Veeam Backup & Replication

Version 12

Veeam Universal Application Item Recovery Guide

February, 2023

> **NOTE**
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- Full documentation set: veeam.com/documentation-guides-datasheets.html

- Veeam R&D Forums: forums.veeam.com

Veeam Universal Application-Item Recovery Overview

Universal Application-Item Recovery (or U-AIR) addresses one of the most common IT problem — it lets you restore individual application items that were accidentally deleted or corrupted, directly from VM backups. You can use Veeam's U-AIR functionality to recover items from any application running inside any VM.

U-AIR does not require any special backups or additional tools. To enable recovery of application items, U-AIR uses the vPower technology for applications virtualized on VMware vSphere platform, and Instant VM Recovery technology for applications virtualized on Microsoft Hyper-V platform. VMs are started directly from compressed and deduplicated image-level backups.
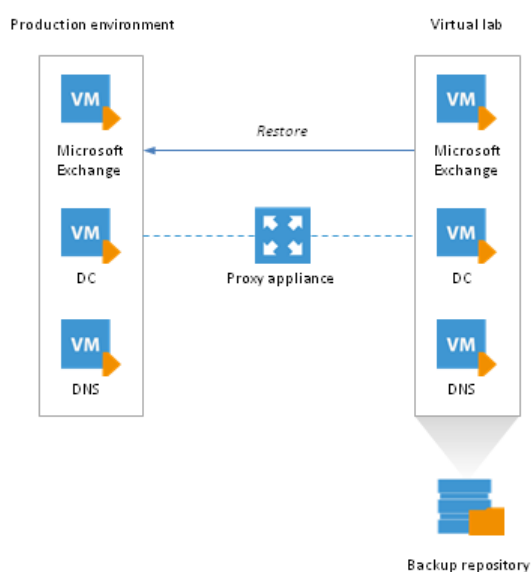
U-AIR utilizes a SureBackup job configured on the Veeam Backup server, a virtual lab and an application group linked to the job:

- U-AIR utilizes a *SureBackup job* to create an isolated virtual environment where VMs from the application group are started.

- The *application group* includes the VM running the application from which you want to restore items, and VMs running applications and services on which the restored application is dependent. This way, U-AIR ensures that you run in the virtual lab a fully functional application working in a proper way, just as in your production environment. For example, if you need to recover items from Microsoft Exchange, the application group should comprise the VM running Microsoft Exchange, a virtualized Domain Controller performing the role of the Global Catalog, and a DNS server.

- VMs in the *virtual lab* are started directly from backups using the necessary restore point. Essentially, in the virtual lab you have a copy of your production environment, but as of an earlier point in time. U-AIR provides transparent access to the backed up VM image through the appliance VM that has visibility of both the virtual lab and the production environment. Users can extract the necessary application items from "earlier" VM images and bring them back to the production environment.

Veeam Backup & Replication starts the virtualized application and all required components in the virtual lab so that users can connect to that application with the native management tools they use for work with the application, and restore items they need.

From the end user's perspective, U-AIR is a wizard that guides you through the process of application-item recovery. You can install U-AIR wizard on any Microsoft Windows-based machine in your production environment from which you plan to start the restore process.

U-AIR Workflow

Commonly, the restore procedure requires specific knowledge and is performed by application administrators or users working with applications. At the same time, management tasks are controlled by Veeam Backup & Replication administrators who know about all resources available in the backup infrastructure and access permissions that users have.

For this reason, in the typical U-AIR workflow, two groups of users are engaged:

- Users who need to restore specific items from applications

    - Veeam Backup & Replication administrators who work with Veeam Backup & Replication and Veeam Backup Enterprise Manager
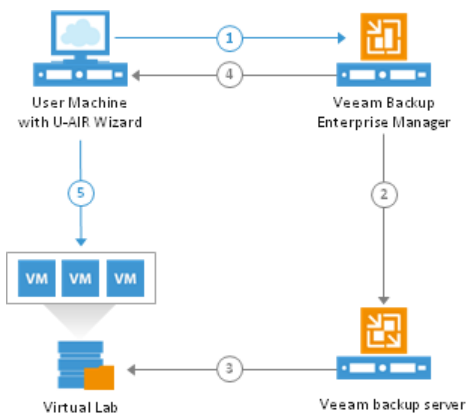
The typical restore procedure includes the following steps:

1. The user who needs to restore an application item downloads the U-AIR wizard and installs it on his or her machine. The user starts the U-AIR wizard and submits a virtual lab request. The submitted request is sent over to Veeam Backup Enterprise Manager and is registered there. (1)

2. The Enterprise Manager administrator receives an e-mail about a new lab request submitted by the user. The e-mail is sent automatically once a new request is registered at Enterprise Manager. (1)

3. The administrator also makes sure that the user who submitted the request is eligible to access application data from the corresponding backup.

4. The administrator approves or denies access to requested data using Veeam Backup Enterprise Manager. If the request is approved, the administrator uses the request approval wizard to select the necessary SureBackup job that should be started in order to create the required virtual lab. The SureBackup job that the administrator selects should be pre-configured on one of Veeam Backup servers connected to Enterprise Manager. (2,3)

   If necessary, the administrator can manage virtual labs. For example, the administrator can extend the time for the virtual lab lease or stop the lab leased by the user to let somebody else perform emergency restore using the same virtual lab.

5. Once the lab is ready, the user receives a notification from Virtual Lab Manager. (4)

6. The user can now start application-item recovery. If necessary, the user can extend the time for which the virtual lab should be running. (5)

After the recovery process is finished, the administrator can manually power off the virtual lab. If this does not happen, the virtual lab will in any way be powered off automatically once the time for virtual lab lease is exceeded.

