Zerto Virtual Replication releases regular updates. VMware and Microsoft also release new versions of their products which can impact Zerto Virtual Replication. This document describes different options for different upgrade scenarios.

The following topics are described in this chapter:

You can upgrade Zerto Virtual Replication silently, by running the **silent installation**. For details, see the *Zerto Virtual Replication Installation Guide* which is relevant for your environment.

Guidelines to Upgrading Zerto Virtual Replication

- Zerto recommends upgrading to the **latest version** of Zerto Virtual Replication that supports the environment you are using. Refer to the Zerto Virtual Replication Interoperability Matrix for the list of environments supported by this version of Zerto Virtual Replication.
- The **order** you upgrade the sites, protected or recovery, is not relevant as long as **paired sites** remain only one version apart, that is, only **one version higher or lower**.

  Note: Upgrade releases are considered to be upgrades of the same version. Releases 4.5, 4.5U1, etc., are the *same* version.

- The following table shows what version you can **upgrade to**, based on the **current version** running at the site.

CURRENT VERSION:	CAN UPGRADE TO:
4.0, 4.0Ux	4.5Ux
4.5, 4.5Ux	5.0Ux

- A Zerto Virtual Manager can be used with a **different version on another site**, as long as the other version is only **one version higher or lower**.
- You can upgrade from version n to the next version (n+1) of Zerto Virtual Replication including to any update *within* the current version. You cannot do an n+2 upgrade directly.

  The following table shows what versions can be used on a **peer site**, based on the version on the **current site**.

VERSION N (THIS VERSION)	VERSION (N-1)	VERSION (N+1)
4.0Ux	3.5Ux	4.5Ux
4.5Ux	4.0Ux	5.0Ux
5.0Ux	4.5Ux	N/A

  If a newer version of the installed VRAs exists, you can **continue to use the current VRAs** with the new version of Zerto Virtual Replication, **or upgrade** these VRAs from within the Zerto User Interface, as described in "Upgrading VRAs", on page 6.

See the following sections:

Upgrading Environments Using Zerto Cloud Manager

For environments using the Zerto Cloud Manager you must:

■   Upgrade the **Zerto Cloud Manager** to be **consistent** with the latest version of **Zerto Virtual Replication** run by the **CSP**.

■   Upgrade the version of **Zerto Virtual Replication** run by the **CSP** before Zerto Cloud Manager, so that they are **never** more than one version separated from each other.

In other words, the **Zerto Cloud Manager** version should be: N or N+1, where N is the ZVM version.

For details about upgrading Zerto Cloud Manager, see *Zerto Cloud Manager Installation Guide*.

Note: Zerto no longer supports vCenter Server vApps. Any VPG protecting a vAPP should be recreated using the virtual machines in the vApp. When upgrading to 5.0Ux, if there is a VPG protecting a vCenter Server vApp, the following error appears, and the upgrade is stopped: *Zerto no longer supports protection of vCenter Server vApps. Create a new VPG with the virtual machines from the vApp added separately to the VPG.*

Before Upgrading Zerto Virtual Replication

Before upgrading to a new version, either by installing the new version over the existing version or by uninstalling the existing version and then installing the new version, Zerto recommends doing the following:

■   **Clear the Microsoft Internet Explorer cache** of temporary Internet files. Not clearing the cache of temporary files can result in problems when accessing the Zerto Virtual Manager.

■   Make sure that all VPGs are in the **state Protecting**, and not in a sync state, such as `Delta Sync`, or in an error state, such as `Needs Configuration`.

■   **Complete any recovery operation** before starting the upgrade.

■   **Stop** the **Zerto Virtual Manager service**.

■   Create a **backup** of the **machine where the Zerto Virtual Manager runs**, which you will use if the upgrade fails. Zerto recommends taking a snapshot of the machine after stopping the Zerto Virtual Manager service.

    Note: The snapshot should only be used to rollback to the pre-upgrade state immediately after the upgrade has completed. The snapshot should not be used after the protection of virtual machines has restarted.

The installation procedure checks for an existing installation that is either one version lower than the new version or is the same version. If an installation is found you can upgrade the installation.

