Veeam Recovery Orchestrator

Version 13

Deployment Guide

March, 2026

NOTE

Read the End User Software License Agreement before using the accompanying software programs. Using any part of the software indicates that you accept the terms of the End User Software License Agreement.

Contents

Contacting Veeam Software

At Veeam Software we value feedback from our customers. It is important not only to help you quickly with your technical issues, but it is our mission to listen to your input and build products that incorporate your suggestions.

Customer Support

Should you have a technical concern, suggestion or question, visit the Veeam Customer Support Portal to open a case, search our knowledge base, reference documentation, manage your license or obtain the latest product release.

Company Contacts

For the most up-to-date information about company contacts and office locations, visit the Veeam Contacts Webpage.

Online Support

If you have any questions about Veeam products, you can use the following resources:

- Full documentation set: veeam.com/documentation-guides-datasheets.html
- Veeam R&D Forums: forums.veeam.com

About This Document

This document describes how to deploy Veeam Recovery Orchestrator. The document includes system requirements, licensing information and step-by-step deployment instructions.

Veeam Recovery Orchestrator is built on top of Veeam Backup & Replication and Veeam ONE, and this guide assumes that you have a good understanding of these solutions.

Welcome to Veeam Recovery Orchestrator

Veeam Recovery Orchestrator (Orchestrator) extends the functionality of Veeam Data Platform by orchestrating recovery processes, with one-click recovery plans for critical applications, and rich features for documentation and testing.

Orchestrator leverages the recovery capabilities of Veeam Backup & Replication to build disaster recovery workflows, automate recovery processes and eliminate error-prone manual steps. Orchestrator also provides reporting capabilities that let enterprises document their disaster recovery plans to meet compliance requirements. With Orchestrator, you can do the following:

- **Orchestrate recovery operations**. Create workflows to orchestrate recovery to the following environments: VMware vSphere and Microsoft Azure cloud environments — for both virtual and physical machines; Microsoft Hyper-V environments — for virtual machines only.
- **Automate checks and tests**. Schedule checks and tests to automate the verification of recovery plans, with features such as isolated test labs and comprehensive readiness checks.
- **Meet compliance requirements**. View RPO and RTO achievements on the dashboard and generate automatically updated reports for recovery plan checks, tests and executions, ensuring that requirements for compliance and audit are met.

Architecture Overview

This section provides information on the Orchestrator architecture and its components, and describes some common deployment scenarios. The main components in the Orchestrator architecture are:

- Veeam Orchestrator Server
- Veeam Backup & Replication Servers

Optionally, additional infrastructure required for recovery can be connected, for example:

- NetApp Storage Systems
- HPE Storage Systems
- vCenter Servers
- SCVMM Servers
- Hyper-V and Azure Local Clusters

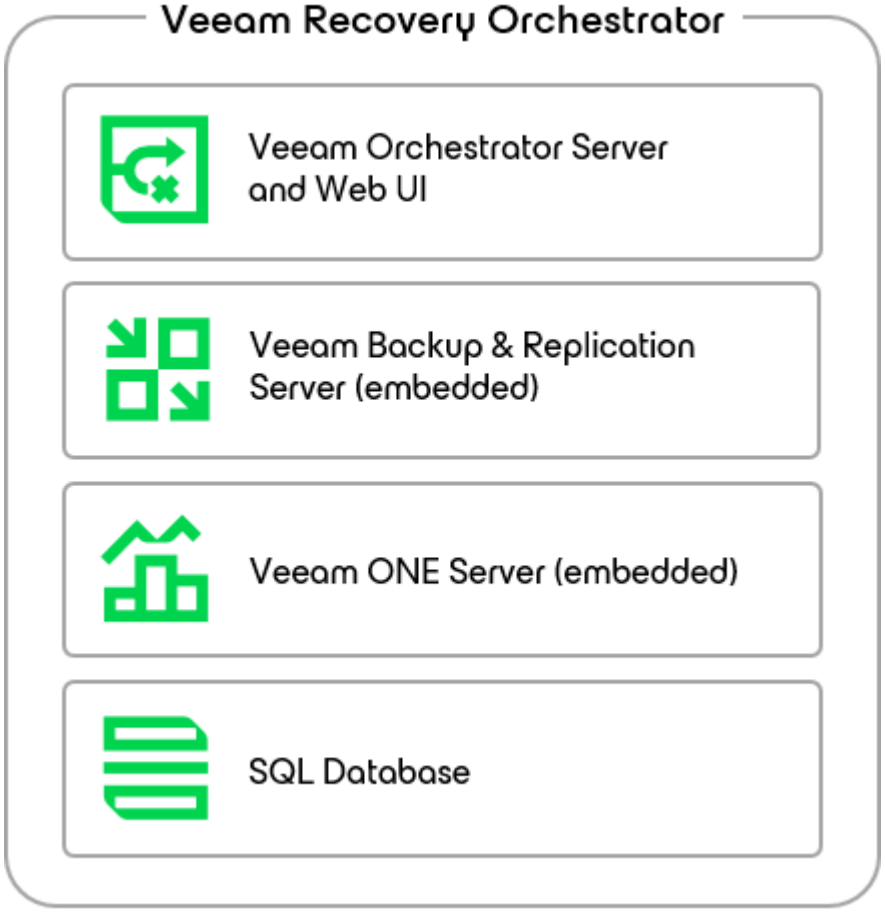
Veeam Orchestrator Server

The Orchestrator server is the configuration, administration and management core of the Orchestrator architecture. This is where recovery plans are created, audited, tested and executed. Internally, the Orchestrator server is comprised of the following components:

- **Veeam Orchestrator Server Service** — is responsible for managing recovery plans, and administering user roles and permissions.
- **Veeam Orchestrator Web UI** — is a web-based user interface that allows users to interact with the Veeam Orchestrator Server Service, and to perform various configuration and administration actions. In the Orchestrator UI, recovery plans are designed, checked, tested and executed.
- **Veeam Backup & Replication Server** — is installed with the Orchestrator server to supply Veeam PowerShell libraries and support certain disaster recovery scenarios. It is referred to as an "embedded server". If a license is applied, the server can work as a fully functional Veeam Backup & Replication server.
- **Veeam ONE Server** — handles the Veeam ONE Business View engine to gather inventory. It is referred to as an "embedded" server. The server works as a fully functional Veeam ONE server.
- **SQL Server** — is used to host configuration data. A Microsoft SQL Server Express instance can be installed locally. However, for best performance and scalability, Microsoft SQL Server Enterprise edition is recommended, which may be a remote server.

All Orchestrator components can be deployed on a single Windows-based physical or virtual machine using the unified installer.

> **IMPORTANT**
>
> Installation of the Orchestrator server on a machine already running Veeam Backup & Replication or Veeam ONE is not supported.



Veeam Backup & Replication Servers

Deploy an Orchestrator agent to each of your Veeam Backup & Replication servers to orchestrate the recovery of protected machines.

[Optional] vCenter Servers

All vCenter Servers that manage protected VMs, or that will host recovered backups, must be connected to the Orchestrator server.

Veeam Recovery Orchestrator 13 allows you to recover VMs to vCenter Servers managed by VMware Cloud Director. For more information, see the Veeam Backup & Replication User Guide, section Backup for VMware Cloud Director.

> **NOTE**
>
> You can recover only VMs protected by VMware Cloud Director backup jobs. Recovering VMs protected by VMware Cloud Director replication and CDP replication jobs is not supported.

[Optional] SCVMM Servers

All System Center Virtual Machine Manager (SCVMM) servers that manage protected VMs, or that will host recovered backups, must be connected to the Orchestrator server.

> **IMPORTANT**
>
> To allow Orchestrator to connect to an SCVMM server, you must first install the SCVMM console on the machine that runs Orchestrator as described in Microsoft Docs.

[Optional] Hyper-V and Azure Local Clusters

All standalone Hyper-V and Azure Local clusters that will host recovered backups must be connected to the Orchestrator server — either as a direct connection or as part of an SCVMM hierarchy.

[Optional] NetApp Storage Systems

All NetApp storage systems must be connected to the Orchestrator server. That is, you must connect both storage virtual machines (SVMs) that manage the source volumes hosting VM disks and configuration files, and SVMs that manage the replicated volumes.

> **NOTE**
>
> You can connect only SVMs to the Orchestrator server. Connections to NetApp clusters and nodes are not supported.

[Optional] HPE Storage Systems

All HPE storage systems must be connected to the Orchestrator server. That is, you must connect storage systems that manage volumes hosting VM disks and configuration files, and storage systems that manage volumes storing replicated data.

> **NOTE**
>
> You can connect only storage systems to the Orchestrator server. Connections to StoreServ Management Consoles are not supported.

Deployment Scenarios

Orchestrator supports a number of deployment scenarios. This document describes 6 common scenarios.

