Implementing VMware Horizon View 5.2

Jason Ventresco

Chapter No. 10
"Performing View Desktop Maintenance"
In this package, you will find:

A Biography of the author of the book

A preview chapter from the book, Chapter NO.10 "Performing View Desktop Maintenance"

A synopsis of the book’s content

Information on where to buy this book

About the Author

Jason Ventresco is a 13-year veteran of the IT field, currently working for EMC2 as a Principal Solutions Engineer. In that role he architects, builds, and tests the latest end user computing solutions to validate their performance and provide guidance to EMC2 customers and partners. Jason has previously worked as a member of the Global Infrastructure team for FHI 360 and as an IT consultant for WorkSmart and Xerox Global Services.

Jason lives in Raleigh, North Carolina with his wife Christine and daughter Amanda. He holds two degrees, a Master of Science in Information Assurance from Norwich University and a Bachelor of Science in Information Technology from the University of Phoenix. He holds many certifications, some of which include VCAP-DTD, VCP5-DT, VCP, CISSP, EMCCA, and MCITP for Server 2008 and Exchange 2010. In his free time, he likes to travel and attend Carolina Hurricanes hockey and Durham Bulls baseball games.

For More Information:

I would like to thank my wife Christine and daughter Amanda for supporting me throughout all phases of my career, while I was attending college, and during the countless hours I spent writing this book. You are my inspiration, and I love you both.

I would also like to thank my parents, Richard and Linda Ventresco, for everything they have done for my family and me. I also thank them for helping me buy that computer when I was 13. Had that not happened, who knows what I would be doing today. I would not be where or who I am without their love and support.

For More Information:
Implementing VMware Horizon View 5.2

Implementing VMware Horizon View 5.2 is a hands-on guide on how to design and implement the different components of View. The examples provided in this book build upon one another, and guide the reader through the basics of View infrastructure design, and then the installation and configuration of each core View component. Using the examples provided in this book, the reader will be able to assess the basic needs of their View infrastructure, and then implement and manage their own View environment.

There are many places in this book that refer the reader to the official VMware Horizon View documentation. You are encouraged to review this documentation as it complements the material in this book, and contains additional information that can provide for a deeper understanding of the technical details and capabilities of the entire VMware Horizon View software suite.

**Why Virtual Desktops?**

There are a number of different reasons why an organization might decide to implement VMware View within its own environment. Many organizations are already familiar with the benefits of virtualization, such as:

- **Server consolidation**: Less physical hardware required to service the same quantity of workload
- **Simplified management**: Fewer physical resources to manage
- **More energy-efficient**: Less power and cooling required
- **Hardware independence**: Virtual machines can run on almost any hardware platform without any changes required
- **Enhanced capabilities**: Deploy new virtual servers much faster than physical ones, and with less effort

These are just a small sample of the benefits of virtualization. If you have already implemented virtualization in your organization, you likely have reasons of your own.

Virtual Desktops can provide organizations with additional advantages beyond those of virtualization itself. With VMware View, we can:

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• Roll out a new Windows desktop OS across your enterprise without making any changes to the existing desktops. Those new OS pilots will be a lot less risky when users can retain access to their existing desktop.

• View desktops live in the datacenter and can be accessed from almost anywhere, from a variety of clients. View desktops, as well as the data stored on them, can't be left in airports, stolen from cars, or accidentally left on your desk at the office. Worried about people copying data from their View desktop to a USB drive on the client? Disable that feature.

• Stop caring about endpoint hardware. Use existing Windows PCs as desktops if you want, or move to a zero client and do away with common endpoint management tasks. Better yet, have users bring their own device and let them use it to access their View desktop. Worry about what's in the datacenter, not on the desk.

• Microsoft Patch Tuesday redefined. With View linked clones, you patch once and then update the desktops with a whole new base image. No more testing patches across 15 different hardware platforms. No more monitoring patch status across hundreds or thousands of desktops. The same technique can be used to roll out new applications as well.

• Less power and cooling are needed for the rest of the building. Zero and thin View clients typically require less power and generate less heat than a physical desktop.

• Stop troubleshooting one-off desktop problems. Problems with Windows? Deploy a new desktop in minutes. With features such as View Persona Management to protect user profile data, and ThinApp to automatically deploy applications not present on the Virtual Desktop base image, the individual desktop doesn't have to matter. If a problem will take more than 10 minutes to fix, deploy a new desktop instead.

