Citrix XenClient 1.0

Proof of Concept Implementation Guide
# Contents

Introduction .......................................................................................................................... 3

Hardware and Software Requirements .................................................................................. 3

Installation and Configuration .............................................................................................. 4

Section 1: Citrix XenClient and Receiver for XenClient ............................................................. 5

  XenClient Initial System Configuration .............................................................................. 5

  XenClient Installation ........................................................................................................ 6

  XenClient Configuration .................................................................................................... 9

  Virtual Machine Creation and Configuration .................................................................... 12

Section 2: Synchronizer for XenClient .................................................................................... 17

  Synchronizer Installation ................................................................................................. 18

  Synchronizer Configuration .............................................................................................. 21

  Synchronizer Administration ............................................................................................ 30

  User Administration .......................................................................................................... 31

  Repository Administration ................................................................................................. 33

  Register and Upload XenClient Virtual Machines to Synchronizer .................................... 34

  Virtual Machine Authoring ............................................................................................... 44

Conclusion ............................................................................................................................ 47

Appendix A – Shortcuts .......................................................................................................... 48

Appendix B – Unregister with Synchronizer ......................................................................... 48

Appendix C – Generate Status Report .................................................................................. 48
Introduction

Desktop virtualization is gaining rapid momentum in the IT industry, but the needs of the mobile laptop user community can be difficult to address with the current desktop virtualization offerings. This mobile laptop user community is cumbersome to manage, support and secure making traditional methods of desktop delivery difficult. Within a mobile laptop there is a constant risk that corporate data security is heavily dependent on individual user behavior and IT has less control over mobile devices since not all laptops are always part of the corporate network. Citrix XenClient, a local desktop virtualization platform that provides new levels of security, performance, and user flexibility presents a new desktop delivery approach. Citrix XenClient enables IT administrators to deliver each employee’s corporate desktop into a secure virtual machine (VM) that runs directly on that user’s computer and also allows users to run their personal desktop VM on the same computer in complete isolation.

With the release of Citrix XenClient 1.0, customers and partners can take a firsthand look at this new technology. A simple evaluation of XenClient can be performed with just a single laptop by installing the XenClient software on the device. Virtual machines can be created and configured using Windows media. To experience the central configuration and deployment capabilities the Synchronizer for XenClient can be added. This Implementation Guide provides step-by-step instructions for implementing a successful XenClient 1.0 Proof of Concept (PoC) environment based on XenClient, Receiver for XenClient, and Synchronizer downloads available on www.citrix.com/xenclient/tryit.

Hardware and Software Requirements

Citrix XenClient was designed and developed based on a strong partnership with Intel and the Intel vPro™ technology for notebook and desktop PCs. Therefore, Intel vPro with VT-x and VT-d are required for the installation of XenClient on a laptop or desktop PC. For a complete list of compatible laptops and laptop-model specific setup instructions, please refer to www.citrix.com/xenclient/hcl.

In preparation for executing all the steps outlined in this PoC Implementation Guide, the following components will be required in advance of executing the steps in this guide:

- **Laptop or Desktop PC for XenClient**: A list of XenClient ready devices can be found at http://www.citrix.com/xenclient/hcl

- **XenServer for the Synchronizer**: A XenServer machine is required to import the Synchronizer VM. Information on XenServer can be found at http://www.citrix.com/XenServer. XenCenter will be used to manage the XenServer and access the Synchronizer VM console.
• **XenClient Installation Media:** The XenClient Installation Media will need to be downloaded from [www.citrix.com/xenclient/tryit](http://www.citrix.com/xenclient/tryit) and burnt to a CD for the bare-metal hypervisor installation.

• **Windows 7, Vista or XP Installation Media:** Windows Installation Media will be required to build the virtual machines hosted on XenClient.

**Installation and Configuration**

The purpose of this document is to provide step-by-step instructions for the implementation of each component within the Proof of Concept environment. Based on the dependencies of each component, the document is divided into the following sections for each step of the installation process:

• **Section 1: Citrix XenClient and Receiver for XenClient** – This section demonstrates how to install and configure the stand-alone XenClient software, create virtual machines capable of running on XenClient and manage the virtual machines with Citrix Receiver for XenClient.