- Orchestrating restore to Microsoft Azure from vSphere VM and Veeam agent backups
- Orchestrating restore to Microsoft Hyper-V from vSphere and Hyper-V VM backups
- Orchestrating restore to VMware vSphere from vSphere and agent backups
- Orchestrating failover based on storage replication and vSphere VMs
- Orchestrating failover based on Veeam vSphere replication jobs
- Orchestrating restore and VM replica failover in clean room

You can also combine any of the described scenarios to support your own data protection strategy.

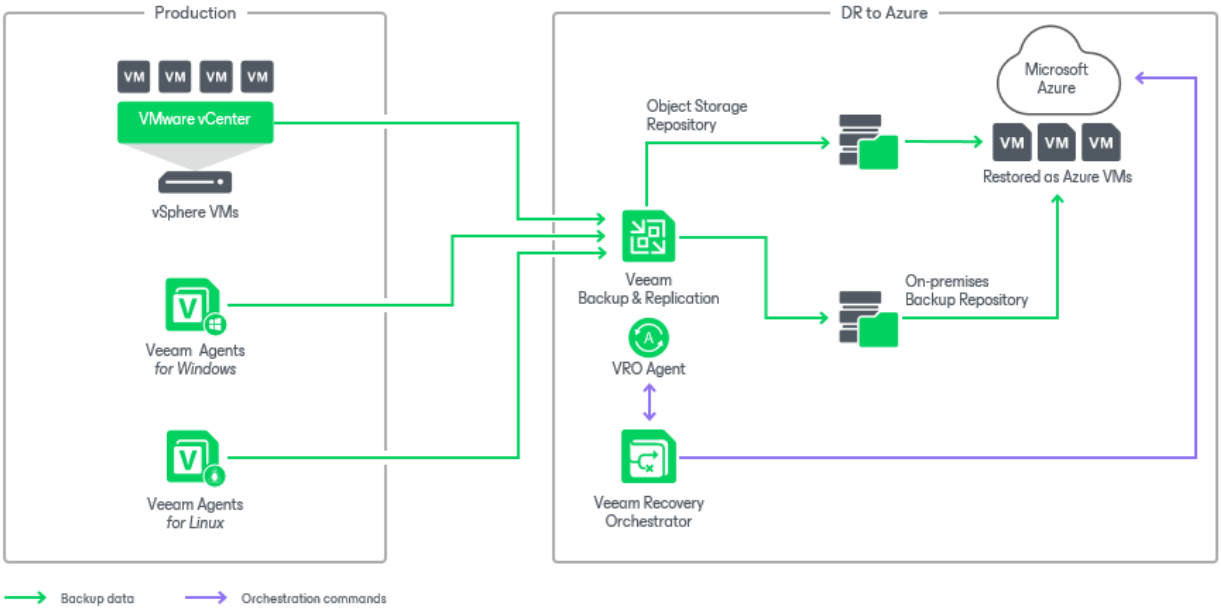
Scenario 1: Orchestrating Restore to Microsoft Azure

This deployment scenario illustrates recovery to Microsoft Azure from both Veeam agent and vSphere VM backups created by Veeam Backup & Replication.

First, a Microsoft Azure compute account should be registered in any Veeam Backup & Replication server that is connected to Orchestrator. For more information, see the Veeam Backup & Replication User Guide, section Microsoft Azure Compute Accounts.

In this scenario, physical workloads are protected by Veeam Agent for Windows or Veeam Agent for Linux, and vSphere VM workloads are protected by Veeam Backup & Replication. All these workloads can be recovered into the Microsoft Azure cloud as virtual machines. Orchestrator can use both on-premises and object storage repositories, and leverage Veeam Secure Restore while recovering agent and vSphere backups as new Microsoft Azure VMs.

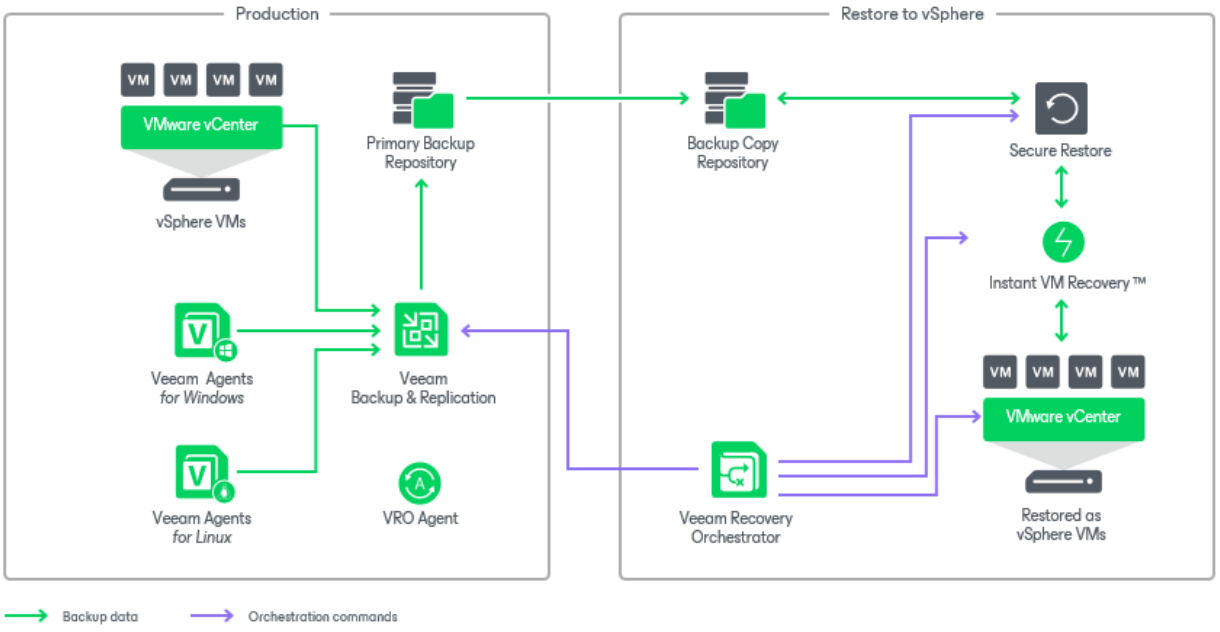
> **NOTE**
>
> If you have a PowerShell script that you want to run as part of the recovery process, you can upload your script into Orchestrator, and it will be executed when recovering machines to Microsoft Azure.



Scenario 2: Orchestrating Restore to VMware vSphere

This deployment scenario illustrates recovery to a VMware vSphere environment from vSphere VM and Veeam agent backups created by Veeam Backup & Replication.

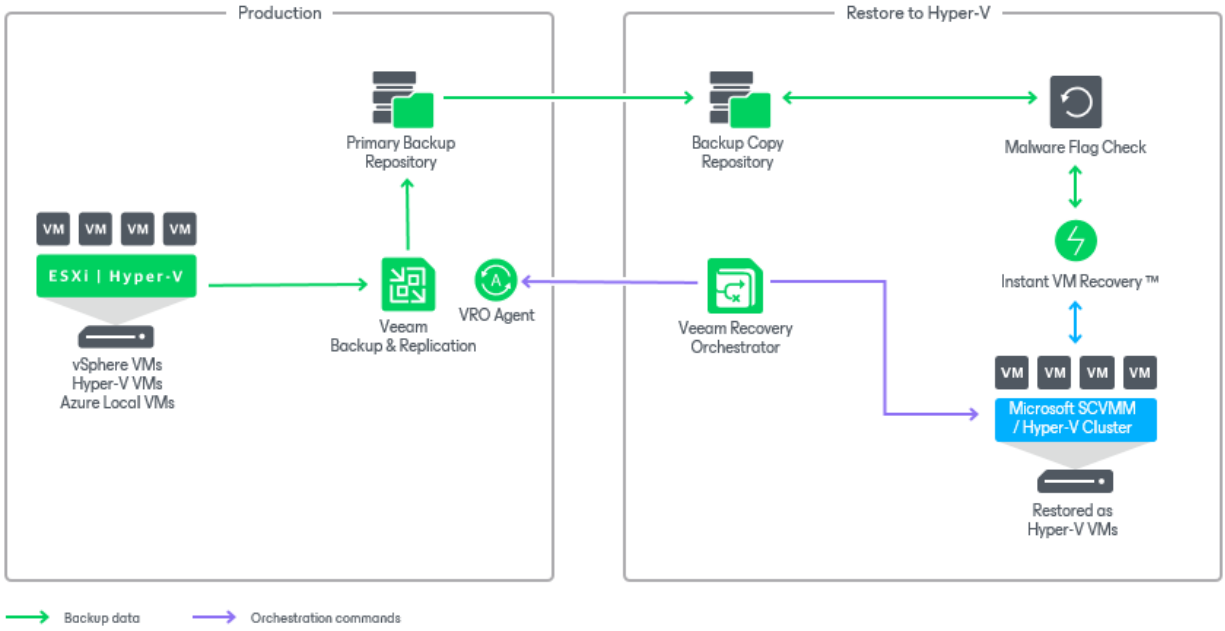
In this scenario, physical workloads are protected by Veeam Agent for Windows or Veeam Agent for Linux, and vSphere VM workloads are protected by Veeam Backup & Replication. All these workloads can be recovered into the VMware vSphere environment as virtual machines. Orchestrator can use both primary and copy backup repositories, and leverage both Veeam Secure Restore and Veeam Instant VM Recovery while recovering agent and VM backups as new vSphere VMs.