Upgrading the Current Installation

The **existing** Virtual Replication Appliances and protected virtual machines, together with all other information, such as checkpoints, journals, sites, and pairing details, are **retained and are available in the upgraded installation**.

The upgrade is performed **without disrupting the protection**, but **no new checkpoints** are written to the journal during the actual upgrade.

This may temporarily cause alerts to be issued, even if only a single site was affected, stating that the journal history and RPO do not meet their specified target settings.

Note:
■   **VRAs** from the **existing** installation are **not automatically upgraded** when upgrading Zerto Virtual Replication.
■   Zerto recommends that you always upgrade the VRAs on your site to the latest version.
■   If a newer version of the installed VRAs exists, you can **continue to use the current VRAs** with the new version of Zerto Virtual Replication, **or upgrade** these VRAs from within the Zerto User Interface.

To upgrade the version:

1. Run the Zerto Virtual Replication installation executable for vSphereHyper-VAzureAWS.

    The Zerto Replication Installation Wizard is displayed.

2. Select *Upgrade* and click *Next*.

    The upgrade proceeds automatically.

3. Proceed to **completion**.

Note: If the vSphere Client console was open during the upgrade, close it and reopen it.

Upgrading Multiple Sites Running Different Versions

A Zerto Virtual Manager can be installed on a site running a different version, as long as each version is **only one version higher or lower** than the other.

When you have **multiple sites**, make sure that the version of Zerto Virtual Manager is never more than one version higher or lower than any of the versions running on the **paired sites**.

To upgrade Zerto Virtual Replication installed on multiple sites:

1. Upgrade a site whose version is lower than the required version. Start the upgrades with the site whose version is **lowest**.

    Make sure, at all times, that **no site is more or less than one version** higher or lower than any of the **paired sites**.

2. If the VRAs on the site need upgrading, upgrade these VRAs to ensure that they are no less than one version higher or lower than any of the VRAs on any of the paired sites.

3. Repeat the above step for **all sites**.

For Example:
■   You have sites running versions 4.0U3, which are paired to a site running 4.5U4.
■   You are planning to upgrade to 5.0U2.
■   Upgrade first, the 4.0U3 site to a 4.5U4 version, and then both of the sites to 5.0U2.

Upgrading To More Than One Version Higher

Before upgrading to a new version, make sure that all VPGs are in `Protecting` state and not in a sync state, such as `Delta Sync`, or an error state, such as `Needs Configuration`.

If you need to upgrade **more than one version higher**, do **one** of the following:

1. Upgrade versions stepwise, one version at a time, as described above in **Upgrading Multiple Sites Running Different Versions**, until you reach the required version.

    - or -

2. Use the *Zerto Diagnostics* utility's export option to *export* the existing VPG definitions, then uninstall the old version of Zerto Virtual Replication. Install the new version, then use the *Zerto Diagnostics* utility's *import* option to re-create the VPGs. Use the following procedure.

To upgrade Zerto Virtual Replication using the Zerto Diagnostics utility:

1. Click *Start > Programs > Zerto Virtual Replication > Zerto Diagnostics.*

    The *Zerto Virtual Replication Diagnostics* menu dialog is displayed.