• **Section 2: Synchronizer for XenClient** – XenClient can run independent of Synchronizer, but this section displays how to install and configure the Synchronizer to centrally manage the virtual machines available within the XenClient environment as well as provide instruction on how to register and assign XenClient virtual machines with the Synchronizer.
Section 1: Citrix XenClient and Receiver for XenClient

At the heart of Citrix XenClient is a high-performance, bare-metal Xen hypervisor that runs directly on the device hardware and uses Intel hardware-assisted virtualization, as shown in the following diagram:

![Citrix XenClient Device](Image)

**Figure 1: Citrix XenClient Architecture**

The XenClient software requires a Control Domain and Service VM running on the Xen hypervisor to manage all the end-user virtual machines.

- **Control Domain VM**: The Control Domain VM is a specially privileged virtual machine running on top of the hypervisor and controls all interaction between the virtual machines and the physical hardware. The end user is unable to access the Control Domain VM.
- **Service VM**: The Service VM is an end-user VM that boots on system start up and provides a user interface that communicates directly with the Control Domain over a secure channel. The Citrix Receiver for XenClient implements the Service VM architecture.

The steps required to install XenClient with the Control Domain and Citrix Receiver for XenClient are all encapsulated in this section:

**XenClient Initial System Configuration**

The first step in installing XenClient is to ensure that your computer has the correct settings. Please ensure the following BIOS settings are enabled:

- SATA is setup to use AHCI mode
- Intel® Virtualization Technology is enabled
- The Intel® VT-d and VT-x features are enabled
• TXT (Trusted Execution Technology) and TPM (Trusted Platform Module) are disabled

After making the changes in the BIOS, ensure that the system has been completely rebooted before moving forward with the XenClient installation.

XenClient Installation

There are several ways to install XenClient, but for the purposes of this Proof of Concept environment, XenClient will be installed from a CD using the Quick Install instructions documented in the User Guide on the Citrix Knowledge Center. XenClient is a bare-metal installation, so all existing data on the hardware will be deleted during this installation.

<table>
<thead>
<tr>
<th>XenClient Installation</th>
<th>Description</th>
</tr>
</thead>
</table>
| Screenshot 1 | • Insert the CD created from the media download on Citrix.com  
• Select the Quick Install option |
| Screenshot 2 | • Select OK |
Select OK after reviewing the License Agreement

Select YES if you agree with the Licensing terms

Select the Keyboard Layout and choose Select
Select Verify to validate the installation CD
• Enter a password for the system
• Select OK, and then re-enter the password for verification

• Select **Continue** to begin the installation
• XenClient and the Citrix Receiver for XenClient will install during this process

• Select **Continue** after the installation completes successfully
XenClient Configuration

Once XenClient is successfully installed and the system has been rebooted, the Citrix Receiver for XenClient user interface is presented. All XenClient system wide operations are performed from this interface using the following instructions:

<table>
<thead>
<tr>
<th>Initial XenClient Configuration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Screenshot</strong></td>
<td><strong>Description</strong></td>
</tr>
<tr>
<td><strong>1</strong></td>
<td>・Within the XenClient console, select <strong>System</strong> on top right corner to configure the XenClient system properties</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>・Select the desired <strong>Wallpaper</strong> image</td>
</tr>
<tr>
<td></td>
<td>・Select <strong>Save</strong> to see the new wallpaper</td>
</tr>
</tbody>
</table>
• Select the Power option to configure desired **Lid Close Action** for the XenClient device
• Select **Save** to activate the changes

• Select the Input option to configure **Touchpad Options** and **Touchpad Speed**
• Select **Save** to activate the changes

• By default, there is no password required during XenClient startup
• Select the **Login** option to configure **XenClient startup password** feature
• Also specify **Screen lock timeout** value
• Select **Save** to activate the changes

*Note: Software, Hardware, Networking and Diagnostics are information only screens.*
Within the XenCenter console select **Network** on top right to configure both Wired and Wireless networks for the XenClient device.

Available wireless networks are displayed and new wireless networks can be created by clicking on by **Create New Wireless Network**.

To view Active Network Connection Information, Right Click on Network and select **Connection Information**.