Scenario 3: Orchestrating Restore to Microsoft Hyper-V and Azure Local (Azure Stack HCI)

This deployment scenario illustrates recovery to a Microsoft Hyper-V environment from vSphere and Hyper-V VM backups created by Veeam Backup & Replication.

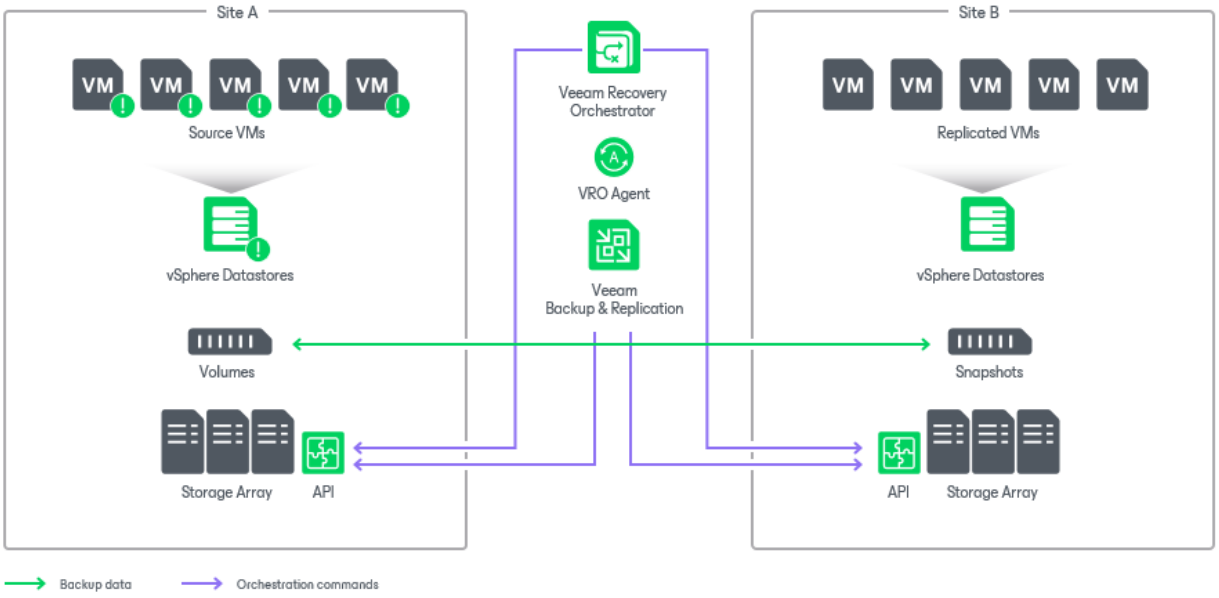
In this scenario, vSphere and Hyper-V VM workloads are protected by Veeam Backup & Replication. All these workloads can be recovered into the Microsoft Hyper-V environment as virtual machines. Orchestrator can use both primary and copy backup repositories, and leverage both Veeam Secure Restore and Veeam Instant VM Recovery while recovering VM backups as new Hyper-V VMs.



Scenario 4: Orchestrating Storage and VM Failover

This deployment scenario illustrates recovery based on replicated storage snapshots containing vSphere VMs.

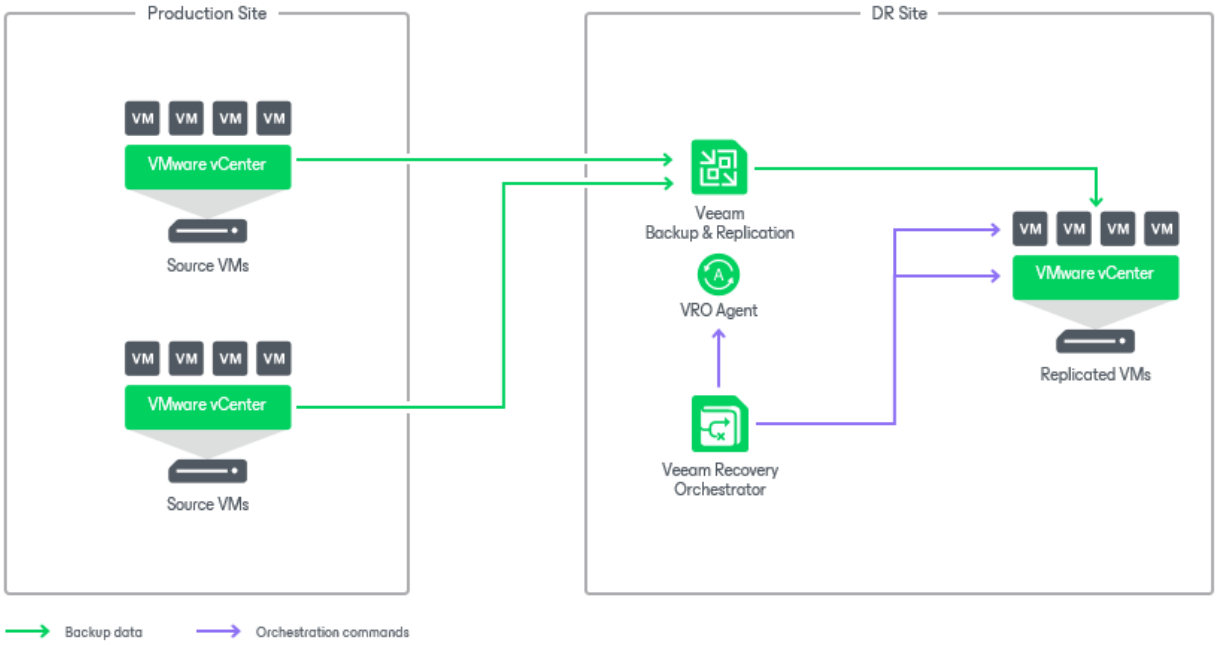
In this scenario, vSphere VMs are deployed on storage that is replicated between Site A and Site B. The Veeam Backup & Replication server triggers the creation of application-aware storage snapshots to protect the VMs. The Orchestrator server provides plan management, testing and execution, automating the failover of the storage volumes and the re-registration of VMs in the destination site.



Scenario 5: Orchestrating VM Replica Failover

This deployment scenario illustrates recovery based on vSphere VM replicas created by Veeam Backup & Replication.

In this scenario, you can switch from the original VMs in the production site to the VM replicas in the disaster recovery (DR) site. The Orchestrator server provides failover plan management, testing and execution, failing over all VMs and performing verification tests and checks to ensure successful recovery.



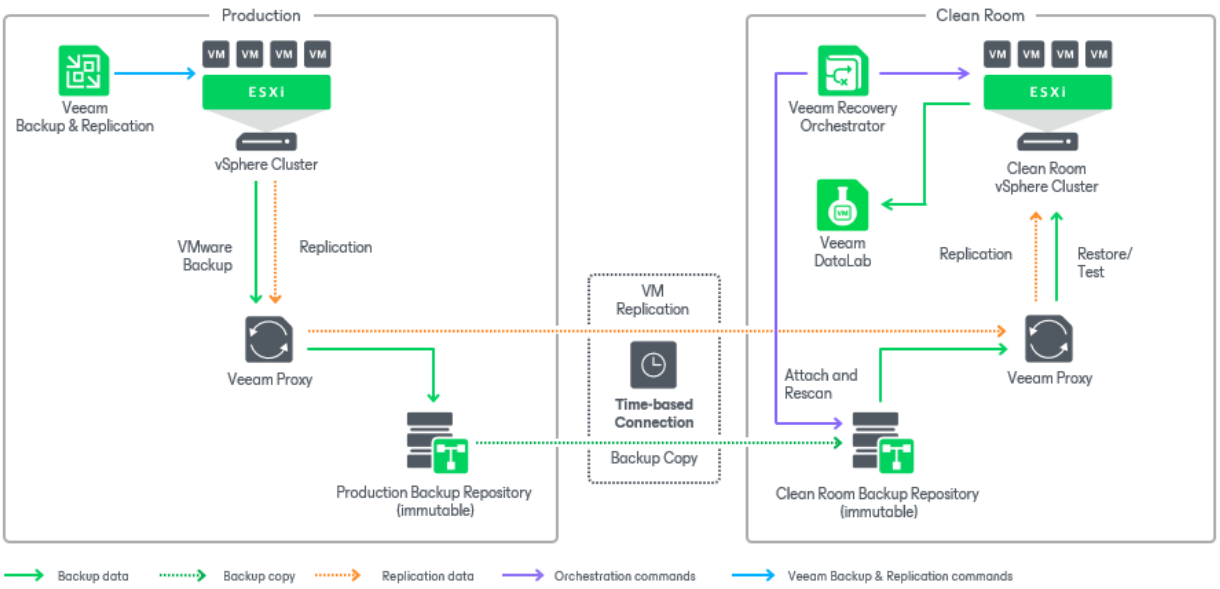
Scenario 6: Orchestrating Restore and VM Replica Failover in Clean Room

This deployment scenario illustrates recovery to a VMware vSphere environment based on vSphere VM replicas and VM backups created by Veeam Backup & Replication in case the Veeam Backup & Replication server that protects your production workloads becomes unavailable. You can also use this scenario to recover your workloads if the production vCenter Server goes offline or if you need to temporarily disconnect Orchestrator from the network for security reasons.