These are just some of the advantages you can realize by using VMware View and vSphere to move your desktops into the datacenter. While reading this book, I encourage you to think of ways that View can change how you provide end user computing resources to your organization. For example:

For More Information:

• Don't just simply forklift your desktops into the datacentre as full virtual machines; consider the benefits of linked clones.

• Rather than creating large numbers of master images for different departments or worker types across your organization, create a basic image that you can layer applications on top of using ThinApp or even VMware Horizon Workspace.

• Investigate software that is optimized for Virtual Desktops, such as the vShield Endpoint antivirus platform. Software that is optimized for Virtual Desktop platforms may require less per-desktop resources, which enables you to run more desktops on a given vSphere host.

• View has features that make the individual desktop less important; use them. Use Persona Management to make your user data portable and ThinApp to make applications portable, and suddenly the individual desktop won't matter as much. The more portable everything is, the more options you will have for the types of View desktops that you deploy.

VMware Horizon View can provide you with much more than just a means of virtualizing your desktops. The more familiar you become with its features and capabilities, the more you will realize that you can rethink much of what you do concerning desktop management and delivery, and provide a higher quality experience to your end users. I certainly hope that is the case.

What This Book Covers

Chapter 1, Designing a VMware Horizon View Infrastructure, covers a number of key topics that are integral to the design of your View infrastructure. Learn about each of the different View software components, base infrastructure requirements, and how to assess Virtual Desktop resource requirements.

Chapter 2, Implementing VMware Horizon View Connection Server, covers Connection Server infrastructure requirements, sizing, limits, high availability, installation, configuration, backup, and recovery.

Chapter 3, Implementing VMware Horizon View Composer, covers Composer infrastructure requirements, installation, configuration, backup, and recovery. The benefits of linked-clone desktops are also discussed.

Chapter 4, Implementing VMware Horizon View Transfer Server, covers Transfer Server infrastructure requirements, installation, configuration, backup, and recovery. The benefits and capabilities of the View Local Mode desktops are also discussed.

Chapter 5, Implementing VMware Horizon View Security Server, covers Security Server usage, infrastructure requirements, sizing, limits, high availability, installation, configuration, backup, and recovery.

For More Information:
Chapter 6, Using VMware ThinApp, covers how to use ThinApp to virtualize applications and deploy them using View. Additional topics covered include an overview of ThinApp, benefits, limitations, and how to update applications packaged with ThinApp.

Chapter 7, Implementing View Persona Management, covers how to use the View Persona Management feature to manage Windows user profiles. Topics covered include requirements, features, and configuration.

Chapter 8, Creating VMware Horizon View Desktop Pools, covers how to create desktop pools using the View Manager Admin console. Topics covered include desktop pool options, desktop pool types, monitoring pool creation, user entitlement, and common provisioning problems.

Chapter 9, VMware Horizon View Client Options, covers the different types of clients available for View. Topics covered include the difference between thin and zero clients, supported operating systems and their requirements, client installation, and client command-line options.

Chapter 10, Performing View Desktop Maintenance, covers how to perform maintenance on View linked-clone desktops. Topics include an overview of the different maintenance operations including refresh, recompose, and rebalance, and how to manage the optional linked-clone persistent disks.

Chapter 11, Creating a Master Virtual Desktop Image, covers the techniques that should be used when creating a master Virtual Desktop image. Topics covered include the importance of desktop optimization, sample optimization results, and how to optimize the virtual machine hardware, Windows filesystem, Windows OS, and Windows user profile.

Chapter 12, Managing View SSL Certificates, covers how to replace the default SSL certificates on each of the View components including View Composer and the View Connection, Security, and Transfer Servers. Also discussed is how to create SSL certificate requests and obtain new certificates using a Microsoft Active Directory Certificate Services server.

Chapter 13, Implementing VMware Horizon View Group Policies, covers how to use the View Active Directory Group Policy templates to customize the different View software components. Topics covered include a detailed description of each of the different group policy template settings, an explanation of where the settings should be applied within Active Directory, the location of the Group Policy template files, and the importance of Group Policy loopback processing with View desktops.

Chapter 14, Managing View with PowerCLI, covers how to use vSphere PowerCLI to configure and manage the View infrastructure. All of the View PowerCLI commands are covered in detail, and examples are provided that show how they are used.

For More Information:
Chapter 15, VMware Horizon View Feature Pack 1, covers the new features introduced with the release of the VMware Horizon View Feature Pack 1, including client access to View desktops over HTML5 and the Unity Touch interface. The topics covered include feature pack requirements, installation of the Feature pack components, enabling HTML access to desktops, HTML access limitations, and how to customize the Unity Touch interface.