2. Select the *Export Virtual Protection Group (VPG) settings* option and click *Next*.

   Note: Zerto Virtual Replication regularly exports settings to the *Zerto_Installation_Folder*\Zerto Virtual Replication\ExportedSettings folder. You can use the last exported file. The default location of *Zerto_Installation_Folder* is C:\Program Files\Zerto.
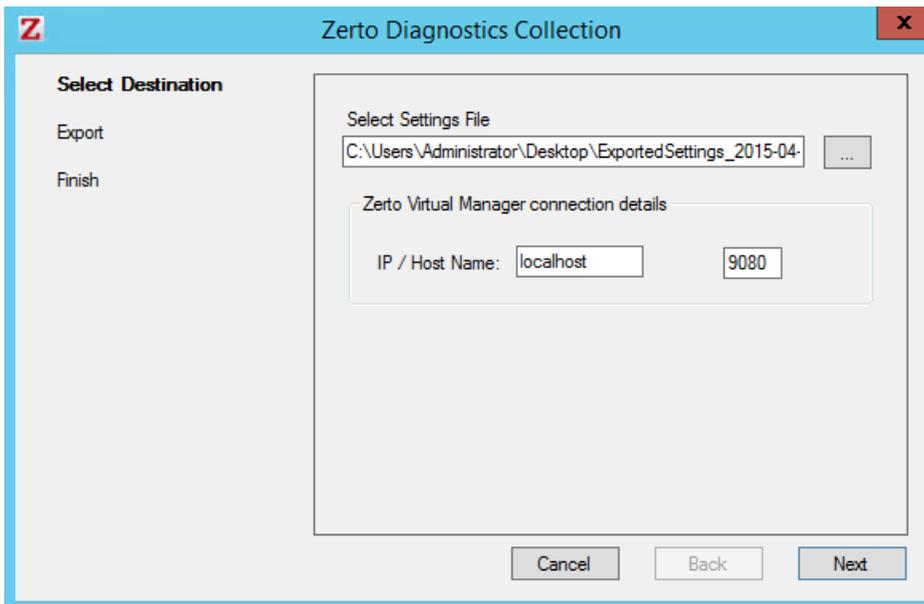

3. Select the destination for the file that will contain the exported settings and enter the Zerto Virtual Manager IP address and port for the protected site.

4. Click *Next*.

   The list of exported VPGs is displayed.

5. Click *Done*.

6. In the Zerto User Interface delete the VPGs, and keep their target disks.

   Note: If you did not export the settings, Zerto Virtual Replication regularly exports settings to the *Zerto_Installation_Folder*\Zerto Virtual Replication\ExportedSettings folder. You can use the last exported file as input to recreate the VPGs to this point in time. The default location of *Zerto_Installation_Folder* is C:\Program Files\Zerto.

7. Uninstall the existing Zerto Virtual Replication version.

8. Install the new Zerto Virtual Replication version, as described in the *Zerto Virtual Replication Installation Guide*.

9. Install the VRAs on the hosts in the site and pair the sites, as described in *Zerto Virtual Replication Installation Guide*.

Note: If the protected site and recovery site are the same for any of the VPGs that were exported, set `Enable replication to self` in the `Advanced Settings` dialog, as described in *Zerto Virtual Manager Administration Guide for the VMware vSphere Environment*.

10. Click *Start > Programs > Zerto Virtual Replication > Zerto Diagnostics*.

    The *Zerto Virtual Replication Diagnostics* menu dialog is displayed.

11. Select *Import Virtual Protection Group (VPG) settings*.

12. Click *Next*.
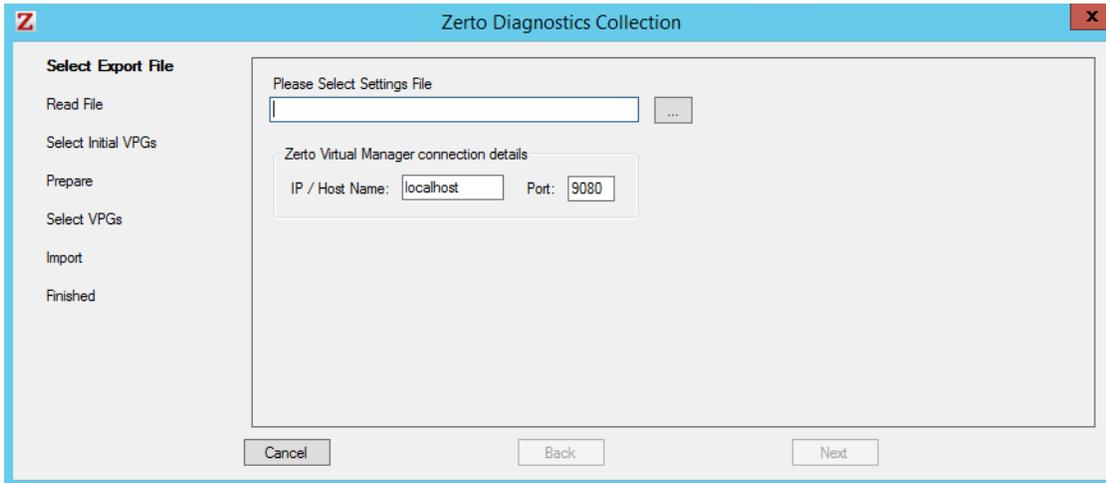
13. Select the file previously exported and enter the Zerto Virtual Manager IP address and port for the protected site.