Information about the **Active Network Connections** is displayed as shown.
Virtual Machine Creation and Configuration

There are two types of virtual machines defined on XenClient – Unmanaged and Managed virtual machines.

- **Unmanaged**: VMs that are not registered with the Synchronizer and managed independently by end users are defined as Unmanaged VMs.

- **Managed**: VMs that are centrally configured, registered with the Synchronizer and managed by an administrator are defined as Managed VMs.

There are two ways to add VMs on XenClient. The first method is to run the installation from the operating system installation disc directly on the XenClient device. The second method is to download a preconfigured VM from the Synchronizer to the XenClient device.

*Note: Mobile Broadband and DSL network are not currently supported with the XenClient 1.0 RC version.*
End users can download their assigned (Managed) VMs from the Synchronizer to their local XenClient, but then also use installation media, like the Windows 7 install media, to create a local Unmanaged VM running on the same XenClient device as the Managed VM. This allows each VM to run completely isolated from the other VMs; therefore, allowing a corporate mandated VM on the same machine as a personal VM.

To create a Managed VM for multiple users, the IT administrator can perform an initial one time VM installation from disc and register it with the Synchronizer to centrally assign VMs to multiple users. Follow the instructions shown below to install a virtual machine from disk and perform the initial configuration tasks:

<table>
<thead>
<tr>
<th>Virtual Machine Creation and Configuration</th>
<th>Description</th>
</tr>
</thead>
</table>
| **1** | • Click on Add VM on top left  
| | • Select Create from Install Disc option  
| | • Select the Type of VM that matches the Install Disc from the drop down  
| | • Enter a VM Name for the machine  
| | • Enter a Description for the machine  
| | • Select the Icon that will appear in the Citrix Receiver for XenClient display for this machine  
| | • Select Next  

<table>
<thead>
<tr>
<th>Screenshot</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="image">Citrix Receiver for XenClient</a></td>
<td>1</td>
</tr>
<tr>
<td><a href="image">Create from Install Disc</a></td>
<td>2</td>
</tr>
</tbody>
</table>
3. Enter the Memory settings (Default recommendations will be displayed)
   - Enter the number of virtual CPUs
   - Select Next

4. Enter the Virtual Disk Size
   - Select the Wired Network connection
     - Bridged: VM has full access to the same networks as host
     - Shared: Creates a private network for VM and only allows outbound connections using NAT
     - Internal: Only allows network communication between VMs
   - Select Next

5. Select Start VM & Install OS to begin the installation
   - Select Finish
6. VM installation will begin from install disc
   - Complete installation per Operating System instructions

   *Note: Refer to Appendix A for all shortcuts to toggle between VMs and XenClient interface.

7. After the installation is complete and the VM reboots, XenClient Tools need to be installed on the VM
   - Select the Detailed View button from the XenClient menu to view the details about the newly created VM

8. Under the General Tab, click the Edit button
   - Change the Tools CD dropdown to show Attached (This will allow the VM to recognize physical CD drive)
   - Select Save

9. Within the VM, browse to the Virtual Tools CD drive (E drive in this example)
   - Run the Setup.exe to install XenTools
   - Reboot, if prompted
• Select the checkbox to agree to the License Agreement
• Select Install to start the XenTools installation process

• Select the checkbox next to “Always trust software from Citrix Systems, Inc.”
• Select Install

At this point, Citrix XenClient, Citrix Receiver for XenClient and an Unmanaged VM have all been successfully deployed. The next step in the Proof of Concept is to import the Synchronizer onto a XenServer and upload the newly created VM to the Synchronizer for distribution.
Section 2: Synchronizer for XenClient

Synchronizer for XenClient allows centralized management and distribution of VMs to XenClient devices. With the Synchronizer, IT administrators can centrally backup user data through a secure connection over the internet, define security policies for VMs, disable Managed VMs on lost or stolen XenClient laptops and restore a user’s virtual desktop on any XenClient based laptop.