Appendix, Advanced Details about Key Horizon View Features, covers advanced information about the following View subjects: event logging options, vCenter provisioning options, Local Mode desktop policy settings, customizing View desktop names, and optimizing the PCoIP protocol.
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Performing View Desktop Maintenance

Maintaining desktops deployed using VMware Horizon View requires a different approach depending on what desktop type you have selected. Full clone desktops are typically managed using the same techniques as traditional physical desktops, as each is a fully independent virtual machine with dedicated underlying virtual hard disks. Many organizations choose full clone desktops for this reason as they can continue to manage them using tools and procedures that are already in place.

Linked-clone desktops are an entirely different matter, especially if you wish to minimize the amount of per-desktop storage that is required. If an organization were to manage its linked-clone desktops using the same traditional techniques used with physical or full clone desktops, they would find that over time those desktops used more and more storage space, negating the benefits of using linked-clone desktops.

This chapter will focus primarily on managing linked-clone desktops using the various features of View itself.

In this chapter, we will learn:

- An overview of linked-clone maintenance
- How to recompose a linked-clone desktop pool
- How to refresh a linked-clone desktop pool
- How to rebalance a linked-clone desktop pool
- How to manage View Composer persistent disks

An overview of linked-clone maintenance

To understand why a linked-clone desktop requires different maintenance techniques than a physical or full clone desktop, we must again understand what makes it different. The following diagram shows the relationship between the linked-clone disk and the shared replica disk.

![Diagram showing the relationship between the linked-clone disk and the shared replica disk.]

The replica disk is a read-only copy of the virtual desktop master image virtual hard disk; it is shared among as many as 2,000 desktops within a given View desktop pool. The linked-clone disk is used by the virtual desktop when it needs to write data; one virtual desktop is created for each linked-clone desktop.

One of the primary advantages of linked-clone desktops is that they require far less storage space than full-clone desktops; this is made possible by the shared replica disk. This reduced storage utilization is certainly useful at the time the desktops are deployed, but to maintain this advantage over time, you must use the View native recompose or refresh features.

Each of the maintenance operations described in this section requires the desktop to be powered off. Due to this, as well as the storage IO associated with each operation, it is recommended you perform these tasks during off-peak hours. Each of these tasks can be scheduled, making it easier for View administrators to accomplish this.

For More Information:  
Desktop refresh

A desktop refresh returns the desktop’s linked-clone disk, also known as the OS disk, to the original state and size as configured in the desktop pool options. If the desktop is configured with an optional persistent disk for storing user profile data, that data will be retained during the refresh operation. A refresh can be performed on either a desktop pool or an individual desktop.

A desktop refresh provides several benefits:

- A quick way of reducing linked-clone storage utilization
- If a desktop develops software problems, a refresh can be used to restore it to the original state

A refresh operation is also performed during linked-clone recompose and rebalance operations. A refresh operation typically requires fewer than 10 minutes of downtime per desktop, although the time required may vary depending on the performance capabilities of the View infrastructure and the specified number of concurrent refresh operations allowed. View Composer performs up to 12 concurrent refresh operations at once by default. Instructions on how to perform a desktop refresh operation are provided later in this chapter.

Any maintenance task that includes a refresh operation will force the Windows desktop to reactivate the OS and Office software if installed. Due to this, it is recommended that any organization that wishes to use linked-clone desktops deploy a Windows KMS server to handle Windows and Office license activation. Windows MAK keys would be quickly exhausted in a linked-clone desktop environment.

Desktop recompose

A desktop recompose is used to replace the existing linked-clone replica disk, usually in response to a configuration change, software installation, or software update. A desktop recompose is the preferred method of updating the linked-clone desktop as the changes only affect the replica disk. Were the same updates or changes to be applied directly to the linked-clone desktops themselves, each of the linked-clone OS disks would increase in size by the amount needed to process the change. The following example shows the difference between updating a virtual desktop master image and using a recompose to deploy an updated replica disk, versus installing the updates directly on the linked-clone desktops.
In this example, it is determined that installing the updates on a single desktop requires 215 MB of additional space:

- If the virtual desktop master image is updated, and a recompose operation is performed, only the 215 MB of additional space will be required to update all 2,000 desktops in the pool
- If the linked-clone desktops are patched individually, a pool of 2,000 linked-clone desktops would require an additional 430 GB of storage, or 215 MB for each linked-clone desktop

In addition to the additional storage required to install the patches directly on the linked-clone desktops, the patches or software installed would not persist if any maintenance that requires a refresh operation were performed.