In this scenario, Veeam Backup & Replication periodically copies backed-up data from the primary backup repository located in the production site to an immutable backup repository located in a remote environment (also referred to as "clean room"). If the production Veeam Backup & Replication server goes down, Orchestrator will be able to switch to the embedded Veeam Backup & Replication server to perform restore and failover.

IMPORTANT

- You cannot use the clean room scenario to test VM replicas in DataLabs.
- You can use only directly attached storage (Windows, Linux, Linux Hardened) in the clean room scenario.
- You can recover VMs only from vSphere backups in the clean room scenario. Recovery of machines from Veeam agent backups is not supported.
- Sharing repositories across several Veeam Backup & Replication installations in the clean room scenario is not supported. Therefore, before connecting a repository to a new Veeam Backup & Replication server, make sure the currently connected Veeam Backup & Replication server is either permanently or temporarily offline.



Planning and Preparation

Before you start installing Orchestrator, check supported virtualization platforms, system requirements, permissions and network ports used for data transmission.

System Requirements

The machine where Orchestrator will be deployed must meet the necessary hardware and software requirements, and must have all the required certificates installed. In addition to Orchestrator functions, the Orchestrator server can function as a Veeam Backup & Replication server and a Veeam ONE server and, if used in this way, must have sufficient resources provided.

IMPORTANT

Consider the following limitations:

- Installation of Orchestrator on a machine already running Veeam Backup & Replication or Veeam ONE is not supported.
- Installation of Orchestrator on a machine running Microsoft Windows Server Core is not supported.
- Installation of Orchestrator server components in a PostgreSQL database is not supported.
- Installation of Orchestrator server or agent on a machine with the *Domain Controller* role is not supported.
- Installation of Veeam Backup Enterprise Manager on the same machine that runs the Veeam Orchestrator Server Service is not supported.

Specification	Requirement
Hardware	Hardware requirements depend on the size of the managed infrastructure. For more information, see Hardware Recommendations.
OS	Only 64-bit versions of the following operating systems are supported: • Microsoft Windows Server 2025 • Microsoft Windows Server 2022 • Microsoft Windows Server 2019 • Microsoft Windows Server 2016 Orchestrator can be installed on a Windows Server OS, either domain-joined or in a workgroup.
SQL Server	Local and remote installations of the following versions of Microsoft SQL Server are supported: • Microsoft SQL Server 2022 • Microsoft SQL Server 2019 • Microsoft SQL Server 2017 (2017 SP2 Express Edition is included in the setup) • Microsoft SQL Server 2016 **Note**: It is not recommended that you use the Express Edition in any production Orchestrator deployments — it should be used for product evaluation only.

Specification	Requirement
Veeam Orchestrator Agent	An Orchestrator agent is required to trigger orchestration commands on remote Veeam Backup & Replication servers. The remote Veeam Backup & Replication server must meet the following requirements: • The server must run Veeam Backup & Replication version 12.3 or later. Note that some new functionality in Orchestrator version 13 will not be available until the remote server is upgraded to version 13.0.1. • The server must be deployed on a Windows Server OS or as a Veeam Software Appliance (either standalone or clustered). **Note**: Network address translation (NAT) between the remote Veeam Backup & Replication server and Orchestrator server is not supported.
Authentication	Only NTLM authentication is supported.
Additional Software	All components will be installed during setup. For inline editing of report templates, Microsoft Word from Microsoft Office 2010 SP2 or later is required.

Specification	Requirement
[Optional] Virtualization Platform	• VMware vSphere 7.0, 8.0, 9.0 • VMware Cloud Director • System Center Virtual Machine Manager (SCVMM) 2022 and 2025 • Hyper-V Windows Server 2022 and 2025 • Azure Local (formerly Azure Stack HCI) 23H2 or later **Notes:** • As direct connections to vSphere hosts are not supported, the Orchestrator server must be connected to VMware vCenter Servers. • The Orchestrator server can be connected either to SCVMM servers, or standalone Hyper-V or Azure Local clusters. • Although Orchestrator can operate in cloud service provider environments, some specific Cloud Connect features may not be supported (for example, Veeam Cloud Connect Replication, importing backups from Veeam Cloud Connect repositories, using VMware Cloud Director as a target recovery location and so on).
[Optional] Storage System	• HPE 3PAR 3.3.1, 3.3.2 MU1 • HPE Primera 4.3, 4.4, 4.5 • HPE Alletra 9000 9.3 or later • HPE Alletra MP (B10000) 10.2 or later • NetApp ONTAP 9.10, 9.11, 9.12, 9.13, 9.14, 9.15, 9.16, 9.17 • Lenovo DM/DG Series 9.10, 9.11, 9.12, 9.13, 9.14, 9.15, 9.16, 9.17 **Notes:** • Orchestrated failover of volumes protected by SnapMirror synchronous replication is not supported for NetApp ONTAP version 9.12 or later. • Orchestrated failover of Consistency Groups (CG) protected by SnapMirror asynchronous replication is not supported for NetApp ONTAP 9.12 or later. • Orchestrated failover of volumes protected using SnapVault is not supported. • Orchestrated failover of SVMs protected using SnapMirror is not supported.

Hardware Recommendations

Number of Protected Systems*	1-1500	1500-5000	5000-10000	10000-20000+
CPU	8 vCPUs for the Orchestrator server 4 vCPUs - 8 vCPUs for the Microsoft SQL Server	10 vCPUs for the Orchestrator server 10 vCPUs for the Microsoft SQL Server	12 vCPUs for the Orchestrator server 12 vCPUs for the Microsoft SQL Server	>20 vCPUs for the Orchestrator server >20 vCPUs for the Microsoft SQL Server

Number of Protected Systems*	1-1500	1500-5000	5000-10000	10000-20000+
Memory	12 GB for the Orchestrator server 8 GB for the Microsoft SQL Server	40 GB for the Orchestrator server 40 GB for the Microsoft SQL Server	70 GB for the Orchestrator server 70 GB for the Microsoft SQL Server	>70 GB for the Orchestrator server >70 GB for the Microsoft SQL Server
SQL Server	N/A	N/A	Disk IOPS 1000 (minimum)	Disk IOPS 2000 (minimum)
Hard Disk Space	30 GB for product installation and sufficient disk space for the Veeam ONE database (if installed locally). Use the Veeam ONE Database Calculator to size application data. 20 GB for the Microsoft SQL Server. By default, the Microsoft SQL Server database grows as follows: • ~1 Mb per one Readiness Check Report or Plan Execution Report for a plan that includes 10 machines. • ~10 Mb per one Readiness Check Report or Plan Execution Report for a plan that includes 100 machines. • ~100 Mb per one Readiness Check Report or Plan Execution Report for a plan that includes 1000 machines. **Note:** SSD disks are recommended to use with the Microsoft SQL Server.			

*The total number of systems protected by replicas and backups (including Veeam agent and VMware vSphere VM backups). Assumes one restore point per system per day.

Roles

There are 3 roles that you can assign to users and user groups who will work with Orchestrator. Actions a user can perform depend on the role.

- **Administrator** – can perform all administration actions, and can also act as a Plan Author and Plan Operator.
- **Plan Author** – can enable, disable, reset, create, edit, test and scan plans.
- **Plan Operator** – can perform readiness checks, and can also test, scan, schedule and run plans that are enabled.

The following table describes the access available to users with different roles in the Orchestrator UI.

Access	Administrator	Plan Author	Plan Operator
Administration	Full	None	None
Create, Edit, Enable, Disable, Reset, Delete Plans	Full	Full	Reset only
Check Plans	Full	Full	Full
Test Plans	Full	Full	Enabled plans only
Scan Plans	Full	Full	Enabled plans only
Schedule and Run Plans	Full	None	Enabled plans only
Reports and Templates	Full	Full	Read Only

Permissions

The accounts used to install and administer Orchestrator must have the following permissions.