Figure 2 displays the architecture and communication between Citrix XenClient and Synchronizer. For the PoC environment, Synchronizer for XenClient is a virtual machine running on Citrix XenServer. As shown in Figure 2, the XenClient device is registered with Synchronizer over https. In an Active Directory environment, Synchronizer can be joined to the domain. Once Synchronizer is part of the domain, domain users can be linked to from the Synchronizer UI. This allows Synchronizer to assign specific XenClient VMs to a particular AD user or user group allowing IT administrators to leverage Synchronizer to centrally provision VMs.

Figure 2: Citrix XenClient and Synchronizer Architecture
Synchronizer Installation

Synchronizer for XenClient VM must first be downloaded from Citrix.com and imported into an existing XenServer that can communicate with the XenClient device from Section 1. This Implementation Guide does not provide instructions for installing and configuring XenServer, but they can be found in the XenServer Installation Guide. Once a XenServer is available and accessible via XenCenter, follow the steps outlined below to import the Synchronizer VM:

<table>
<thead>
<tr>
<th>Synchronizer Installation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Screenshot 1" /></td>
<td>1. Right click on the XenServer host and select Import VM</td>
</tr>
</tbody>
</table>
| ![Screenshot 2](image2.png) | 2. Browse to the location of the Synchronizer 1.0 xva VM that was downloaded from Citrix.com  
| | 3. Leave the Import type as Exported VM  
| | 4. Select Next |
- Select the XenServer host as the **Home Server**
- Select **Next**

- Determine the appropriate Storage location for the VM based on the XenServer configurations (20GB is the default size of the VM)
- Select **Import**

- Leave the defaults and select **Next**
- Ensure the **Start VM after import** checkbox is selected
- Select **Finish**

*Note: The import process will take a few minutes and can be tracked within the XenServer Logs tab.*
Synchronizer Configuration

A complete Administrator’s Guide for Synchronizer is available on the [Citrix Knowledge Center](https://www.citrix.com). After Synchronizer has been imported to XenServer, use the Console tab on XenCenter to access the Synchronizer CLI to configure Synchronizer for the Proof of Concept environment as shown in the following steps:

<table>
<thead>
<tr>
<th>Synchronizer Configuration</th>
<th>Screenshot</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><img src="image1.png" alt="Screenshot" /></td>
</tr>
<tr>
<td>Before you can configure the Synchronizer, the installation setup requires some information. This is required only the first time that the Synchronizer VM boots up.</td>
<td></td>
</tr>
<tr>
<td>To start, enter a password for command line administrator access to the Synchronizer as user &quot;root&quot;. Then enter the hostname for the Synchronizer VM. Refer to the administration guide for more information.</td>
<td></td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><img src="image2.png" alt="Screenshot" /></td>
</tr>
<tr>
<td>Please specify a root password:</td>
<td></td>
</tr>
<tr>
<td>Enter new UNIX password:</td>
<td></td>
</tr>
<tr>
<td>the Synchronizer VM boots up.</td>
<td></td>
</tr>
<tr>
<td>To start, enter a password for command line administrator access to the Synchronizer as user &quot;root&quot;. Then enter the hostname for the Synchronizer VM. Refer to the administration guide for more information.</td>
<td></td>
</tr>
</tbody>
</table>

- When Synchronizer is first powered on, the following prompts will appear
- Specify Synchronizer system password

- Specify Synchronizer system hostname
3. Configure Host (A) records for Synchronizer on DNS

4. Example Host Record Entry

5. Select I if you agree to the License Agreement
6. Select OK to change the DNS name of the Synchronizer.

7. Enter hostname.domain as the DNS name (The DNS name is the FQDN from Step 4 on DNS).
   Select OK.

8. Select OK to configure the static IP address.
9. Select OK

10. Enter the static IP address and select OK

11. Enter subnet mask and select OK
12. Enter default gateway and select **OK**

13. Enter name servers, in order of preference. Use **TAB** and select **Edit** to add a name server, **ENTER** to accept. Select **OK** to advance.

14. Select **OK**
• Select OK to configure self-signed certificate

*NOTE: 3rd party certificate installation is unsupported with Synchronizer for XenClient 1.0)

• Use arrow keys after entering values to advance to the next field. Hit TAB and select OK

• Select Yes to password protect the self-signed certificate’s private key. It is recommended that you do so.