Virtual Lab Manager

To help users who requested virtual labs manage their requests, Veeam Backup & Replication offers a special tool – Virtual Lab Manager. Virtual Lab Manager runs on the machine from which the user sends the request and on which the user plans to perform application-item recovery.

Virtual Lab Manager is launched when the virtual lab request is submitted, and continues running in the background even after the **New Virtual Lab Request** wizard is closed. When a user submits a request for a virtual lab, this request is passed to Virtual Lab Manager, which, in turn, sends it to Veeam Backup Enterprise Manager. Being connected to Enterprise Manager, Virtual Lab Manager can notify users about the state of their requests. When the request is approved or rejected, a virtual lab is ready or its time elapses, Virtual Lab Manager displays a message hovering over its icon in the notification area. In addition to monitoring the state of your requests, you can use Virtual Lab Manager to create new virtual lab requests, open ready virtual labs and dismiss unnecessary requests.
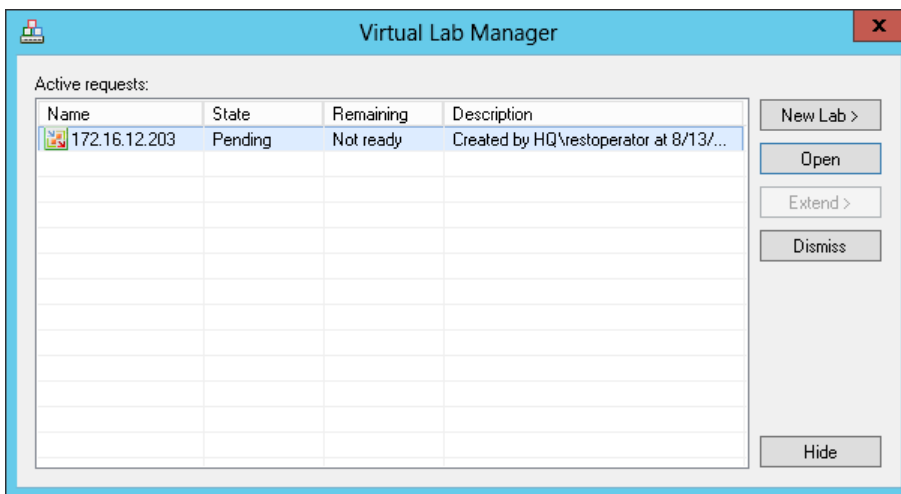
Virtual Lab Manager is automatically installed on the machine on which you install U-AIR wizard. During the wizard installation process, you can specify the IP address of Veeam Backup Enterprise Manager, and port over which Virtual Lab Manager will communicate with it. By default, the port number is **9394**. If you skip these actions at the setup, you can configure connection settings later on, as described here.

Before You Begin

Before you start working with the Universal Recovery wizard, go through the following check list:

1. You need a valid trial, Enterprise or Enterprise *Plus* license for Veeam Backup & Replication installed. If you have a Standard license, you will not be able to use U-AIR.

2. The **Universal U-AIR** wizard must be installed on a Microsoft Windows-based machine.

3. Make sure that you have properly configured a corresponding SureBackup job and all components it will use.

4. U-AIR does not work with IPv6 addresses.

5. You must have an application group that includes the VM from which you want to restore application items, and all VMs running services on which the primary VM is dependent. Note that all of these applications must be virtualized.

6. You must have a virtual lab in which VMs from the application group will be started. The virtual lab must mirror the network settings of your production environment.

7. You must have a properly configured SureBackup job. In the properties of the SureBackup job, you need to specify the application group and virtual lab that you plan to use for the restore process. Before you start the U-AIR process, you may run the SureBackup job to make sure the virtual lab is set up correctly:

    h. The SureBackup job must be able to start all VMs from the application group.

    i. The **Keep the application group running once the job completes** check box in the job properties must be selected. With this option enabled, the lab will stay powered on after the SureBackup job completes, and you will be able to perform application item-level restore.

10. You must have backups of all VMs that will take part in the restore process. These include backups of VMs from the application group. For VMware platform, you can also use VM replicas.

For additional information, please refer to Veeam Backup & Replication documentation.

Installing U-AIR

To install a Universal Application Item-Level Recovery wizard on a user's Windows-based machine, do the following:

