.

8   Stop the View Connection Server service again.

9   Repeat Step 3 through Step 8 for the other View Connection Server instances in the replicated group.

10   After all servers in the group are upgraded, start the View Connection Server service on all of them.

11   Repeat this process for View security servers.

What to do next

If applying the patch fails on one or more of the View Connection Server instances, see "Create a Replicated Group After Reverting View Connection Server to a Snapshot," on page 28.

Apply the patch to View Composer or View Agent, as applicable.

Apply a Patch for View Composer

Applying a patch involves uninstalling the current version and then installing the patch version. Not all patch releases include patches for View Composer.

Prerequisites

■   Determine when to perform this procedure. Choose an available desktop maintenance window. Budget 15 minutes to half an hour for each instance of View Composer.

■   Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the patch installer.

■   If View Composer is installed in a virtual machine, take a snapshot of the virtual machine.

For instructions on taking snapshots, see the vSphere Client online help.

■   Back up the vCenter Server database and the View Composer database.

For instructions on performing a database backup, see the documentation from your database vendor.

■   For all linked-clone desktop pools, disable provisioning of new virtual machines.

■   If any desktop pools are scheduled to do a refresh or recompose operation, cancel these tasks.

Procedure

1   On the virtual machine that hosts View Composer, download the installer file for the patch version of VMware View Composer.

Your contact at VMware will provide instructions for this download.

2   Use the Windows **Add/Remove Programs** utility to remove your previously installed View Composer.

3   Run the installer that you downloaded for the patch release of VMware View Composer.

4   Verify that the VMware View Composer service restarts after the installer wizard closes.

5   If applicable, apply the patch for View Agent on a parent virtual machine and create a desktop pool for testing purposes.

    a   Use the Windows **Add/Remove Programs** utility to remove your previously installed View Agent.

    b   Download and run the VMware View Agent patch installer on a parent virtual machine.

        Your contact at VMware will provide instructions for this download.

    c   Create a small linked-clone desktop pool from this virtual machine.

    d   Test a virtual desktop from the desktop pool to verify that all the usage scenarios function properly.

        For example, create a desktop pool that contains one virtual desktop, and verify that you can use View Client to log in to that desktop.

        Step-by-step instructions for running the View Agent installer and creating desktop pools appear in the *VMware View Administration* document, available by clicking the **Help** button in View Administrator.

    e   Verify that virtual desktops from the test desktop pool work as expected.

What to do next

Apply the patch to View Agent, if applicable.

Apply a Patch for View Agent

Applying a patch involves uninstalling the current version and then installing the patch version.

The following steps need to be performed on the parent virtual machine, for linked-clone desktop pools, or on each virtual machine desktop in a full-clone pool, or on individual View desktop virtual machines for pools that contain only one View desktop.

Prerequisites

Verify that you have a domain user account with administrative privileges on the hosts that you will use to run the patch installer.

Procedure

1   On all parent virtual machines, virtual machines used for full-clone templates, full clones in a pool, and manually added individual virtual machines, download the installer file for the patch version of VMware View Agent.

    Your contact at VMware will provide instructions for this download.

2   Use the Windows **Add/Remove Programs** utility to remove the previously installed View Agent.

3   Run the installer that you downloaded for the patch release of the VMware View Agent.

    Step-by-step instructions for running the View Agent installer appear in the *VMware View Administration* document.

4   If you disabled provisioning of new virtual machines in preparation for applying a patch to View Composer, enable provisioning again.

5   For parent virtual machines that will be used to create linked-clone desktop pools, take a snapshot of the virtual machine.

    For instructions on taking snapshots, see the vSphere Client online help.

6   For linked-clone desktop pools, use the snapshot you created to recompose the desktop pools.

7   Verify that you can log in to the patched View desktop pools with View Client.

8   If you canceled any refresh or recompose operations for any linked-clone desktop pools, schedule the tasks again.

What to do next

Apply the patch to one or more View clients, as applicable.

Apply a Patch for View Clients

Applying a patch involves uninstalling the current version and then installing the patch version.

Procedure

1   On each client system, download the installer file for the patch version of VMware View Client.

Your contact at VMware will provide instructions for this download. For some View clients, you might get the patch release from the Android Market or the Apple App Store.

2   Remove the current version of the VMware View client from your device.

Use the customary device-specific method for removing applications.

3   If applicable, run the installer that you downloaded for the patch release of the View Client.

If you got the patch from the Apple App Store or the Android Market, the app is usually installed when you download it, and you do not need to run an installer.

4   Verify that you can log in to the patched View desktop pools with the newly patched View Client.

Upgrading vSphere Components Separately in a VMware View Environment

9

If you upgrade vSphere components separately from VMware View components, you must back up some View data and reinstall some View software.

Instead of performing an integrated upgrade of VMware View and vSphere components, you can choose to first upgrade all View components and then upgrade vSphere components, or the reverse. You might also upgrade only vSphere components when a new version or update of vSphere is released.

When you upgrade vSphere components separately from View components, you must perform the following additional tasks:

1   Before you upgrade vCenter Server, back up the vCenter Server database and the View Composer database.

2   Before you upgrade vCenter Server, back up the View LDAP database from a View Connection Server instance by using the `vdmexport.exe` utility.

For instructions, see the *VMware View Administration* document. If you have multiple instances of View Connection Server in a replicated group, you need to export the data from only one instance.

3   If you use View Composer, after you upgrade all ESX/ESXi hosts that are managed by a particular vCenter Server instance, restart the View Composer service on that host.

4   After you upgrade VMware Tools in virtual machines that are used as View desktops, reinstall View Agent.

Reinstalling View Agent guarantees that the drivers in the virtual machine remain compatible with the other View components.

Step-by-step instructions for running the View Agent installer appear in the *VMware View Administration* document.

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