*NOTE: every time the Synchronizer webserver starts, you will be prompted to enter this password
To join a domain, highlight **Windows AD Domain** and select **OK**.

Select **Yes**.

DNS needs to be configured for domain name lookup.

- Enter the **Domain name**, **Username** and **Password** to join to the domain.
- Select **OK**.

*Note: Arrow keys need to be used to move between input fields.*
• Change Synchronizer local admin password for enhanced security by selecting YES

• Enter new password
• Select OK

*Note: Arrow keys need to be used to move between input fields

• To complete the install, highlight Install now and select OK
24.

• Select Yes

25.

• Enter password to protect self-signed certificate’s private key

26.

• Enter the password in the previous step when the webserver is started up
Synchronizer Administration

After Synchronizer installation and configuration is complete, Synchronizer can be utilized to manage the following components of this XenClient environment:

- **Users**: A Synchronizer user can be either a Microsoft Active Directory (AD) user or a local user created in Synchronizer. Synchronizer keeps track of the relationship between users, their registered devices, and the desktops (VM images) assigned to them.

- **Devices**: A device is a computer that has XenClient installed on it. Secure communication between devices and Synchronizer is enabled when the device is registered with Synchronizer.

- **Images**: An image is a VM image that can be made available to users. Images consist of image files stored in the Microsoft Virtual Hard Disk (VHD) format with policy and configuration information describing how the VM should act when deployed on the client device.

- **Assignments**: An assignment allows a user to instantiate a specific image version on their device as a VM by downloading it on their registered XenClient device.

Administering Synchronizer consists of managing images, devices, users and groups. The following sections will outline some of the select features associated with Synchronizer management:
User Administration

When the Synchronizer is first installed, only the local administrator account has access to the Synchronizer Web UI. The following section outlines how to add users to Synchronizer as both users and administrators:

<table>
<thead>
<tr>
<th>Synchronizer User Administration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><img src="image1.png" alt="Screenshot" /></td>
</tr>
</tbody>
</table>
| ![Screenshot](image1.png) | - Access Synchronizer Web UI over http(s) using one of the following URLs:  
  - https://<Synchronizer FQDN>  
  - https://<Synchronizer IP>  
- Login using local synchronizer credentials  
  - User Name: admin  
  - Password: (From Synchronizer Configuration)  
- Select Log On |
| **2** | ![Screenshot](image2.png) |
| ![Screenshot](image2.png) | - A welcome screen is displayed that gives an overview of the workflow. You can dismiss it and revisit the welcome screen from Settings  
- Note: When the Synchronizer interface is first loaded, only the administrator user is listed, and there are no desktops or devices registered. To navigate through the Synchronizer interface, click on the buttons along the top. |
| **3** | ![Screenshot](image3.png) |
| ![Screenshot](image3.png) | - Click on Users to add new local users and link existing Active Directory users |
Click on the down arrow on the **Add Local User** button and select **Add Link to AD User** to add users from the domain.

Enter username of the desired user account.
Select the **Admin Role** if the user is to administer the Synchronizer, and upload VMs from XenClient to the Synchronizer.

Click on the down arrow on the **Add Local Group** button and select **Add Link to AD Group** to add all the users in a single AD group from the domain.

Enter group name of the desired user group.

*Note: Only the group will be displayed. Each individual user of the group will not be added to the users tab.*
Repository Administration

The next important step before registering virtual machines with Synchronizer is to determine the location or repository that will be used to store the virtual machine images for XenClient device distribution. The Synchronizer VM is 20GB in size with a virtual disk partition of 18GB for a local image repository; therefore, the following steps outline how to add additional repositories:

<table>
<thead>
<tr>
<th>Synchronizer Repository Administration</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="Image" alt="Screenshot" /></td>
</tr>
<tr>
<td>2</td>
<td><img src="Image" alt="Screenshot" /></td>
</tr>
<tr>
<td><strong>1.</strong> Click on the <strong>Settings</strong> button on top right to add or edit a Repository</td>
<td></td>
</tr>
<tr>
<td><strong>2.</strong> Select <strong>Add Image Repository</strong> to identify an NFS file share to store images</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Enter the name of the repository, the IP address of the NFS Server, the path to the share, and ignore the Mount options</td>
</tr>
<tr>
<td></td>
<td>• Select <strong>OK</strong></td>
</tr>
</tbody>
</table>
Register and Upload XenClient Virtual Machines to Synchronizer