14. Click *Next*.

    The list of exported VPGs is displayed.
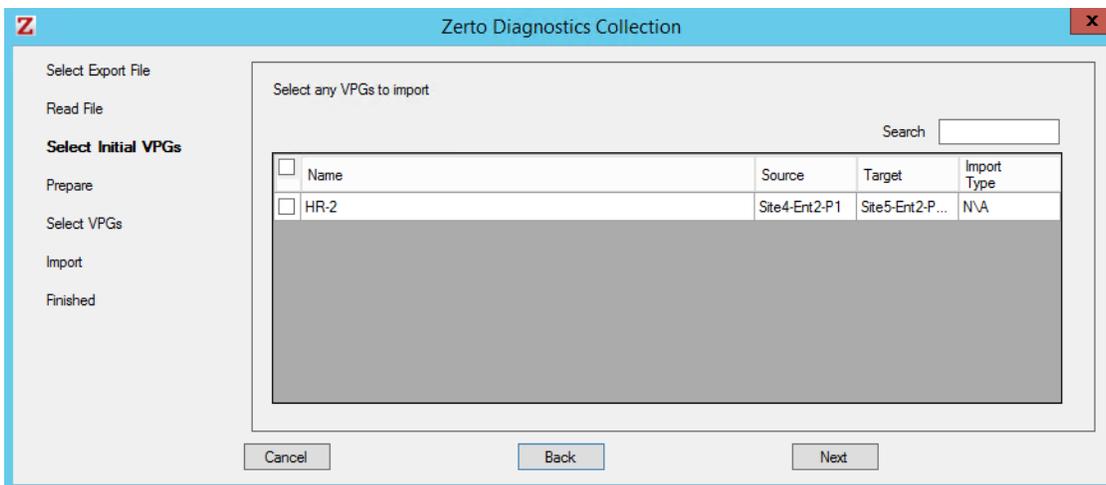
15. Select the VPGs to import. You cannot import VPGs that have the same name as a VPG that is already defined in current installation. If a VPG in the import file has the same name as an existing VPG, it is disabled and is grayed-out.

16. Click *Next*.

    The list of imported VPGs is displayed. If the VPG cannot not be imported, the reason is specified.

17. Click *Done*.

Re-installing the Current Installation

If the current version is the same as the installed version, installation options are *Reinstall* or *Uninstall*.

Note: If the vSphere Client console was open during the re-installation, close it and reopen it to ensure you use the upgraded Zerto User Interface.

When reinstalling the version, all pairing, VRAs, and VPGs defined for the site are removed. Use the ***Zerto Diagnostics*** utility *Export* and *Import* options. To save the settings, see:

Upgrading VRAs

- VRAs from the **existing installation** are **not automatically upgraded** when upgrading Zerto Virtual Replication.
- If a newer version of the installed VRAs exists, you can continue to use the current VRAs with the new version of Zerto Virtual Replication, or you can upgrade these VRAs from within the Zerto User Interface.
- VRAs installed with the previous version of Zerto Virtual Replication can work with VRAs installed with the current version of Zerto Virtual Replication in any combination (all from one version or a mix of VRA versions) as long as the VRAs are only one version lower than the version of Zerto Virtual Replication installed on the site.
- Zerto **recommends** that you **always upgrade the VRAs** on your site to the latest version.
- Not all new installations of Zerto Virtual Replication require upgrading VRAs. If your VRA is **outdated relative to your current version of Zerto Virtual Replication** and an upgrade is available, the VRA version will be reported in the column as **outdated** . In addition, an alert is issued on the site using the old VRA and on any site that is paired with it.