A desktop recompose operation consists of the following steps:

1. The View administrator (or other responsible party) updates the virtual desktop master image with the required changes.
2. The View administrator takes a new snapshot of the updated virtual desktop master image.
3. The View administrator uses the View Manager Admin console to initiate a recompose, selecting the updated snapshot. A new master image with snapshot can also be selected, provided it is running on the same operating system.
4. View Composer clones the selected virtual desktop master image and snapshot to a new replica disk.
5. View Composer powers down the virtual desktop that will be recomposed.
6. View Composer returns the existing linked-clone OS disk to the original size and state, and associates it with the new replica disk. In addition, if the desktop has a persistent disk configured, it will be attached to the recomposed desktop at this point.
7. View Composer powers on the recomposed linked clone and configures it using the View Agent.
8. The View Agent informs the View Manager server that it is available for use.

A recompose operation typically requires fewer than 10 minutes of downtime per desktop, and View Composer performs up to 12 concurrent recompose operations at once by default. Instructions on how to perform a desktop recompose operation are provided later in this chapter.
A Local Mode desktop can also be recomposed, but the recompose operation will not occur until the desktop has been checked back in to View.

Desktop rebalance
A desktop rebalance is used to rebalance linked-clone desktop storage across existing datastores, including any new datastores that were added to the desktop pool configuration. As mentioned previously, a rebalance operation will also refresh the desktop as part of the process, so a rebalance cannot be used as a way of balancing the linked-clone OS disks.

A rebalance is typically most useful to balance persistent disk storage, as the persistent disk will remain in place until the desktop is deleted or the persistent disk is detached from the desktop and later deleted. Organizations that choose not to deploy a persistent disk may find that regular refresh or recompose operations are all that is required to maintain consistent desktop storage utilization throughout the lifecycle of their linked-clone desktops.

Managing View maintenance tasks
On-going or scheduled refresh, recompose, or rebalance tasks can be paused, resumed from a pause, or canceled at any time using the View Manager Admin console. When a maintenance task is canceled or paused, any operations currently underway will finish but no new operations will start. When a paused task is resumed, the maintenance operation will continue.

The resources required to perform View desktop maintenance tasks may impact the performance of the View infrastructure. If the View desktop maintenance is causing performance problems for other View desktops, or for other resources that share the View infrastructure, simply pause the maintenance task. Resume the maintenance task during a period of low infrastructure utilization.

The following steps outline how to manage a task assigned to a desktop pool or an individual desktop:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Go to Inventory | Pools within the console.

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3. In the **Pools** window, click on the pool that has the task that you wish to cancel. In our example, we will click on the pool titled **LC-Pool** to open the **LC-Pool** window.

4. Under the **Tasks** tab of the **LC-Pool** window (shown in the following screenshot), highlight the task that you wish to update and click on **Cancel task**..., **Pause task**..., or **Resume task** as required. Since the sample task is not currently paused, the **Resume task** button is grayed out.

![LC-Pool window with tasks tab](image)

The **Tasks** tab will show tasks assigned to individual desktops as well as those assigned to the pool as a whole. The tasks are managed using the same process regardless of their assignment.

Global settings for View maintenance
There are multiple configuration options within View that affect View refresh, recompose, and rebalance operations. This section will explain where those options can be found, and their purposes.

Logoff warning and timeout
When a View administrator chooses to forcibly log off the user to perform a linked-clone maintenance operation, the user is notified and the log off proceeds after five minutes. The notification message and the timeout value can both be configured in the **View Global Settings** window.

If you choose to automatically log off users to perform desktop maintenance, your warning message should instruct them not to log in again until maintenance is complete. This will help prevent users from immediately trying to reconnect to their desktops after they have been logged off, which can interfere with the maintenance process.

For More Information:
The following steps outline how to update these global settings:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.

2. Open the Global Settings window under View Configuration within the console. Click on the Edit button in the General section as shown in the following screenshot:

3. In the General Settings window, update the Display warning before forced logoff and After warning, log off after settings as needed. Click on OK to update the settings.
Concurrent maintenance operations

By default, View Composer will perform no more than 12 maintenance operations at one time. While this is considered the optimal setting for this option, it is possible to increase or decrease the number if required. This number is set on a per-vCenter Server basis, so if multiple vCenter Servers are being used, each one will need to be changed individually.