1. Run the `Veeam_B&R_Universal_AIR_Setup` file from the `\AIR` folder of the Veeam Backup & Replication installation image or CD/DVD.
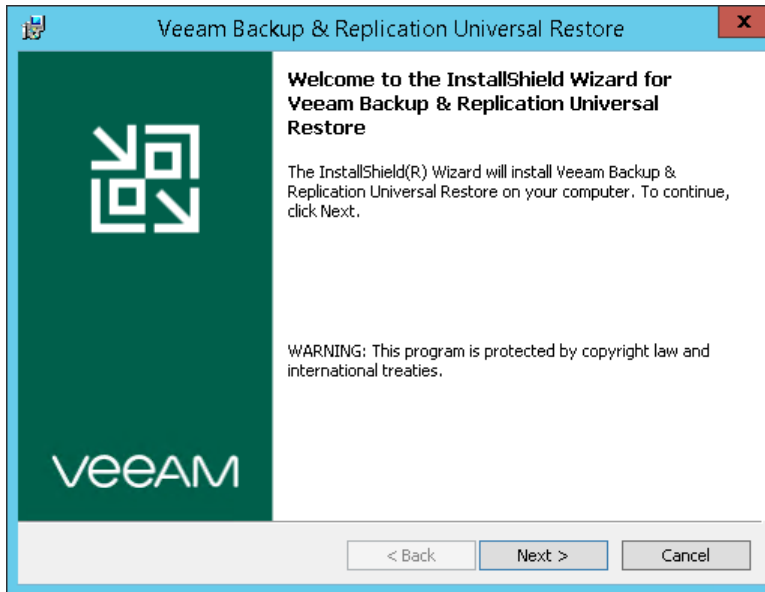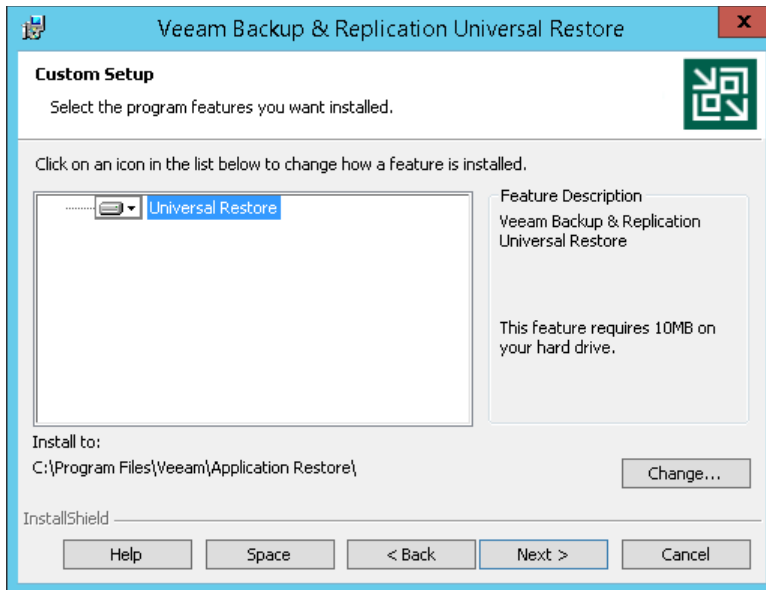

2. Read and accept the terms in the license agreement to continue installation.
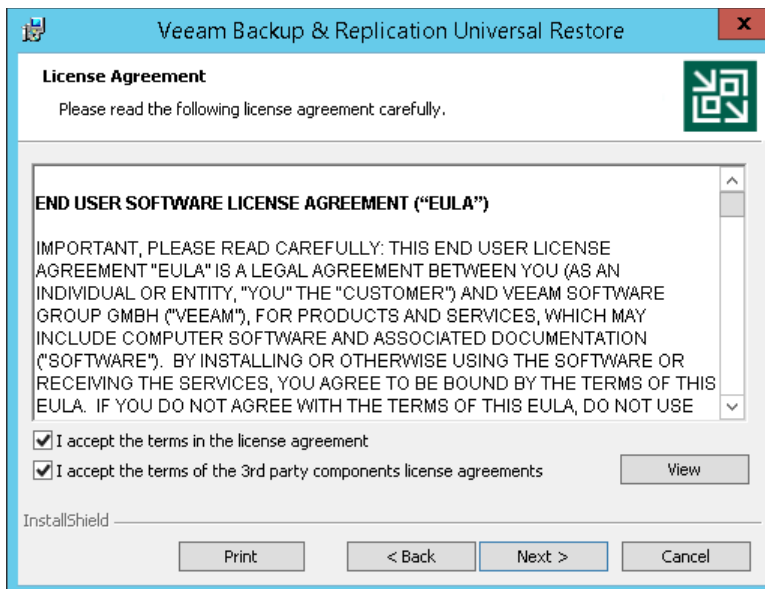
3. By default, the Universal Restore feature will be installed to the `C:\Program Files\Veeam\Application Restore` folder. If necessary, click **Change** to specify another installation folder.

   Use the Space button to calculate available space.