Account	Required Permission
Setup Account	The account used for product installation must be a domain or local account that has the local Administrator permissions on the target machine.
Orchestrator Service Accounts	The accounts used to run Orchestrator services, Veeam Backup & Replication services and Veeam ONE services must have the local Administrator permissions on the Orchestrator server. The accounts must also be granted the *Log on as a service* right. For more information on Windows security policy settings, see Microsoft Docs.
Orchestrator Agent Account	The account used to install and run the Orchestrator agent on a Veeam Backup & Replication server must have the local Administrator, the Veeam Backup Administrator and the database Administrator permissions on the server.
Orchestrator User Accounts	The accounts used to log in to the Orchestrator UI must be granted the *Allow log on locally* right. For more information on Windows security policy settings, see Microsoft Docs.
vCenter Server Permissions	The account used to connect the vCenter Server to Orchestrator must have administrative permissions. You can either grant the *Administrator* role to the account or configure more granular permissions. For more information, see Veeam Backup & Replication Required Permissions and Veeam ONE Required Permissions. To be able to open sessions on the vCenter Server system, the account must also have the *Sessions.Validate session* privilege on the root vCenter Server. For more information on session privileges, see VMware Docs.
SCVMM Server Permissions	The account used to connect the SCVMM server to Orchestrator must have administrative permissions. You can either grant the *Administrator* role to the account or configure more granular permissions. For more information, see Veeam Backup & Replication Required Permissions and Veeam ONE Required Permissions.
Microsoft Hyper-V and Azure Local Cluster Permissions	The account used to connect the standalone Microsoft Hyper-V or Azure Local cluster to Orchestrator must have administrative permissions. You can either grant the *Administrator* role to the account or configure more granular permissions. For more information, see Veeam Backup & Replication Required Permissions and Veeam ONE Required Permissions.

Account	Required Permission

Microsoft SQL Server Permissions	Different sets of Microsoft SQL permissions are required in the following cases:
	• **Installation** (remote or local): the current account needs the *CREATE ANY DATABASE* permission on the SQL server level. After the database is created, this account automatically gets a *db_owner* role and can perform all operations with the database.
	• **Operation**: the account used to run Orchestrator, Veeam Backup & Replication and Veeam ONE services requires the following permissions:
	  ○ The *db_owner* permission and permissions to execute stored procedures for the configuration databases on the Microsoft SQL Server.
	  ○ The *db_datareader* permissions to read data from the SQL server master database.
	  ○ The *public*, *db_datareader* and *SQLAgentUserRole* permissions to be able to access the data and objects in the MSDB database.
	For more information, see Veeam Backup & Replication Required Permissions and Veeam ONE Required Permissions.

NetApp Storage System Permissions	The account used to connect the storage system to Orchestrator must be granted permissions described in section NetApp Data ONTAP Permissions. **Note**: Multiple connections to a storage system using different credentials are not supported.
HPE Storage System Permissions	The account used to connect the storage system to Orchestrator must be assigned the *Super* or *Edit* role. If the account is assigned the *Edit* role, both the account and the storage resources that you plan to access must belong to the same domain. **Note**: Multiple connections to a storage system using different credentials are not supported.
Orchestrator Credentials for Application Verification	The account used to run the **Verify SharePoint URL** step, must be assigned the *SharePoint_Shell_Access* role and must be a member of the *WSS_ADMIN_WPG* group on the processed machine. The account used to run the **Verify Exchange Mailbox** step, must be assigned the *ApplicationImpersonation* role on the processed machine.

NetApp Data ONTAP Permissions

The account used to connect to a NetApp Data ONTAP storage system must have the following permissions:

Command/Directory	Access/Query Level
DEFAULT	none
job	readonly
lun	all
network interface	readonly
snapmirror	all
version	readonly
volume	all
vserver	readonly

Ports

The following table lists typical connection settings required for Orchestrator components.

> **NOTE**
>
> These requirements assume that the embedded Veeam Backup & Replication and Veeam ONE components are used only in the default configuration (to support Orchestrator activities), and not for full production functionality.
>
> If the embedded Orchestrator components are used for additional functionality, see the Veeam Backup & Replication User Guide, section Ports and Veeam ONE Deployment Guide, section Ports for the full requirements.

From	To	Protocol	Port	Notes
Orchestrator server	vCenter Server	TCP/HTTPS	443	Used by the embedded Veeam Backup & Replication and Veeam ONE servers to connect to the vCenter Server.
	SVM (NetApp)	HTTPS	443	Used by the Veeam Orchestrator Server Service to access the management interface of the storage virtual machine.
	Storage system (HPE)	HTTPS	443	Used by the Veeam Orchestrator Server Service to connect to the HPE Primera storage system.
		HTTPS	8080	Used by the Veeam Orchestrator Server Service to connect to the HPE 3PAR storage system.
	Microsoft SQL Server	TCP	1433	Required to provide access to the Microsoft SQL Server where Orchestrator, embedded Veeam Backup & Replication and ONE databases are stored. Additional ports may need to be open depending on your configuration. For more information, see Microsoft Docs.
	Veeam Backup & Replication server (Microsoft Windows)	TCP	135; 445	Required to deploy Orchestrator agents to remote Veeam Backup & Replication servers.

From	To	Protocol	Port	Notes
	Veeam Backup & Replication server	TCP	443	Used by the Veeam Orchestrator Server Service to connect to remote Veeam Backup & Replication servers.
		TCP	49152 to 65535	Dynamic RPC port range for Microsoft Windows 2008 and later. For more information, see this Microsoft KB article. **Note**: If you use the default Microsoft Windows firewall settings, you do not need to configure dynamic RPC ports. During setup, Orchestrator automatically creates a firewall rule for the runtime process. However, If you use custom firewall settings or encounter the "*RPC function call failed*" error during the application-aware processing, you will need to configure dynamic RPC ports. For more information on how to configure RPC dynamic port allocation to work with firewalls, see this Microsoft KB article.
	Veeam Backup Enterprise Manager server	HTTPS	50001	Used by the Veeam Orchestrator Server Service to detect Veeam Backup & Replication servers running on Veeam Enterprise Manager servers.
Veeam Backup & Replication server	Orchestrator server	HTTPS	8888	Required to deploy Orchestrator agents to remote Veeam Backup & Replication servers. Then, this port is used by the Veeam Orchestrator Server Service to connect to the Orchestrator agents running on these servers.
	Orchestrator server	TCP	443	Used by remote Veeam Backup & Replication severs to connect to Orchestrator agents.
	vSphere VM guest OS	TCP	Ports for VM guest OS connection	Required to run in-guest scripts on a virtual machine being tested, failed over or restored. For the full list of ports that must be opened to ensure proper communication of the Veeam Backup & Replication server with the runtime coordination process deployed inside the VM guest OS, see the Veeam Backup & Replication User Guide, section Ports. Make sure that the VM is configured to allow inbound traffic: the default *File and Printer Sharing (SMB-In)* firewall rule must be enabled.

From	To	Protocol	Port	Notes
Workstation web browser	Veeam ONE Reporter Web UI	HTTPS	1239	Required to access the Veeam ONE Reporter console from a user workstation.
Orchestrator UI	Orchestrator server	TCP	12348	Used by the Orchestrator UI to connect to the remote Veeam Orchestrator Server Service.
Orchestrator UI	Orchestrator server	HTTPS	9898	Required to access the Veeam Orchestrator Web UI from a user workstation.
Veeam ONE Client	Orchestrator server	TCP	139; 445	Used by Veeam ONE Client to communicate with the embedded Veeam ONE server.
Veeam Backup Catalog service	Veeam Backup & Replication server	TCP	9393	Required to collect indexing data for backup and replication jobs, and to store this data in the Veeam Backup Catalog folder on the Veeam Backup & Replication server.
Veeam Backup & Replication console	Veeam Backup & Replication server	TCP	9392	Used by the Veeam Backup & Replication console to connect to the Veeam Backup & Replication server.
Veeam backup source connection	Veeam Backup & Replication server	TCP	9401	Used by the mount server to communicate with the Veeam Backup & Replication server.
Veeam License Update Server	Orchestrator server	TCP	443	Required to get automatic license updates.

Licensing

This section describes how Orchestrator is licensed, what types of licenses you will need to get access to the necessary Orchestrator functionality, how you can install and update licenses, how you can submit license usage reports and so on.

License Types

> **IMPORTANT**
>
> To work with Orchestrator, you can use either a VDP *Premium* license or a VDP *Advanced* license that includes additional Orchestrator licenses. You cannot use Orchestrator with a VDP *Foundation* license as it does not include a section for licensing Veeam ONE.

Veeam offers the following types of licenses for Orchestrator.

Paid Licenses

There are 3 types of paid licenses available for Orchestrator:

- **Rental license** is a full license intended for service providers.

  The expiration date of the *Rental* license is set to the contract end date, which is the last day of the month and normally one month from the contract start date.

- **Subscription license** is a full license intended for enterprises.

  The expiration date of the *Subscription* license is set to the end of the subscription term. The *Subscription* license term is normally 1-5 years from the license issue date.

- **Perpetual license** is a permanent license for enterprises.

  The perpetual license does not have an expiration date and allows you to use product versions issued before the support expiration date.

Free Licenses

There are 2 types of free licenses available for the Veeam Data Platform *Premium* edition:

- **Evaluation license** is a full license that can be used for product evaluation.

  The trial license is valid for 30 days from the moment of the product download.

- **NFR license** is a full license that can be used for product demonstration, training and education.

  This license is not for resell or commercial use.