The following steps outline how to update the number of concurrent maintenance operations that View Composer will perform:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the Servers window under View Configuration within the console.
3. In the vCenter Servers tab of the Servers window (shown in the following screenshot), highlight the vCenter Server you wish to update and click on the Edit button.
4. In the Edit vCenter Server window, click on the Edit button underneath the vCenter Server Settings section.
5. In the second Edit vCenter Server window, under the Advanced Settings section (shown in the following screenshot), update the Max concurrent View Composer maintenance operations value as needed. Click on OK twice to close both Edit vCenter Server windows and update the settings.
The Edit vCenter Server window also allows you to change other settings that affect the speed at which View desktops are provisioned, deployed, and powered on. For each of these settings, the default value is considered optional and changes are not recommended.

### Storage overcommit

Storage overcommit levels are configured on a per-datastore basis and affect how many linked clones View Composer will provision on each datastore. Storage overcommit is typically configured when the desktop pool is created but the settings can be updated at any time.

The following are the four different storage overcommit levels supported by View. Each is calculated based on the size of the parent virtual machine.

- **None**: Storage is not overcommitted
- **Conservative**: The default; storage will be overcommitted up to four times the size of the datastore
- **Moderate**: Storage will be overcommitted up to seven times the size of the datastore
- **Aggressive**: Storage will be overcommitted up to 15 times the size of the datastore

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For More Information:

VMware Horizon View Desktop Maintenance

Consider an example where the overcommit level is set to Conservative, the parent virtual machine uses a disk that is 12 GB in size, and linked clones will be configured on datastores that are 240 GB in size.

- 120 GB (datastore) X 4 (overcommit level) = 480 GB
- 480 GB / 12 GB (parent virtual machine size) = 40 linked clones

Based on these figures, when using the default storage overcommit level, View Composer will place up to 40 linked clones on each datastore at the time of the linked-clone deployment or rebalance operation.

**Updating datastore storage overcommit settings**

The following steps outline how to update the storage overcommit levels of an existing desktop pool.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Pools** window under **Inventory** within the console.
3. In the **Pools** window, highlight the pool you wish to refresh. In our example we will highlight the pool titled LC-Pool. Click on the **Edit** button shown below to open the LC-Pool window.

4. In the **LC-Pool** window, click on the **vCenter Settings** tab.
5. In the **vCenter Settings** tab, click on the **Browse...** button next to the **Datastores** setting shown in the following screenshot. This will open the **Select Linked Clone Datastores** window.

For More Information:

6. In the **Select Linked Clone Datastores** window (shown in the following screenshot), open the **Storage Overcommit** drop-down menu next to each datastore to set the storage overcommit level. The level can only be changed for the datastores that are in use by the pool.

<table>
<thead>
<tr>
<th>Datastore</th>
<th>Capacity</th>
<th>Free (GB)</th>
<th>Type</th>
<th>Desks</th>
<th>Storage Overcommit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier2-SAS1</td>
<td>73.86</td>
<td>62.08</td>
<td>NFS</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Tier2-SAS2</td>
<td>49.24</td>
<td>37.73</td>
<td>NFS</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Tier2-SAS3</td>
<td>73.86</td>
<td>62.55</td>
<td>NFS</td>
<td>1</td>
<td>Conservative</td>
</tr>
</tbody>
</table>

7. Click **OK** twice to close the **Select Linked Clone Datastores** and **Edit LC-Pool** windows and implement the changes.

Changing the storage overcommit settings does not, by itself, initiate any desktop maintenance activities. To enforce the updated storage overcommit policies on an existing desktop pool, simply perform a desktop rebalance using the procedure described later in this chapter.

### Refreshing linked-clone desktops

The following steps outline how to refresh a desktop pool using the View Manager Admin console.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Pools** window under **Inventory** within the console.
3. In the **Pools** window (shown in the following screenshot), click on the pool you wish to refresh. In our example, we will click on the pool titled **LC-Pool** to open the **LC-Pool** window.

For More Information:

4. On the right side of the **LC-Pool** window (shown in the following screenshot), open the **View Composer** drop-down menu and click on **Refresh** to open the **Refresh** window.