4. You can specify connection parameters for Veeam Backup Enterprise Manager server, including its IP address and connection port (default is **9394**). This step is optional: you can select **Skip configuration of the Enterprise Server connection** check box. You will be able to configure connection with Enterprise Manager later on, using the Virtual Lab Manager settings, as described in the Connection Settings section.
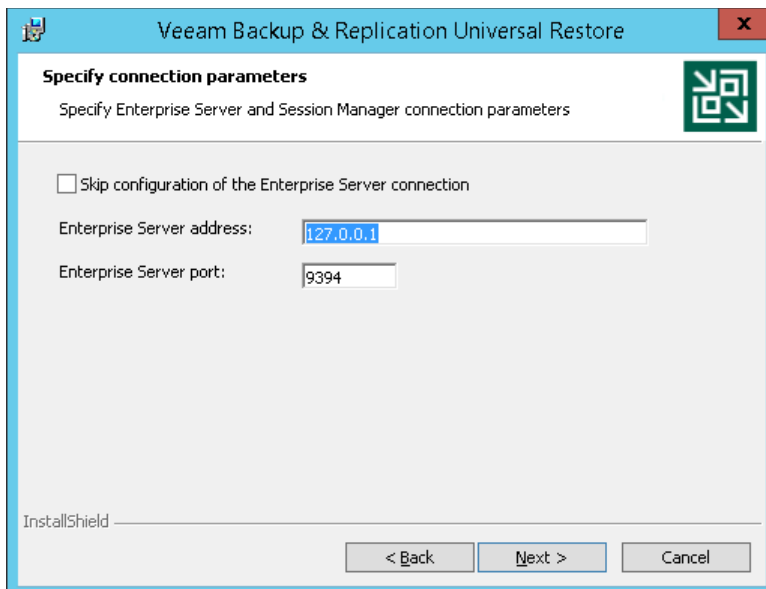
5. Finally, click **Install** to deploy the U-AIR wizard.
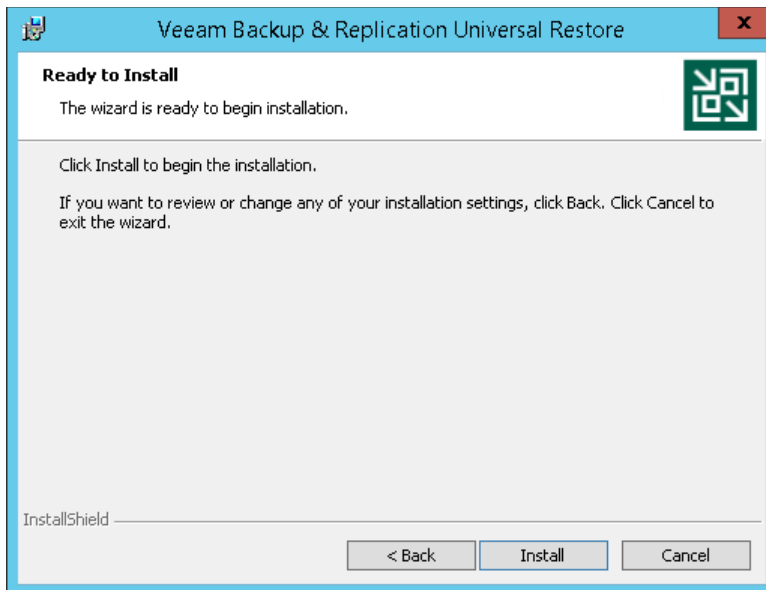
6. Wait for the installation to complete, then click **Finish**.
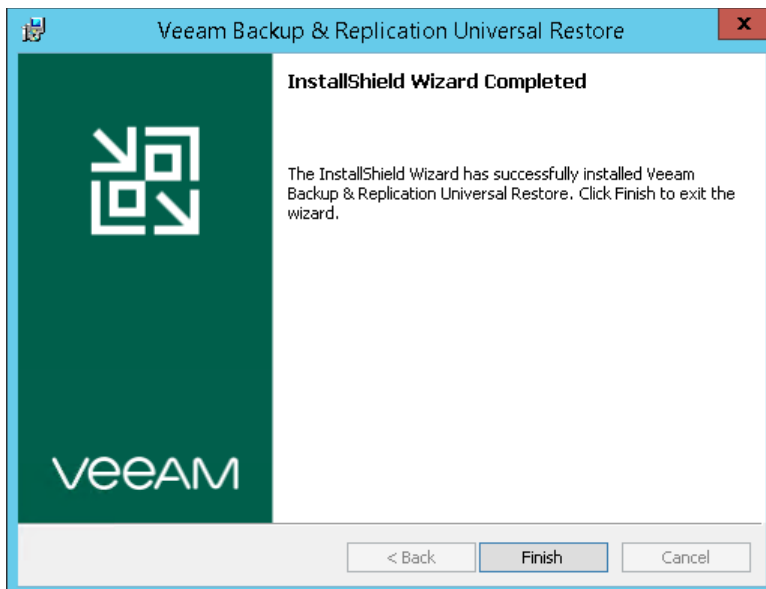
Note that Virtual Lab Manager is automatically installed on the machine on which you install U-AIR wizards.

After installation, both applications (U-AIR and Virtual Lab Manager) will appear in the list of application on the target machine.

Setting Up Connection with Enterprise Manager

During the wizard installation process, you are prompted to specify the IP address of Veeam Backup Enterprise Manager, and port over which Virtual Lab Manager will communicate with Veeam Backup Enterprise Manager (by default, port **9394** is used).

If you skip the connection configuration during the setup, or wish to change these connection settings, you can right-click the Virtual Lab Manager icon in the task bar and select **Settings**.
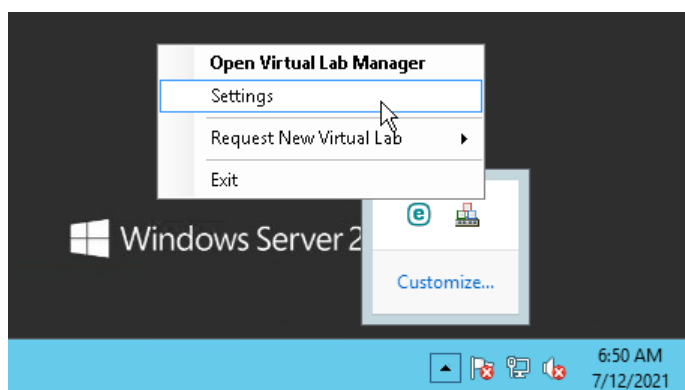
Enter the required values in the dialog displayed, and click **Test Connection**:
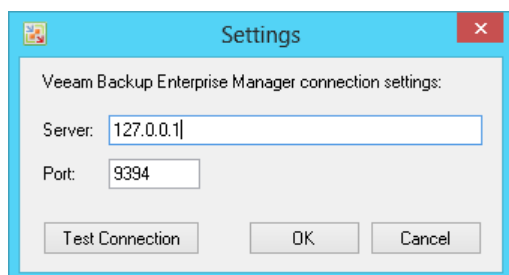
Uninstalling U-AIR

To uninstall a U-AIR wizard, do the following on the machine where this component is installed:

1. Select **Control Panel** > **Programs and Features**.

2. In the programs list, right-click **Veeam Backup & Replication Universal Restore** and select **Uninstall**.

3. If prompted, confirm the operation, and wait for the process to complete.

Recovering Application Items

The Universal Recovery wizard enables you to recover items from any application running in the VM.

When you start the application-item recovery process, Veeam Backup & Replication runs the SureBackup job to start an isolated virtual lab and run there VMs from the application group. Once the virtual lab is ready and the VM with the application is up, you can connect to the application using native management tools to recover the items you need. Alternatively, you can log on to the VM console using vSphere Client or Hyper-V Manager and retrieve the necessary items from there.