Licensed Objects

To work with Orchestrator, you will require licenses for objects to be orchestrated by the solution (backups or replicas of virtual or physical machines) and for the managed Veeam environment (Veeam Backup & Replication and Veeam ONE). This section describes how these managed objects are licensed, and what types of licenses you will need to obtain.

Licensing for Orchestrated Objects

Each machine processed by a recovery plan requires a license. A **license** here is a unit (or token) that is assigned to a machine to make it manageable in Orchestrator. In version 13, each machine consumes one license instance regardless of the number of plans and DataLabs that include the machine.

> **NOTE**
>
> All machines added to the plan consume license instances, even if they have no replica or backup. All machines used in DataLab groups to support plan testing environments also consume license instances.

Licensing for Remote Veeam Backup & Replication Servers with Orchestrator Agents

Each remote Veeam Backup & Replication server connected to Orchestrator must have the *Enterprise* or *Enterprise PLUS* edition installed. Otherwise, Orchestrator will not be able to deploy its agent on the server.

> **IMPORTANT**
>
> - Connections to Veeam Backup & Replication servers with the Essentials pack license are not supported.
> - Connections to Veeam Backup & Replication servers with the NFR license are supported only if the Orchestrator server has the NFR license installed.

Edition check is the only check made by Orchestrator to verify licensing of remote Veeam Backup & Replication servers. All operations with licenses on remote Veeam Backup & Replication servers are accomplished according to the Veeam Backup & Replication guidelines. For more information on Veeam Backup & Replication licensing, see the Veeam Backup & Replication User Guide, section Licensing.

Licensing for Embedded Veeam Backup & Replication and Veeam ONE Servers

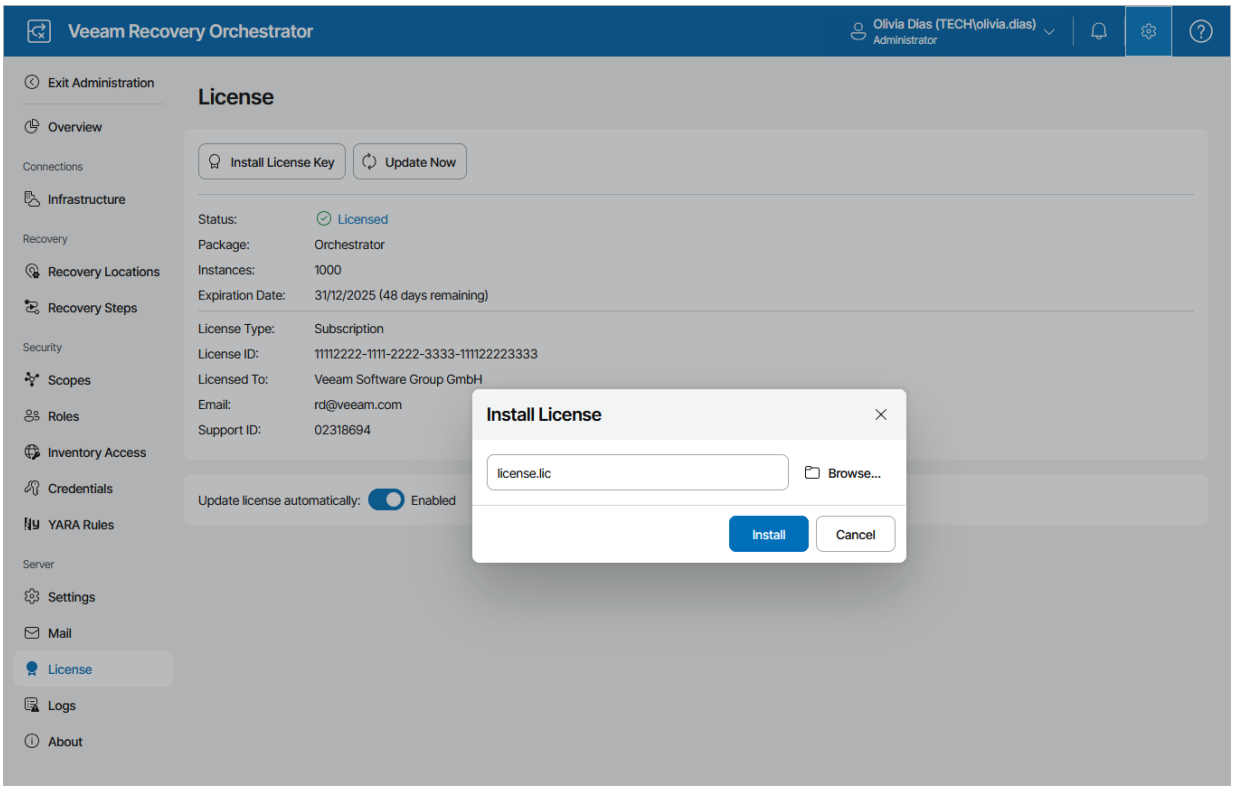
Orchestrator is always installed with the other components of the Veeam Data Platform (VDP) — Veeam Backup & Replication and Veeam ONE. The license file is a VDP *Premium* license that also licenses the embedded components.

Installing License

Before you install Orchestrator, you must specify a path to a license file. Without a license, you will not be able to start installation.

After you install Orchestrator, you can change the license that you provided during installation:

1. Switch to the **Administration** page.
2. Navigate to **License**.
3. Click **Install License Key**.
4. In the **Install License** window, click **Browse** to locate a license file, and then click **Install**.



Updating License

When your Orchestrator license expires, you must update it. To update the license, you can use either of the following methods:

- Update the license manually
- Update the license automatically

> **NOTE**
>
> You can update the license automatically only if you have a paid license (*Rental*, *Perpetual* or *Subscription*) installed.

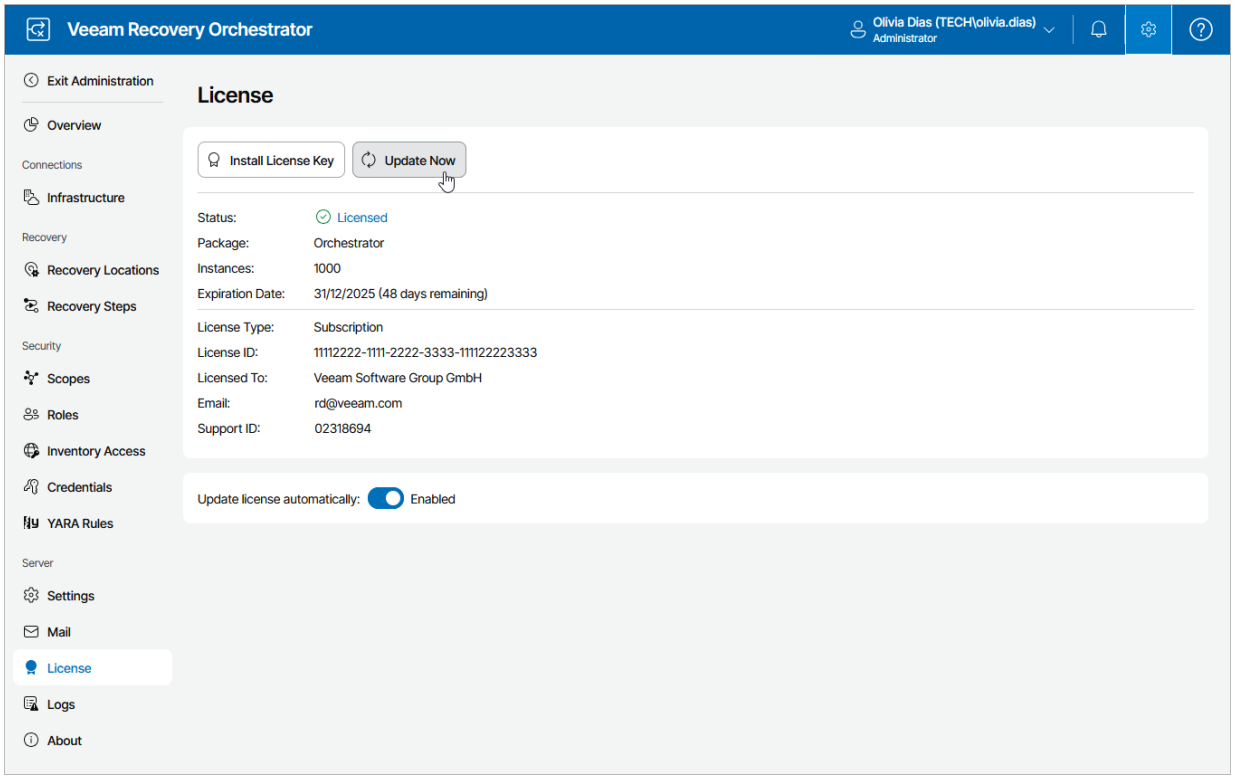
Updating License Manually

You can update the Orchestrator license from the Veeam License Update Server manually, on demand. When you update the license manually, Orchestrator connects to the Veeam License Update Server on the Internet, downloads a new license (if the license is available) and installs it to replace the old license.