  Note: You can move the mouse over the `Outdated` value to display the VRA version as a tooltip.

See the following sections:

Site Specific Considerations when Upgrading VRAs

- For VRAs managing protected virtual machines, do *one of the following*:
  - *(For Hyper-V environments only)* **Live migrate the protected virtual machines and storage** managed by the VRA to another host with a VRA,
  - **Upgrade the VRA** without migrating the virtual machines and a **delta sync** will be performed following the upgrade
  - *(For vSphere environments only)* **vMotion the protected virtual machines and datastores** managed by the VRA to another host with a VRA, or
  - **Upgrade the VRA** without vMotioning the virtual machines and a **bitmap sync** will be performed following the upgrade.
- Upgrading a VRA that manages the **recovery of virtual machines** results in a **bitmap sync** being performed after the upgrade. Note that the time to upgrade a VRA is short so the bitmap sync should also be quick.

Procedure: Upgrading VRAs

Use the following procedure to upgrade your VRAs.

To upgrade VRAs:

1. *(For Hyper-V environments only)* For a VRA protecting virtual machines, if **live migrating** the protected virtual machines:
   a) Remove affinity rules for protected virtual machines on the host with the VRA to be upgraded.
   b) Live migrate these protected machines from the host to another host with a VRA.

2. *(For vSphere environments only)* For a VRA protecting virtual machines, if **vMotioning** the protected virtual machines:
   a) Remove affinity rules for protected virtual machines on the host with the VRA to be upgraded.
   b) vMotion these protected machines from the host to another host with a VRA.

3. In the Zerto User Interface, click *SETUP > VRAs*, then select the VRAs to upgrade, and then click *MORE > Upgrade*.

   The *Upgrade VRAs* dialog is displayed, listing the selected VRAs, and whether an upgrade is available.

4. Review the list for the VRAs that you want to upgrade. Deselect any VRAs that you decide not to upgrade.

5. Click *Upgrade Selected VRAs*.

6. The upgrade progress is displayed in the *VRAs* tab.
   - For **version upgrades**, for VRAs at the protected site and recovery sites, a **delta sync is performed** following the upgrade.
   - For updates **within a version**:
     - For VRAs at the **protected site**, a **bitmap sync** is performed following the upgrade.
       Note: The time needed to upgrade a VRA is short so the bitmap sync should be quick.
     - For VRAs at the **recovery site,** a **delta sync** is performed following the upgrade.

   Note: The VRA name does not change, even if the naming convention in the latest version is different.

Upgrading Zerto Virtual Replication PowerShell Cmdlets

When upgrading Zerto Virtual Replication PowerShell cmdlets, make sure that **Windows PowerShell** is **closed** before installing the new version.

Upgrading or Reinstalling VMware Components (VMware Environments Only)

Prior to installation or upgrade, see VMware documentation for complete information regarding installation and upgrading of VMware products.

Before beginning the installation or upgrade, verify that your **version** of Zerto Virtual Replication **supports** the **new VMware version**.

See the Zerto Virtual Replication Interoperability Matrix for the list of VMware environments supported by this version of Zerto Virtual Replication.

See the following sections:

- "Upgrading a vCenter Server", on page 8
- "Reinstalling a vCenter Server", on page 8
- "Upgrading vCloud Director", on page 8
- "Upgrading VMware Tools", on page 8
- "Upgrading or Reinstalling a Host", on page 8

Upgrading a vCenter Server

- Zerto recommends that you **upgrade a vCenter Server** rather than reinstalling it.
- When upgrading **both** vCenter and an ESX/ESXi, you must **first upgrade the vCenter**.
- Zerto Virtual Replication components are **not affected by a vCenter Server upgrade**. Protection continues and no additional procedures are required.
- When **upgrading a vCenter Server**, make sure that you **preserve the vCenter database**. Preserving the existing database is required in order to continue using the existing Zerto Virtual Replication installation.

  Note: If the recovery vCenter Server service is stopped, recovery operations are not possible until the service is restarted.
- Migration from VC to vCSA 6.5 was tested in Zerto and is supported.