![Refresh window](image)

5. In the **Refresh - Scheduling** window (shown in the following screenshot), accept the default settings and click on **Next** to continue. If no changes are made, the refresh operation will begin immediately and users will be logged off from their desktops automatically after 5 minutes. The following are the optional settings:

- The date and time the refresh should start
- Whether or not to force the users to log off, or wait for them to log off
- Whether or not to stop the refresh if an error occurs
- Updates to the warning and grace period settings must be made in the View's global settings

![Scheduling settings](image)

For More Information:

6. Review the options in the **Refresh – Scheduling** window. If changes are required, click on the **Back** button to return to the previous screen. Click on **Finish** to begin or schedule the refresh operation, depending on what was configured in the previous step.

The time required to complete a desktop refresh operation varies based on a number of different factors beyond that of the View configuration itself. Generally speaking, under average circumstances it will take no more than 10 minutes per desktop starting from the time that View Composer performs the initial power down of the desktop.

The status of the refresh operation can be viewed in the **Tasks** tab of the desktop pool window as shown in the following screenshot:

![Tasks Tab Screenshot](image)

### Refreshing individual desktops

A refresh can also be performed on an individual desktop. This is often done in response to an event, such as problems with the guest OS, that affects only the desktop that is to be refreshed. The following steps outline how to refresh a single desktop using the View Manager Admin console.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Desktops** window under **Inventory** within the console.
3. In the **Desktops** window, click on the pool you wish to refresh. In our example, we will click on the desktop named **DT-LC-4** to open the **DT-LC-4** window.

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**For More Information:**

4. In the DT-LC-4 window, open the View Composer drop-down menu as shown in the following screenshot. Click on Refresh to open the Refresh window.

5. In the Refresh window, select the desired options and click on Next. These are the same options that appear when refreshing an entire desktop pool.

6. Click on Finish to begin or schedule the refresh operation, depending on what was configured in the previous step.

Recomposing linked-clone desktops

The following steps outline how to recompose a desktop pool using the View Manager Admin console:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the Pools window under Inventory within the console.
3. In the Pools window, click on the pool you wish to recompose. In our example, we will click on the pool titled LC-Pool to open the LC-Pool window.
4. On the right side of the LC-Pool window (shown in the following screenshot), open the View Composer drop-down menu and click on Recompose to open the Recompose window.

For More Information:
5. On the Image page of the Recompose window (shown in the following screenshot), highlight the updated snapshot that you wish to use with your desktops. You may also select a different parent VM and accompanying snapshot by clicking on the Change... button, as long as they use the same OS as the existing desktops. In our example, we have chosen a new snapshot of the existing parent VM. Click on Next to move to the next step.

6. By default, View will use the selected snapshot when deploying new desktops within the desktop pool. Uncheck the Change the default image for new desktops checkbox to change this behavior and force new desktops to use the preceding snapshot.

7. Review the options in the Ready to Complete page of the Recompose window. If changes are required, click on the Back button to return to the previous screen. Click on Finish to begin or schedule the recompose operation, depending on what was configured in the previous step.

The time required to complete a desktop recompose operation varies based on a number of different factors beyond that of the View configuration itself. Generally speaking, under average circumstances it will take no more than 15 minutes per desktop, starting from the time that View Composer performs the initial power down of the desktop.

If a desktop pool is configured to use Windows Sysprep for machine customization, a new Windows Machine System Identifier (SID) will be generated during a recompose operation. Consider any potential issues this may cause within your environment. The only alternative is to redeploy the desktops using VMware QuickPrep instead of Windows Sysprep.

For More Information:  
The status of the recompose operation can be viewed in the **Tasks** tab of the desktop pool window as shown in the following screenshot:

![Tasks Tab Screenshot]

**Recomposing individual desktops**

A recompose can also be performed on an individual desktop. Reasons to do this might include the need to test out an updated desktop configuration on a small number of users prior to recomposing all the desktops. The following steps outline how to recompose a single desktop using the View Manager Admin console:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Desktops** window under **Inventory** within the console.
3. In the **Desktops** window, click on the desktop you wish to recompose. In our example, we will click on the desktop named **DT-LC-4** to open the **DT-LC-4** window.
4. In the **DT-LC-4** window, open the **View Composer** drop-down menu as shown in the following screenshot. Click on **Recompose** to open the **Recompose** window.

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**For More Information:**

5. In the Image page of the Recompose window, select the desired options and click on Next. These are the same options that appear when performing a desktop pool recompose.

6. On the Scheduling page of the Recompose window, select the desired scheduling options and click on Next. These are the same scheduling options that appear when performing a desktop pool recompose.