> **TIP**
>
> Typically, when you perform application-item recovery, a SureBackup job is launched automatically by the request of the U-AIR wizard. The virtual lab linked to the job remains running for the time interval specified in the virtual lab request. Once the specified period of time is over, the job is automatically stopped, and the virtual lab is powered off.
> However, you can also start the SureBackup job manually. In this case, you will be able to use VMs from the application group after the SureBackup job is finished. If you want to start the SureBackup job manually, make sure that you select the **Keep the application group running once the job completes** option in the properties of the SureBackup job. If you do not select this option, as soon as the job verifies VMs, it will automatically power off VMs from the application group, and you will not be able to recover the items you need.

The recovery procedure includes the following steps:

1. Creating a virtual lab request

2. Approving the virtual lab request

3. Performing item-level restore

Creating Virtual Lab Requests Using Universal Recovery Wizard

To create a new virtual lab request using Universal Recovery wizard, do either of the following:

- Select **Universal Application Item Recovery** from the list of application programs.

- In Veeam Backup & Replication, on the **Home** tab, click **Restore** > **VMware or Restore** > **Hyper-V** (depending on the application virtualization platform). At the **Restore Options** step of the wizard, select **Application items** and click **Next**. At the **Select Application** step of the wizard, select **Other application** and click **Next**.

Then follow the wizard steps:

1. Specify a lab description and time interval to run the lab

2. Specify a VM running the application

3. Assess results

4. Select a restore point for the VM backup

5. Submit the lab request

Step 1. Specify a Description and Time Interval for the Lab
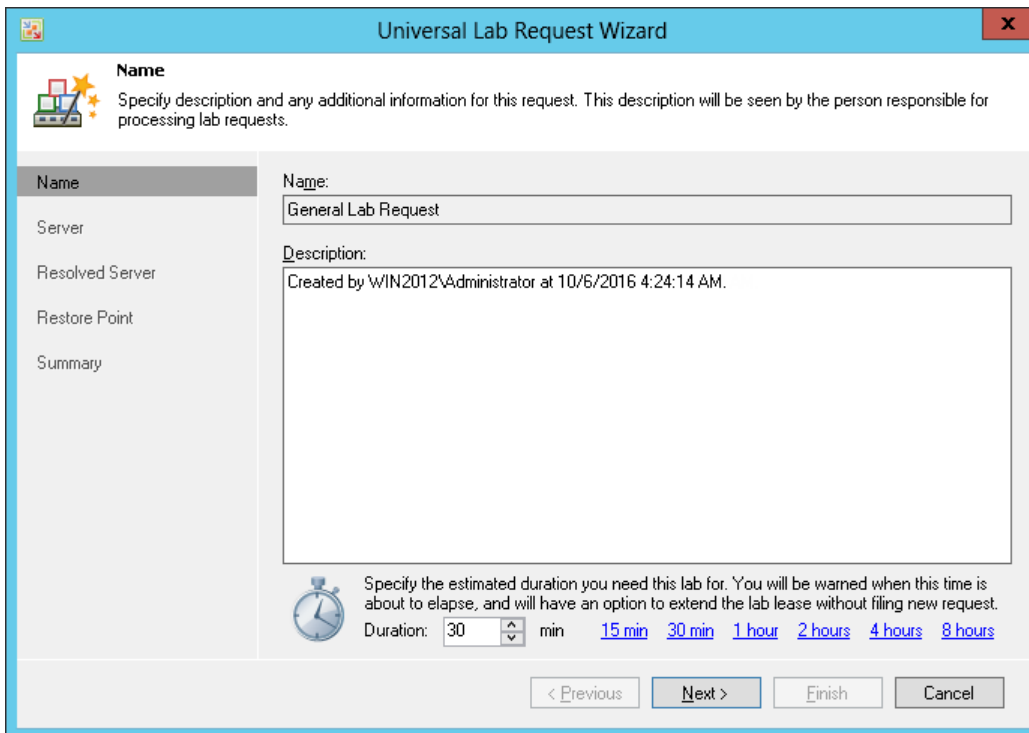
At the **Name** step of the wizard, provide a description for future reference. The default description contains information about the user who created the lab request, as well as the date and time when the request was created.

At the bottom of the window, specify the time interval that will be enough to restore items from the application. As soon as the specified time interval is over, you will not have access to the virtual lab.

Use time links to set the necessary period of time. By default, the virtual lab is up for **30** minutes.
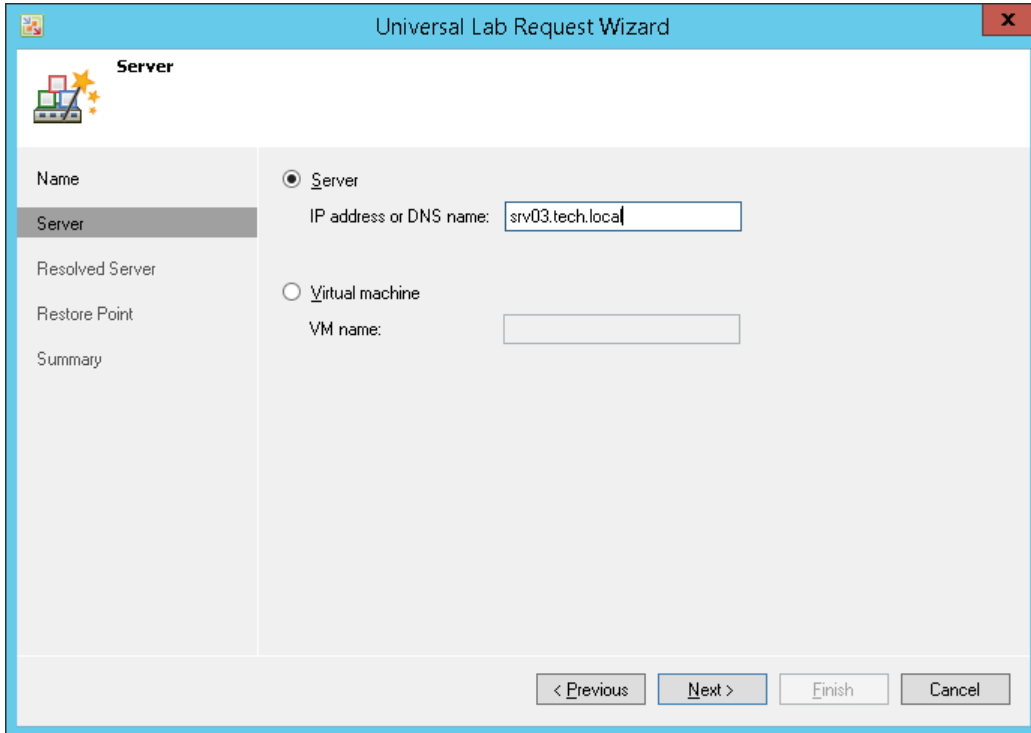
> **NOTE:**
>
> Once the time interval set for the virtual lab elapses, you will be notified about it via Virtual Lab Manager. You can extend the time interval by clicking the **Extend** button in Virtual Lab Manager without having to issue a new lab request.