At this point, the Synchronizer is ready to register XenClient devices and store centralized virtual machines for distribution. Currently, there are no virtual machines stored in the Synchronizer. To upload and register the Unmanaged virtual machine created in Section 1: Virtual Machine Creation and Configuration follow the steps mentioned below register the XenClient device with Synchronizer, upload the previously created XenClient VM to Synchronizer and assign the newly Managed virtual machine to users with the appropriate policies configured.

<table>
<thead>
<tr>
<th>Register and Publish XenClient Virtual Machines with Synchronizer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On the XenClient device, click on the System icon</td>
</tr>
<tr>
<td>2</td>
<td>Select Register in the Synchronizer tab</td>
</tr>
<tr>
<td>3</td>
<td>Enter Synchronizer Host Name (ex syncvm.xcdemo.lab)  Select Next</td>
</tr>
</tbody>
</table>

*Note: Make sure the Synchronizer hostname and IP is correctly resolved from the XenClient device.*
You will be asked to verify the identity of the Synchronizer server via a certificate signature hash. Make sure this matches the code presented in Step 27 of the Synchronizer Configuration.

Press **CTRL+ALT+BACKSPACE** to enter Synchronizer administrator credentials securely.

Enter the Synchronizer administrator credentials (admin, and password from Synchronizer Configuration step 22)

Confirm registration completed

Select Close
- Switch over to the Synchronizer UI
- The device is now displayed under Synchronizer Devices

- Switch over to XenClient device
- From the XenClient console, select the Detailed View icon
- Expand the View Details section for the previously created VM

*Note: Once the XenClient device is registered with the Synchronizer, VMs from the machine can be uploaded.

- Select the Synchronization tab and click Upload VM

*Note: The Upload VM button will only appear if the user is an Administrator on the Synchronizer
• Enter a new VM Image Name and Description if you want to change them
• Leave the image mode as Static (Dynamic image mode is experimental and not covered in this guide)
• Select Finish

• The VM transfer progress is tracked in the top left corner next to the VM icon

• Once the transfer process completes, switch over to Synchronizer
• Select the Images button and notice that the new VM appears
The next step is to assign the appropriate users to the uploaded image.

- Click on Images and select the device you want to assign.
- Click Assign and the Assign VM Image wizard will appear as shown.
- Select dropdown to Assign to a User or Group.
- Populate the User dropdown with either the user name or group name.
- Select Continue.

Select the image Version you want to assign.

Select Continue.
Select **Settings**
Select **Enabled** on **Auto Backup Frequency** if you want auto backups of the VM
Select **Allow Manual Backups** if the assigned user should be able to manually backup the VM
Select **Allow Authorship** if the assigned user should be able to create and upload new versions of the VM

Select **System resources**
If necessary, make changes to the **Memory** or **Virtual CPUs**
- Select **Disk Encryption**
- Enable **Disk Encryption** if the VM should be encrypted on the assigned user’s registered XenClient device

- Select **USB permissions**
- Enable or disable USB permissions based on security requirements
- Select **Network permissions**
- Configure access to Wired and Wireless networks

- Select **Other hardware permissions**
- Configure appropriate hardware permissions
- Select **Finish**
Select Users and then assigned user to see the VM available to them under Available Assignments.

Switch over to the XenClient device.
Once the user is assigned to a desktop VM, the user can download the VM from Synchronizer to the XenClient after registering with the Synchronizer.
Click Download from Synchronizer.

Alternately, user can click Add VM on the top left corner, and select Download from Synchronizer.
- From the display, select the VM to download
- Select Finish to complete downloading

- Downloaded VM displays in XenClient console
Virtual Machine Authoring

An administrator often needs to update an existing VM by changing configurations, installing new applications or removing old applications. The VM authoring feature allows an administrator to update VMs with changes and create new versions. All versions of the VMs are maintained by Synchronizer by uploading the delta between the different versions. This process streamlines the transfer time and supports efficient use of storage for multiple versions of VMs. In addition, it allows an administrator to assign different versions to multiple users as appropriate.