7. Click Finish to begin or schedule the recompose operation, depending on what was configured in the previous step.

**Rebalancing linked-clone desktops**

The following steps outline how to rebalance a desktop pool using the View Manager Admin console. In this example, we will be adding additional datastores to our desktop pool prior to the rebalance operation. These datastores will then be used by the rebalance.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.

2. Open the Pools window under Inventory within the console.

3. In the Pools window, highlight the pool to which you wish to add the datastores and then rebalance. In our example, we will highlight the pool titled LC-Pool. Click on the Edit button to open the Edit LC-Pool window.

4. In the Edit LC-Pool window, click on the vCenter Settings tab.

5. In the vCenter Settings tab, click on the Browse button next to the Datastores setting. This will open the Select Linked Clone Datastores window.

6. In the Select Linked Clone Datastores window (shown in the following screenshot), click on the checkboxes next to the datastores you wish to add to the desktop pool. In our example, we will check the box next to both the Tier2-SAS2 and Tier2-SAS3 datastores.

7. Click on OK twice to close the Select Linked Clone Datastores and Edit LC-Pool windows, implement the changes, and return to the LC-Pool window.

For More Information:

8. On the right side of the LC-Pool window (shown in the following screenshot), open the View Composer drop-down menu and click on Rebalance to open the Rebalance window.

![LC-Pool window with View Composer drop-down menu open]

9. On the Rebalance page of the Rebalance window, review the message and click on Next.

10. On the Scheduling page of the Rebalance window, select the desired scheduling options and click on Next. These are the same scheduling options that appear when performing a desktop refresh or recompose.

11. Review the options in the Scheduling page of the Rebalance window. If changes are required, click on the Back button to return to the previous screen. Click on Finish to begin or schedule the rebalance operation, depending on what was configured in the previous step.

As with other View maintenance operations, the time required to complete a desktop rebalance operation varies based on a number of different factors beyond that of the View configuration itself. Generally speaking, under average circumstances it will take no more than 15 minutes per desktop, starting from the time that View Composer performs the initial power down of the desktop.

The status of the rebalance operation can be viewed in the Tasks tab of the desktop pool window as shown in the following screenshot:

![Tasks tab of LC-Pool window]

For More Information:
Rebalancing individual desktops

A rebalance can also be performed on an individual desktop. This can be helpful in scenarios where only a small number of desktops need to be rebalanced, and not the entire desktop pool. The following steps outline how to rebalance a single desktop using the View Manager Admin console.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the Desktops window under Inventory within the console.
3. In the Desktops window, click on the desktop you wish to rebalance. In our example, we will click on the desktop named DT-LC-4 to open the DT-LC-4 window.
4. In the DT-LC-4 window, open the View Composer drop-down menu as shown in the following screenshot. Click on Rebalance to open the Rebalance window.

5. In the Rebalance window, review the message and click on Next.
6. In the Scheduling page of the Rebalance window, select the desired scheduling options and click on Next. These are the same scheduling options that appear when performing a desktop refresh or recompose.
7. Review the options in the Scheduling page of the Rebalance window. If changes are required, click on the Back button to return to the previous screen. Click on Finish to begin or schedule the rebalance operation, depending on what was configured in the previous step.
Managing View Composer persistent disks

View Composer persistent disks are used to store user profile data, and enable it to persist during the View Composer maintenance tasks described in this chapter. A linked clone is not required to have a persistent disk; features such as user profile folder redirection and View Persona management enable a linked-clone desktop to appear to be persistent, even if it lacks a persistent disk.

Organizations that rely on View Composer persistent disks to store critical user data should be familiar with how to manage them using native features of View. This section will provide examples of the different View maintenance operations that involve View Composer persistent disks.

Persistent disks will work only with the operating system version with which they were deployed. In the event that the original operating system is unavailable, and the data on the disk must be accessed, the persistent disks will need to be manually attached to a new virtual desktop and an assigned Windows drive letter. When attached this way, the persistent disks will simply appear as another hard drive.

Detaching persistent disks

Detaching the persistent disk from a desktop allows it to remain managed by View while discarding the linked-clone files that are no longer required. If the persistent disk is needed again at a later date, a desktop can quickly be deployed and the persistent disk is associated with it.

The following steps outline how to detach a persistent disk using the View Manager Admin console.