Reinstalling a vCenter Server

If you need to **reinstall the vCenter Server, including rebuilding the database**, contact **Zerto support** for help throughout the re-installation.

Upgrading vCloud Director

- Zerto recommends that you **upgrade vCD** rather than reinstalling it.
- Zerto Virtual Replication components are **not affected by a vCD upgrade**. Protection continues, and no additional procedures are required.
- If you need to **reinstall vCloud Director**, contact **Zerto support** for help throughout the re-installation.

Upgrading VMware Tools

You do not need to upgrade VMware Tools on a VRA.

Upgrading or Reinstalling a Host

When upgrading **both** vCenter and an ESX/ESXi, you must **first upgrade the vCenter**.

When **upgrading**, including applying **patches**, or **reinstalling a host with an active VRA**, in order to avoid any impact on protection:

1. **For hosts that are protecting VMs:** vMotion these protected virtual machines to another host in the cluster with a VRA installed.
2. **For recovery hosts:** Change the host for all virtual machines in VPGs recovering to this host, to another host as described in *Zerto Virtual Manager Administration Guide for the VMware vSphere Environment*, in the section **Changing a Recovery VRA**. A bitmap sync occurs to synchronize the VPGs with the new host.

Note: VRAs installed using a password to access the host, that require the password to be updated, (for example, when the host is upgraded) must be updated with the new password. For details, see the following procedure.

To change the host password required by a VRA:

1. In the Zerto User Interface, click *SETUP > VRAs*.
2. Select the VRAs that need to be updated and click *MORE > Change Host Password*.
   The *Change Host Password VRA* dialog is displayed.
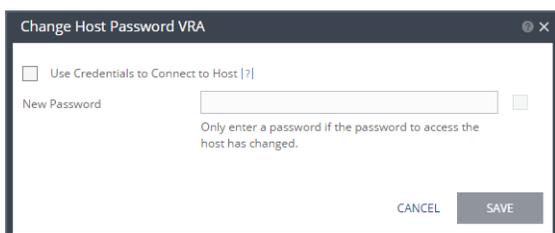
3. To change the connection method or host password, do one of the following:
   - If the VRA is using a password to connect to the host and should use vSphere Installation Bundle, VIB, uncheck *Use credentials to connect to host*.
   - If the VRA is using VIB to connect to the host and should use a password, check *Use credentials to connect to host* and enter the password. To display the password in plain text, click in the box next to the field.
   - If the VRA is connecting to the host with a password and the password for the host has changed, enter the new password. To display the password in plain text, click in the box next to the field.
4. Click *SAVE*.

Upgrading or Reinstalling Microsoft SCVMM/Hyper-V Components (Hyper-V Environments Only)

Refer to Microsoft documentation for complete information regarding installation and upgrading of Microsoft products prior to installation or upgrade.

Verify that your version of Zerto Virtual Replication supports the new Microsoft version before beginning the installation or upgrade.

Refer to the Zerto Virtual Replication Interoperability Matrix for the list of Hyper-V environments supported by this version of Zerto Virtual Replication.

See the following sections:
- "Reinstalling VMM", on page 9
- "Upgrading or Reinstalling a Host", on page 10
- "Upgrading Integration Services", on page 10
- "Restart Zerto Virtual Manager After SCVMM Upgrade", on page 11

Reinstalling VMM

If, for whatever reason, you need to reinstall the VMM, including rebuilding the database, contact Zerto support for help throughout the re-installation.

Upgrading or Reinstalling a Host

When **upgrading**, including applying **patches**, or reinstalling a **host** with an **active VRA**:

1. First, **change the recovery host of every virtual machine in every VPG that recovers to this host**, to avoid a `Delta Sync` after the host has been upgraded and the VRA started up.

2. Then **upgrade the host**. You can move the virtual machines to a different host from within the Zerto User Interface, as described below, or by using cmdlets, as described in *Zerto Virtual Replication PowerShell Cmdlets Guide*.

