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 section:

- “Guidelines to Upgrading Zerto Virtual Replication”, on page 1
- “Upgrading Multiple Sites Running Different Versions”, on page 5
- “Upgrading To More Than One Version Higher”, on page 6
- “Re-installing the Current Installation”, on page 9
- “Upgrading VRAs”, on page 9
- “Upgrading Zerto Virtual Replication PowerShell Cmdlets”, on page 10
- “Upgrading or Reinstalling VMware Components (VMware Environments Only)”, on page 11
- “Upgrading or Reinstalling Microsoft SCVMM/Hyper-V Components (Hyper-V Environments Only)”, on page 14
- “Upgrading Zerto Cloud Manager”, on page 15
- “Upgrading Zerto Cloud Connectors”, on page 16

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

Before upgrading, review the following documents:

- Product Version Lifecycle Matrix for Zerto Virtual Replication
- Sizing Considerations for Zerto Virtual Replication

Then, review the following considerations:

- Zerto recommends upgrading to the latest version of Zerto Virtual Replication that supports the environment you are using. See 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 5.5, 5.5U1, etc., are the same version.
- The following table shows what version you can upgrade to, based on the current version running at the site.

<table>
<thead>
<tr>
<th>CURRENT VERSION</th>
<th>CAN UPGRADE TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.0, 4.0Ux</td>
<td>4.5Ux</td>
</tr>
<tr>
<td>4.5, 4.5Ux</td>
<td>5.0Ux</td>
</tr>
<tr>
<td>5.0, 5.0Ux</td>
<td>5.5</td>
</tr>
</tbody>
</table>

- You do not need to move workloads during an upgrade.
- When upgrading a protected vSphere or Hyper-V environment, after the upgrade, a bitmap sync is performed for VPGs on the protected VRA.
- In a Hyper-V environment, SCVMM 2016 is supported on ZVR clean installations only.
- Zerto Cloud Appliance is supported for Azure and AWS (ZCA) on:
  - Windows 2016
  - Windows 2012R2
- 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 9.
Guidelines to Upgrading Zerto Virtual Replication

Upgrading The Zerto Virtual Replication Environment -Version 5.5

See the following sections:
- “Before Upgrading Zerto Virtual Replication”, on page 2
- “Upgrading the Current Installation”, on page 2
- “Upgrading Environments Which are Connected to Zerto Cloud Manager”, on page 5

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 temporarily causes 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.

To upgrade the version:
1. Run the Zerto Virtual Replication installation executable for your environment.
   The Zerto Replication Installation Wizard is displayed.
2. Click NEXT to continue.
   Zerto Virtual Replication validates that your system meets the upgrade requirements.
3. Select the checkbox to accept the license agreement, and click NEXT to continue.
The VRAs Upgrade window is displayed.

The Auto-Upgrade Virtual Replication Appliances checkbox is selected by default, meaning that all the VRAs will be automatically upgraded once the upgrade completes successfully.

- Optionally, deselect the checkbox if you want to manually upgrade VRAs after the version upgrade completes.

**Note:** *(For vSphere environments only)* For **version upgrades**, for VRAs at the protected site and recovery sites, a **bitmap sync** is performed following the upgrade.

**Note:** *(For Hyper-V environments only)* After the upgrade, a **delta sync** is performed at the protected site, and a **bitmap sync** is performed at the recovered site.

4. Click **Next**.
   - The version upgrade proceeds automatically, displaying a Validation box followed by an Upgrade progress box.
   - The Upgrade Complete window is displayed, with the checkbox **Open the Zerto Virtual Manager interface** already selected.
   - It is highly recommended that you track the VRA upgrade via the Zerto Virtual Manager interface. You may, however, deselect the checkbox if you do not want to track the VRA upgrade progress.

5. Click **DONE** to close the wizard.
   - The Zerto Virtual Manager interface opens at the **Setup > VRAs** tab, displaying the Upgrading VRA tasks.

**Note:** If during the upgrade, system requirements are identified that require a restart, a window is displayed informing the user that the upgrade is complete and whether to restart the computer.
In such a case, the ZVM service will be started, and the automatic VRA upgrades will begin, only after the VM is restarted.