The administrator can also assign certain users with VM authoring rights when assigning the desktop as seen in the Register and Upload XenClient Virtual Machines with Synchronizer section above. Once the VM is updated with the required changes, the following instructions need to be followed to create a new version:

<table>
<thead>
<tr>
<th>Screenshot</th>
<th>Description</th>
</tr>
</thead>
</table>
| ![Screenshot](image1) | **1**  
- On the XenClient device, expand the VM details  
- Click on the Synchronization tab to view the VM Authoring section  
*Note: VM Authoring is only displayed for VMs and users that have Allow Authorship enabled during desktop assignment. This setting can be enabled by editing the Assigned Desktop properties from the Synchronizer.**  
- Select Next  

*Note: This guide leaves the name unchanged to create a new version of this desktop. To create a first version of a brand new desktop, simply specify a new name.*
4. Switch over to the Synchronizer
   - Select the **Activity** button on the Synchronizer interface
   - The **Active Transfers** tab displays the **Progress** bar while the VM upload is taking place

5. Once the new version has been uploaded, select the **Images** button
   - Under **Images**, the Windows 7 VM now has two versions

6. Click on the VM to display all VM versions available for assignment
To assign the new version to a user, click on Users

Click on the user you want to move to the new version

Click Edit under the View button for the VM you want to assign the next version of

In the Assign VM Image wizard, select the next version from the Version drop down

Click Continue to modify other policies if needed, till you get the Finish button

At this point, the XenClient device and Synchronizer are successfully communicating with each other and virtual machines can be transferred from the XenClient device to Synchronizer and the reverse.
Conclusion

The purpose of this document was to provide IT administrators with a step-by-step guide to assist in developing a detailed understanding of the potential of a XenClient local VM desktop solution. To develop a broader understanding of all things XenClient related, please visit the XenClient Product Page, XenClient Support Forum and XenClient Central for technical videos on the creation of XenClient, blog posts from the Product Management team, and customer feedback on their experiences with XenClient.
Appendix A – Shortcuts

The following table lists the shortcut keys

<table>
<thead>
<tr>
<th>Operation</th>
<th>Shortcut key</th>
</tr>
</thead>
<tbody>
<tr>
<td>To access Receiver for XenClient interface</td>
<td>CTRL+0</td>
</tr>
<tr>
<td>To access VMs.</td>
<td>CTRL+ VM-Slot number For example, CTL+1 for VM in slot 1. i.e for 1st installed VM.</td>
</tr>
<tr>
<td>To access XenClient command line</td>
<td>CTRL+SHIFT+t</td>
</tr>
</tbody>
</table>

Appendix B – Unregister with Synchronizer

A XenClient device can only be registered with a single Synchronizer. If the XenClient device is unregistered from Synchronizer, all the Managed VMs will be deleted from the XenClient device. The following script must be run from the CLI on the XenClient device to unregister:

```
/etc/bed-deregister
```

Appendix C – Generate Status Report

Status reports can be generated from both XenClient device and Synchronizer for troubleshooting purposes. You can also generate a status report from the XenClient installer during the install process for installer troubleshooting purposes.

<table>
<thead>
<tr>
<th>Installation</th>
<th>Screenshot</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><img src="image.png" alt="Screenshot" /></td>
<td>• While the installer is running, press ALT+F7 • Select Continue</td>
</tr>
</tbody>
</table>
- Press the down arrow to enter a description and then TAB
- Select OK

- Press TAB and select Web Server to download the status report onto another machine with a browser of your choice

- Once you have downloaded the status report, press ENTER
- Press TAB and select **Shut down**

- Select **Shut down** to shutdown the XenClient device

- From the XenClient console (accessible via CTL+SHIFT+t), run the **status-report** command

- Enter **Yes** if screenshots should be included in the report
- Enter a **Summary** and **Details** describing the status report.
- Press **Enter** after each step and it will begin Generating Report.

- Run the command `status-server` and download the newly generated status report from http://<XenClient device IP>
- Press **Enter** to stop the server at port 80

- Status report can be generated on the Synchronizer by clicking Generate Report tab under the Settings button.
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