Step 2. Specify a VM Running the Application

At the **Server** name of the wizard, specify the VM in the production environment that runs the application from which you want to restore items. You can use one of the two options: enter an IP address or DNS name of the server, or enter the name of the VM that runs the necessary application.

Step 3. Review Resolved IP Address

At the **Resolved Server** name of the wizard, the wizard will resolve the VM name and connect to it. Check the VM IP address and click **Next**.
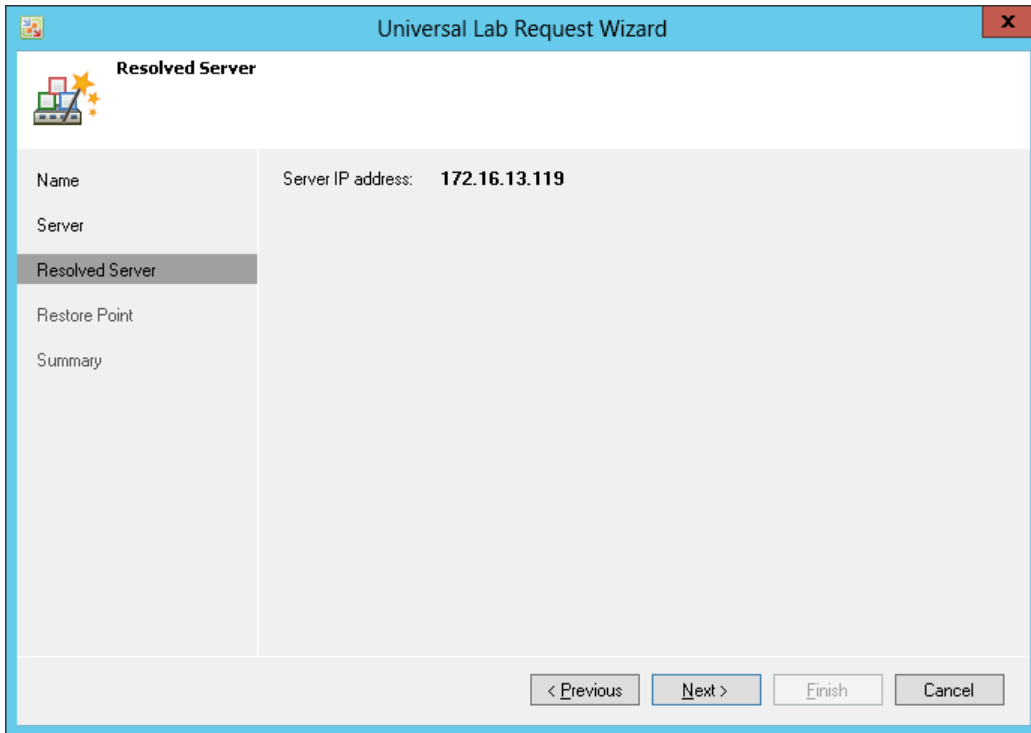
Step 4. Select a Restore Point for the VM Backup

At the **Restore Point** step of the wizard, from the list of available restore points, select the one when the application running in the VM was in the desired state (for example, before some items were deleted). You can select the latest performed backup, last Friday night backup or a backup preceding a specific date.
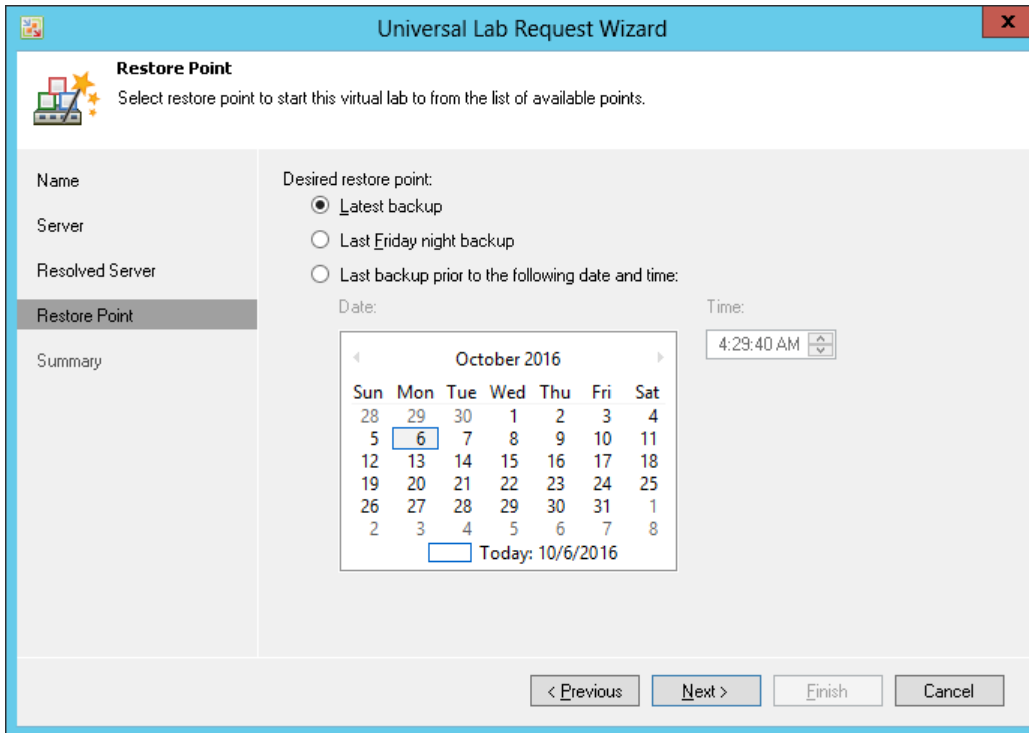
Step 5. Submit the Lab Request