To update the license manually:

1. Switch to the **Administration** page.
2. Navigate to **License**.
3. Click **Update Now**.

   Orchestrator will connect to the Veeam License Update Server on the Internet, download a new product license from it (if available), install it, and display a dialog box with the license update status.
4. In the displayed dialog box, click **OK** to acknowledge the license update result.



Manual license update can complete with the following results:

- **Operation is successful**. A new license key has been successfully generated, downloaded and installed.
- **A new license is not required**. The currently installed license key does not need to be updated.
- **The Veeam License Update Server has failed to generate a new license**. You will get this message if an error occurs on the Veeam License Update Server side.
- **Veeam Recovery Orchestrator has received an invalid answer**. You will get this message if there are connectivity issues between the Veeam License Update Server and Orchestrator server.
- **Licensing by the contract has been terminated**. The contract has expired. In this case, Orchestrator automatically disables automatic license update.

For more information on the occurred issues, contact your license provider.

Updating License Automatically

> **NOTE**
>
> Automatic license update is available for paid licenses only.

You can instruct Orchestrator to update the license automatically. Automatic license update removes the need to perform license update manually every time it is about to expire. If automatic license update is enabled, Orchestrator proactively communicates with the Veeam License Update Server to obtain and install a new license before the current license expires.

- How Automated License Update Works
- Automatic Update Retries
- Enabling Automatic License Update

How Automated License Update Works

The process of automatic license update is performed in the following way:

1. After you enable automatic license update, Orchestrator starts sending weekly requests to the Veeam License Update Server on the Internet to check if a new license is available.
2. Seven days before expiration of the current license, Orchestrator starts sending requests once a day.
3. When a new license becomes available, Orchestrator automatically downloads and installs it to replace the old license.

Automatic Update Retries

If Orchestrator fails to update the license, it sends a notification to the contact person specified in the contract, and retries to update the license.

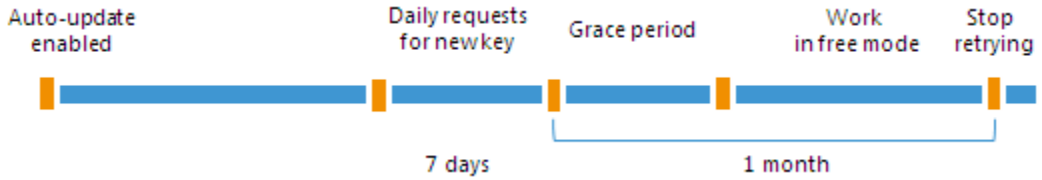
> **NOTE**
>
> To allow Orchestrator to send email notifications, you must connect an SMTP server that will be used for sending these notifications, as described in the Veeam Recovery Orchestrator Operations Guide, section Configuring General Settings.

Orchestrator retries to update the license key in the following way:

- If Orchestrator fails to establish a connection to the Veeam License Update Server, retry takes place every 60 minutes.
- If Orchestrator establishes a connection but the Veeam License Update Server does not return a new license key upon request, the retry takes place every 24 hours.

The retry period ends one month after the license expiration date. The retry period is equal to the number of days in the month of license expiration: for example, if the license expires in January, the retry period will be 31 days; if the license expires in April, the retry period will be 30 days.

If the retry period is over but the new license has not been installed, Orchestrator automatically disables automatic license update.



Enabling Automatic License Update with Proactive Support

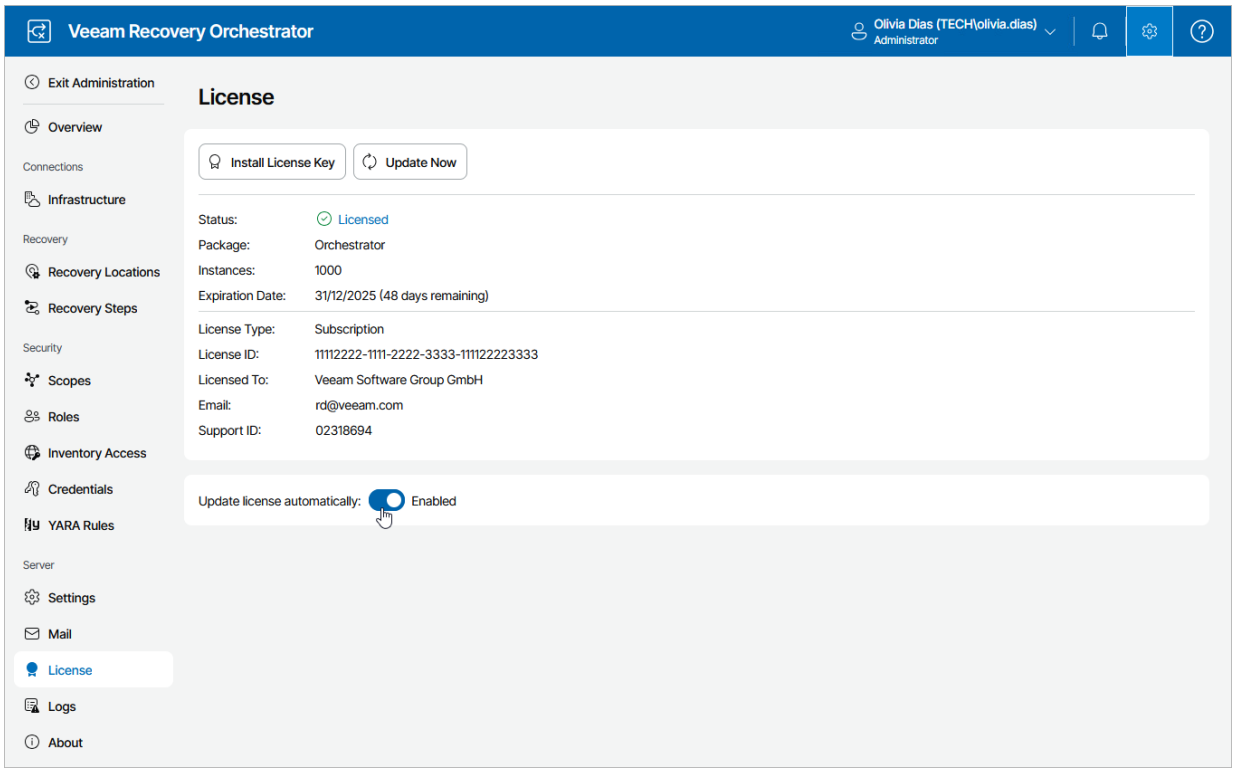
By default, automatic license update is disabled. To facilitate the license update process, you must enable it.

When automatic license update is enabled, Orchestrator additionally activates proactive support. As part of support, Orchestrator periodically sends an anonymized file with the current Orchestrator configuration and statistical information to the Veeam License Update Server. This file can be used by Orchestrator product management to improve the product. No information will be shared outside of Veeam at any time.

> **NOTE**
>
> Enabling automatic license update activates Automatic Usage Reporting. You cannot use automatic license update without automatic usage reporting.

To enable automatic license update:

1. Switch to the **Administration** page.
2. Navigate to **License**.
3. Set the **Update license automatically** toggle to *On*.



Automatic Usage Reporting

When automatic license update is enabled for *Rental, Subscription* and *Subscription* licenses, Orchestrator additionally performs automatic usage reporting.

As part of reporting, Orchestrator collects statistics on the current license usage and sends it periodically to the Veeam License Update Server. The report provides information on the contract ID, product installation ID, and the maximum number of licensed objects managed by Orchestrator over the past week. The reporting process runs in the background mode, once a week at a random time and day.

The collected data does not include information on Orchestrator usage by any individual person identifiable for Veeam, or any data gathered by Orchestrator. Veeam may also use the collected data for any other internal business purposes it deems appropriate, including (but not limited to) evaluation, improvement and optimization of Veeam licensing models.

By enabling automatic license update, you agree with collection, transmission and use of the reporting data.

> **NOTE**
>
> For *NFR* and *Evaluation* licenses, automatic usage reporting is performed by default and cannot be disabled.

License Expiration

Orchestrator license period is set in accordance with the chosen licensing program. When this period is over, you must update the license.

To ensure a smooth license update and provide sufficient time to install a new license file, Orchestrator offers a grace period after the license expiration date. During the grace period, Orchestrator keeps working in a full-version mode. The license status during this period appears as *Your license has expired and needs to be renewed*.

The duration of the grace period is defined by the license type:

License Type	Expiration Grace Period
Perpetual	Not applicable
Rental	60 days
Subscription	30 days

You must update the license before the end of the grace period. If you do not update the license, Orchestrator will stop executing recovery plans as soon as the grace period ends. Plan testing will be disabled as well.

To learn how to update Orchestrator license, see Updating License.