- Select **YES**, if it is convenient to restart the VM immediately:
  - The VM will restart.
  - The ZVM service will be started and the automatic VRA upgrades will begin.
- Select **NO** - if it is not convenient to restart the VM immediately:
  - Logging in to the ZVM UI will not be possible because the ZVM service will not have been started yet.

**Note:** If the vSphere Client console was open during the upgrade, close it and reopen it.
Upgrading the Zerto Virtual Replication Environment - Version 5.5

Upgrading Environments Which are Connected to Zerto Cloud Manager

For environments using the Zerto Cloud Manager:
- Upgrade the Zerto Cloud Manager before upgrading the Zerto Virtual Managers.
- Zerto Cloud Manager (ZCM) supports Zerto Virtual Manager (ZVM) of N and N-1 versions.
  For Example: ZCM of version 6.0 supports ZVM of versions 6.0, 5.5 and their updates.
- 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 after the Zerto Cloud Manager, so that they are never more than one version separated from each other.

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.

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.

Upgrading Zerto Virtual Replication Using the Zerto Diagnostics Utility

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 folder `<Zerto_Installation_Folder>\Zerto Virtual Replication\ExportedSettings`. 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 folder <Zerto_Installation_Folder>\Zerto Virtual Replication\ExportedSettings. 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

This section is applicable if Auto-Upgrade Virtual Replication Appliances was not selected when upgrading Zerto Virtual Replication, or if a manual VRA upgrade is required.

- 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.

Site Specific Considerations when Upgrading VRAs

- (For Hyper-V Environments) VRAs managing protected virtual machines: Either live migrate the protected virtual machines and storage managed by the VRA to another host with a VRA, or upgrade the VRA without migrating the virtual machines and a delta sync will be performed following the upgrade.
(For VMware Environments) VRAs managing protected virtual machines: Either 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: 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 VMware Environments: 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, 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.

   - (For VMware Environments) After the upgrade, a bitmap sync is performed at both the protected and recovered sites.
   - (For Hyper-V Environments) After the upgrade, a delta sync is performed at the protected site, and a bitmap sync is performed at the recovered site.

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 11
- “Reinstalling a vCenter Server”, on page 11
- “Upgrading vCloud Director”, on page 11
- “Upgrading VMware Tools”, on page 11
- “Upgrading or Reinstalling a Host”, on page 11

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.
- When upgrading a vCenter Server make sure to close the ZVM UI.

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.
- When upgrading vCD from version 1.5, to 5.1 or higher, you must change the storage profile for each protected virtual machine from * (any) to a valid storage profile to use for that virtual machine. Contact Zerto support for help with the upgrade of VPGs.
- 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:

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.

   ![Change VM Recovery VRA dialog](image)

3. Review the list and select the virtual machines to change the target host to another specified target host.
4. From the Select the replacement host drop-down list, select the **target host** for these virtual machines.
   
   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-ESXihostname-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-yyyy or yyyy.

6. Repeat this procedure for all the virtual machines.
7. 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.
   
   To do this, 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**.
Upgrading The Zerto Virtual Replication Environment -Version 5.5

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, deselect **Use credentials to connect to host**.
   - If the VRA is using VIB to connect to the host and should use a password, select **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
- Upgrading or Reinstalling a Host
- Upgrading Integration Services
- Restarting Zerto Virtual Manager After SCVMM Upgrade

Reinstalling VMM

If you need to reinstall the VMM, including rebuilding the database, contact Zerto support for help throughout the reinstallation.

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.

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. From the Select the replacement host drop-down list, select the target host for these virtual machines.
   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 recoverability 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-ESXihostname-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.

**Restarting Zerto Virtual Manager After SCVMM Upgrade**

Zerto Virtual Manager must be restarted after SCVMM is upgraded.

**Upgrading Zerto Cloud Manager**

The Zerto Cloud Manager version must be the same as the Zerto Virtual Manager version.

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. If an existing installation is identified, that is one version lower than the new version, you can upgrade or uninstall the existing version.

**IMPORTANT!**

You must upgrade Zerto Virtual Replication and Zerto Cloud Manager in **parallel**, making sure that you upgrade the version of Zerto Cloud Manager **before** you upgrade the version of Zerto Virtual Replication which is run by the CSP.

This is done so that they are never more than one version apart.
Upgrading The Zerto Virtual Replication Environment - Version 5.5

**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.