At the **Summary** step of the wizard, review the virtual lab request settings and submit the request. As soon as you click **Finish**, Veeam Backup & Replication will register the request with Veeam Backup Enterprise Manager, and Virtual Lab Manager will start monitoring this request.
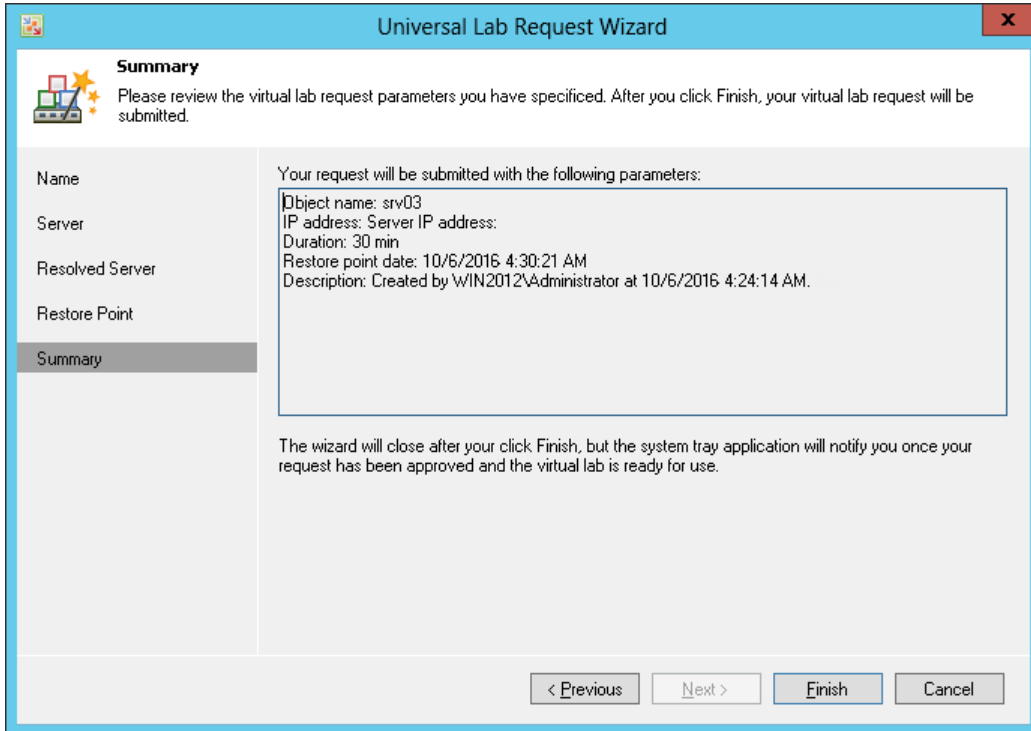
Creating Universal Lab Requests Using Enterprise Manager

Users with *Portal Administrator* Enterprise Manager role assigned can create virtual lab requests directly from Enterprise Manager web UI. For that, do the following:

1. Log in to Veeam Backup Enterprise Manager using an administrative account.

2. Go to the **Requests** tab.

3. Click the **Create** tool button in the top right corner.

4. Follow the steps of the wizard (they are similar to lab request approval wizard).

Approving Virtual Lab Request

When the user submits a request for a virtual lab, the request is passed to Veeam Backup Enterprise Manager. All virtual lab requests submitted by different users are listed on the **Requests**. Administrators working with Enterprise Manager can use this tab to approve submitted lab requests, reject them or prolong the time for which a requested virtual lab should be up.

> **IMPORTANT!**
>
> **Portal Administrator** rights on the Veeam Backup Enterprise Manager server are required to work with lab requests.

To approve a lab request, select it in the list and click **Approve**. Then follow the **Edit Lab Request** wizard steps.

Step 1. Review Lab Request Settings

At this step of the wizard, you can review and, if necessary, edit the virtual lab request (for example, change the time interval for which the lab should be up). To edit virtual lab request data, click the **Edit request** link at the bottom.

Step 2. Select a VM from the Backup

Select a backup from which you want to restore items. Veeam Backup Enterprise Manager scans all Veeam backup servers connected to it, searches for all backups with the VM specified at the previous step of the wizard, and displays these backups in the list.