Use the following procedure:

To change a recovery VRA:

1. In the Zerto User Interface, click *SETUP > VRAs*.

2. Select the VRA to change and click *MORE > Change VM Recovery VRA.*

   The *Change VM Recovery VRA* dialog is displayed, listing all the virtual machines being recovered on that host.
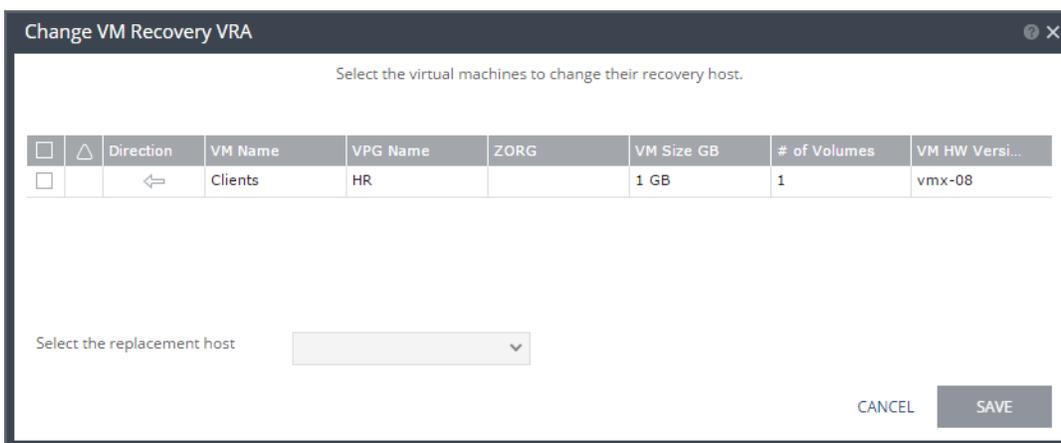
3. Review the list and select the virtual machines to change the target host to another specified target host.

4. Select the target host for these virtual machines in the `Select the replacement host` drop-down list.

   You can move some virtual machines to one replacement target host, and then by repeating the operation, you can move other virtual machines to a different target host.
   - Validation is performed to make sure the selected target host can be used. For example, the datastores used by both the VRAs are accessible from both hosts.
   - Any implications of the change, such as whether synchronization might be required after the change is also displayed.

5. Click *SAVE*.
   - The VPG recovery host definitions are changed and the affected target data, including the journals, storage vMotioned to the VRA under the replacement host.
   - During this procedure you **cannot edit the affected VPGs** nor attempt a failover, move, failover test, or clone operation.
   - At the end of the procedure a **Delta Sync might be required** to resynchronize the protected machines with the recovery VRAs.
     - In order not to affect the recover ability of other VPGs replicating to the VRA, a **new virtual machine is created** to handle moving the disks.
     - This virtual machine is named **Z-VRAH-ESXi*hostname-xx***, where *hostname* is the name of the ESXi host where the original VRA is installed and *xx* is a unique index used for the virtual machine, with a format of *yy-xxxx* or *xxxx*.

6. Repeat this procedure for all the virtual machines.

Upgrading Integration Services

You do not need to upgrade Integration Services on a VRA.

Restart Zerto Virtual Manager After SCVMM Upgrade

Zerto Virtual Manager must be restarted after SCVMM is upgraded.

Upgrading Zerto Cloud Manager

An upgrade of the Zerto Cloud Manager moves all configuration definitions from the old version to the new version.

The installation checks for an existing installation and if an existing installation is identified, that is one version lower than the new version, you can upgrade or uninstall the existing version.

You must upgrade Zerto Virtual Replication and Zerto Cloud Manager in parallel, making sure that you **upgrade** the version of **Zerto Virtual Replication** which is run by the **CSP**, **before** you upgrade the version of Zerto Cloud Manager. This is done so that they are never more than one version apart.

To upgrade the version:

1. Run `Zerto Cloud Manager Installer.exe`.

   The Zerto Cloud Manager Installation Wizard is displayed.

2. Select *Upgrade* and click *Next*.

   The upgrade proceeds automatically.

Upgrading Zerto Cloud Connectors

Zerto Cloud Connectors do not require upgrading when a new Zerto Virtual Replication version is released.

Upgrading Zerto Cloud Manager