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the Persistent Disks window under Inventory within the console.
3. Highlight the persistent disk that you wish to detach. In the following example, we have highlighted the persistent disk associated with the desktop DT-LC-1, belonging to the user vjason.local\pgelsinger. Click on the Detach button to open the **Detach Persistent Disk** window.

4. In the **Detach Persistent Disk** window (shown in the following screenshot), select where to store the persistent disk. In this example, we will leave it on the current datastore, although organizations may choose to move the disk elsewhere for organizational or archival purposes. Click on OK to detach the disk.
The persistent disk will be detached from the linked clone it was associated with, the linked clone will be deleted, and a new unassigned one will be deployed in its place. The detached persistent disk can be found under the Detached tab in the Persistent Disks window under Inventory, as shown in the following screenshot:

View maintains the information required to quickly recreate the linked-clone desktop, including the desktop pool and user it was assigned to.

Recreating a desktop using a persistent disk

The following steps outline how to recreate a linked clone desktop using a previously detached persistent disk:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the Persistent Disks window under Inventory within the console, and click on the Detached tab.
3. Highlight the persistent disk you wish to use, and click on the Recreate Desktop button as shown in the following screenshot:
4. In the **Recreate Desktop** window, review the information and click on **OK**.

Since View retained information about the desktop pool to which the persistent disk was previously assigned, no further information is required in order to recreate the desktop.

**Attaching a detached persistent disk to an existing desktop**

View provides the ability to attach a detached persistent disk to an existing desktop, enabling the user of that desktop to have access to that persistent disk as well as his/her own disk. This can be useful in scenarios where someone needs quick access to the data of a departed user, and you want to accomplish the task using only the View console.

Remember that linked-clone desktops should never have their storage configuration changed from within vCenter, as this can render the desktop unmanageable by View. Always use the View Manager Admin console to make changes that affect the linked-clone storage configuration.

The following steps outline how to attach the detached persistent disk to an existing desktop:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Persistent Disks** window under **Inventory** within the console, and click on the **Detached** tab.
3. Highlight the persistent disk that you wish to use and click on the **Attach** button, as shown in the following screenshot:

   ![Persistent Disks Window](image)

<table>
<thead>
<tr>
<th>Persistent Disk</th>
<th>User</th>
<th>Last Pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>DT-LC-6-vdm-user-disk-D</td>
<td>vjason.local\pmaritz</td>
<td>LC-Pool</td>
</tr>
</tbody>
</table>

For More Information:

4. In the **Attach Persistent Disk** window, select the desktop that you wish to assign the disk to and click on **OK**. Only desktops with assigned users will appear in the list of choices.

The persistent disk will be attached to the existing desktop and the contents will be accessible to the user whose desktop it was assigned to.

**Importing a persistent disk**

To support a wider range of recovery scenarios, View supports importing persistent disks and using them to create a new desktop. An imported persistent disk will not have any owner or desktop pool information, so the View Administrator will have to choose a new owner and desktop pool. This can be useful in scenarios where an organization wishes to retain persistent disks offline or on secondary storage that is not attached to the View infrastructure.

The following steps outline how to import persistent disks and use them to create a new desktop:

1. Log in to the View Manager Admin console using an AD account that has administrative permissions within View.
2. Open the **Persistent Disks** window under **Inventory** within the console, and click on the **Detached** tab.
3. Click on the **Import from vCenter...** button as shown in the following screenshot:

4. In the **Import Persistent Disk From vCenter** window (shown in the following screenshot), select the appropriate resources including:
   - **vCenter Server**: Target vCenter server
   - **Datacenter**: Target vCenter datacenter object
   - **Linked-clone pool**: Pool where the linked clone will be created
   - **View Folder**: Optional; destination folder for the virtual machine object

For More Information:
Persistent Disk File: The file you will be importing

User: The user who will be assigned the desktop that will use the persistent disk

5. Click on OK to import the persistent disk and associate it with the linked-clone desktop.

To access the data on the imported persistent disk, the user it was assigned to will need to log in to the newly configured desktop.

Summary

In this chapter, we have learned about different View Composer linked-clone maintenance operations. We discussed each of these maintenance tasks and went through the examples of how they are used.

We learned about linked-clone refresh, recompose, and rebalance operations. We learned about what they are for and what to be aware of concerning their use; we then went through the operation of each. We also learned about persistent disk maintenance, including how to detach them from existing desktops, how to reattach them, and how to use them to recreate a new linked-clone desktop.

In the next chapter, we will discuss how to create a virtual desktop master image, an important task that requires careful consideration and planning.

For More Information:
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