Step 3. Select a Restore Point

Select the restore point when the application was in the desired state. The list of restore points is formed depending on the choice the user made when submitting the virtual lab request. For example, if the user selected the **Last Friday night backup** option, Veeam Backup Enterprise Manager will display restore points created on the last Friday night, and a number of restore points closest to the matching point.
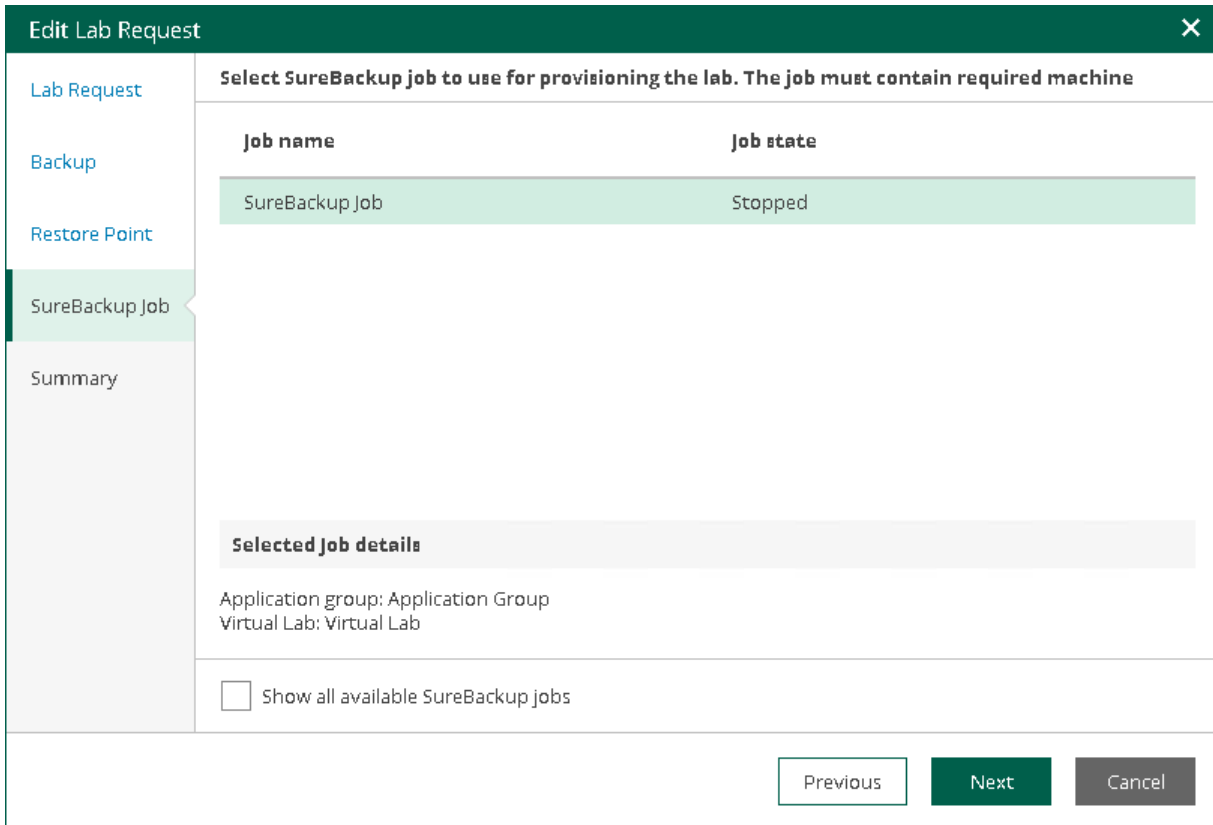
If you want to display all restore points that are available for the selected backup, select the **Show all available restore points** check box.

Step 4. Select a SureBackup Job

Select one of existing SureBackup jobs that you want to run to create an isolated sandbox in which the selected VM should be started. The application group and virtual lab used by this SureBackup job will be displayed in the **Selected Job details** section.

By default, the list of jobs displays only those jobs that contain the selected VM. If you want to display all SureBackup jobs that were created, select the **Show all available SureBackup jobs** check box.

Step 5. Approve the Lab Request

Review the settings you have configured for the virtual lab and click **Finish.** Veeam Backup & Replication will perform verification of the selected restore point.

If the specified SureBackup job is already running, Enterprise Manager will check the restore point to which VMs from the application groups are started. If the point does not correspond to the point selected at step 3, Enterprise Manager will display a warning. In this case, you may need to start the SureBackup job to an earlier point in time to make sure the items you need are available there. To do this, right-click the necessary SureBackup job in Veeam Backup & Replication and select **Start job to** from the shortcut menu.

If the SureBackup job is not running, Enterprise Manager will launch the selected SureBackup job, start the virtual lab and run the VM with the necessary application to the restore point selected at step 3.

Once the virtual lab is ready, Enterprise Manager will send a notification to Virtual Lab Manager so that the user who requested the virtual lab can start restoring application items.

Declining Lab Request; Prolonging Lab Existence

Using the **Requests** tab in Veeam Backup Enterprise Manager, the administrator can also decline virtual lab requests and prolong the time for which a created virtual lab should run.

- To decline a lab request, select it in the list, click Reject and enter the reason for declining the request. The user who submitted the request will be notified about it via Virtual Lab Manager.

- To prolong the time interval for which the requested lab should run, select the request in the list and click **Prolong**.

Performing Item-Level Restore

Once the virtual lab is running, you will be notified about it via Virtual Lab Manager and can start restoring necessary application items.

In Virtual Lab Manager, select the lab request which has been approved, and click **Open** to bring up the Universal Recovery wizard and make sure the virtual lab is ready.

To provide the user who submitted the virtual lab request with access to the restored VM in the virtual lab, the Universal Recovery wizard provides a masquerade IP address for the VM in the isolated environment and automatically updates routing on the user's machine. You can use the specified IP address to connect to the VM remotely and extract required items from the application with the native management tools. As an alternative, you can log on to the VM console using vSphere Client or Hyper-V Manager.