Recovered VM License Statuses

In Orchestrator, a recovered VM can have one of the following license statuses:

- **Licensed** — the machine has licenses assigned and is fully managed by Orchestrator.
- [Applies only to *Rental* licenses] **New** — the machine was added to a recovery plan within the current calendar month. The machine will be fully managed by Orchestrator until the end of the current month.
- **Unlicensed** — the machine does not have licenses assigned, as there are no more licenses in the license pool. The unlicensed machine will have either the *Licensed by Exceed* or *Unlicensed* status.
    - **Licensed by Exceed** — the machine has no licenses assigned but is within the allowed increase limit. The machine can be used in recovery plans until the end of the grace period.
    - **Unlicensed by Exceed** — the machine has no licenses assigned, and the allowed increase limit was exceeded. The machine will not be managed by Orchestrator.

    For more information, see Exceeding License Limit.

Exceeding License Limit

In some situations, the number of actually managed machines may exceed the license limit. For example, this may happen when some machines are temporarily used for testing.

To deal with a situation where you need to manage more machines than covered by your license, Orchestrator provides mechanisms of **Allowed Increase Limit** and **New VMs**.

Allowed Increase Limit (All Licenses)

Orchestrator allows you to increase the number of recovered VMs. The allowed license increase limit is defined by the license type.

License Type	Allowed Increase Limit
Rental	20 licenses or 20% of the license count (whichever is greater)
Subscription	10 licenses or 10% of the license count (whichever is greater) **Note**: 20 instances or 20% of the total instance count (whichever number is greater) if automatic license update is enabled and you have successfully submitted the license usage report within the last 30 days.
Perpetual	10 licenses or 10% of the license count (whichever is greater) **Note**: 20 instances or 20% of the total instance count (whichever number is greater) if automatic license update is enabled and you have successfully submitted the license usage report within the last 30 days.

When the number of machines managed by Orchestrator exceeds the license limit, Orchestrator will treat them as follows:

- If the number of machines is within the allowed increase limit or less, Orchestrator will continue to manage all machines until your license expires.

  To detect what machines will be managed, a FIFO (first-in first-out) queue is maintained: machines that were added to Orchestrator plans first will be included in the allowed exceed scope first. The license status of machines within the increase limit will be set to *Licensed by exceed*.

  You must update the existing license by the license expiration date. Otherwise, the license status of machines within the increase limit will be set to *Unlicensed*, and these machines will no longer be managed by Orchestrator.

- If the number of machines is above the allowed exceed limit, the machines exceeding the licensed number plus the allowed increase limit will be excluded from management.

  The license status of machines above the increase limit will be set to *Unlicensed*.

New VMs (Rental Licenses)

To provide more flexibility and introduce a trial period for machine recovery, Orchestrator offers the concept of **New VMs**. New VMs are machines that were discovered by Orchestrator within the current calendar month. This mechanism is provided for *Rental* licenses only.

New machines are managed by Orchestrator as regular machines, but they do not consume licenses until the beginning of the new month. In license terms, New VMs are counted separately from regular managed machines. However, such machines do participate in all Orchestrator activities and are fully functional.

On the first day of the new month, the number of New VMs introduced in the previous month is added to the number of regular managed machines. Machines that were treated as New will be managed by Orchestrator in the following cases:

- If there are enough Orchestrator licenses to allocate to these machines.
- If there are no Orchestrator licenses, but the allowed increase limit has not been breached yet. In this case, the machines will obtain the *Licensed by exceed* status.

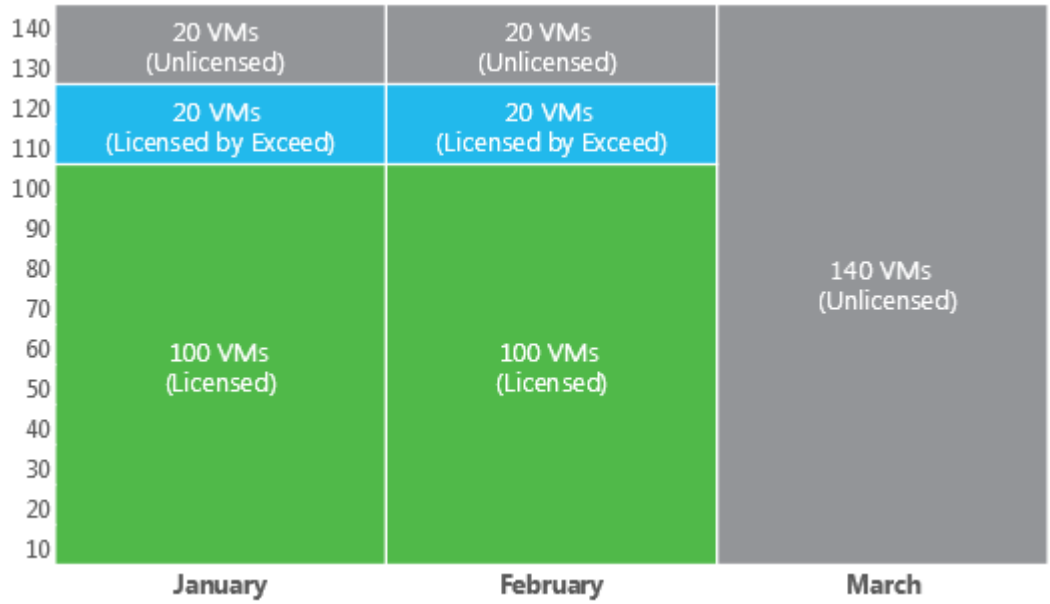
  If the allowed increase limit has been already surpassed, these machines will obtain the *Unlicensed* status.

Example

Consider the following example. Your *Rental* license covers 100 VMs. The license expires in 60 days.

At the beginning of January, the number of VMs is 140. Within the first 2 months (January and February), Orchestrator will manage 100 + 20 VMs that were added to recovery plans first (license limit + 20% allowed increase). 20 VMs that were added last will not be managed.

If the license is not updated upon expiration, in March, Orchestrator will change the status of all 140 VMs to *Unlicensed*.

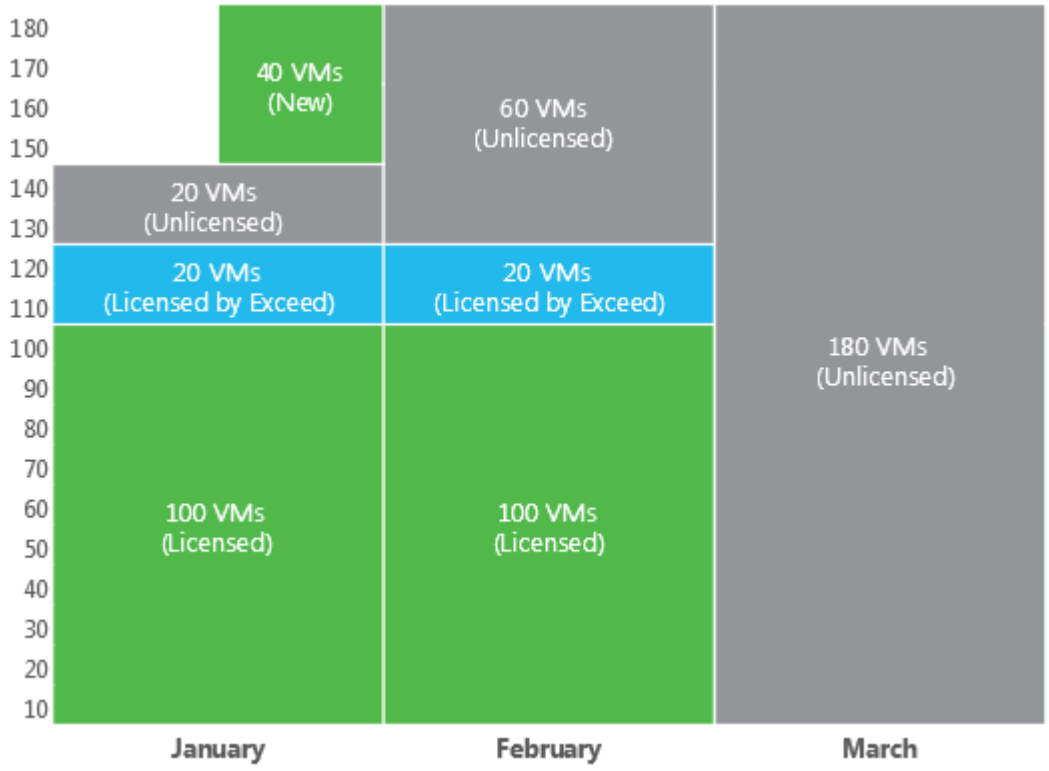


Consider the same example but with New VMs.

In the middle of January, 40 New VMs are added to recovery plans. Orchestrator will manage these VMs until the end of the month. If the license is not updated, and the license pool is not increased, in February, Orchestrator will change the license statuses as follows:

- The first 20 VMs that obtained the *Licensed by Exceed* status in January will keep the same *Licensed by Exceed* status.
- The second 20 VMs that obtained the *Unlicensed* status in January will keep the same *Unlicensed* status.
- The last 40 VMs added in the middle of January will obtain the *Unlicensed* status according to the FIFO queue.

If the license is not updated upon expiration, and the license pool is not increased, in March, Orchestrator will change the status of all 180 VMs to *Unlicensed*.



Viewing License Details

To view Orchestrator license details:

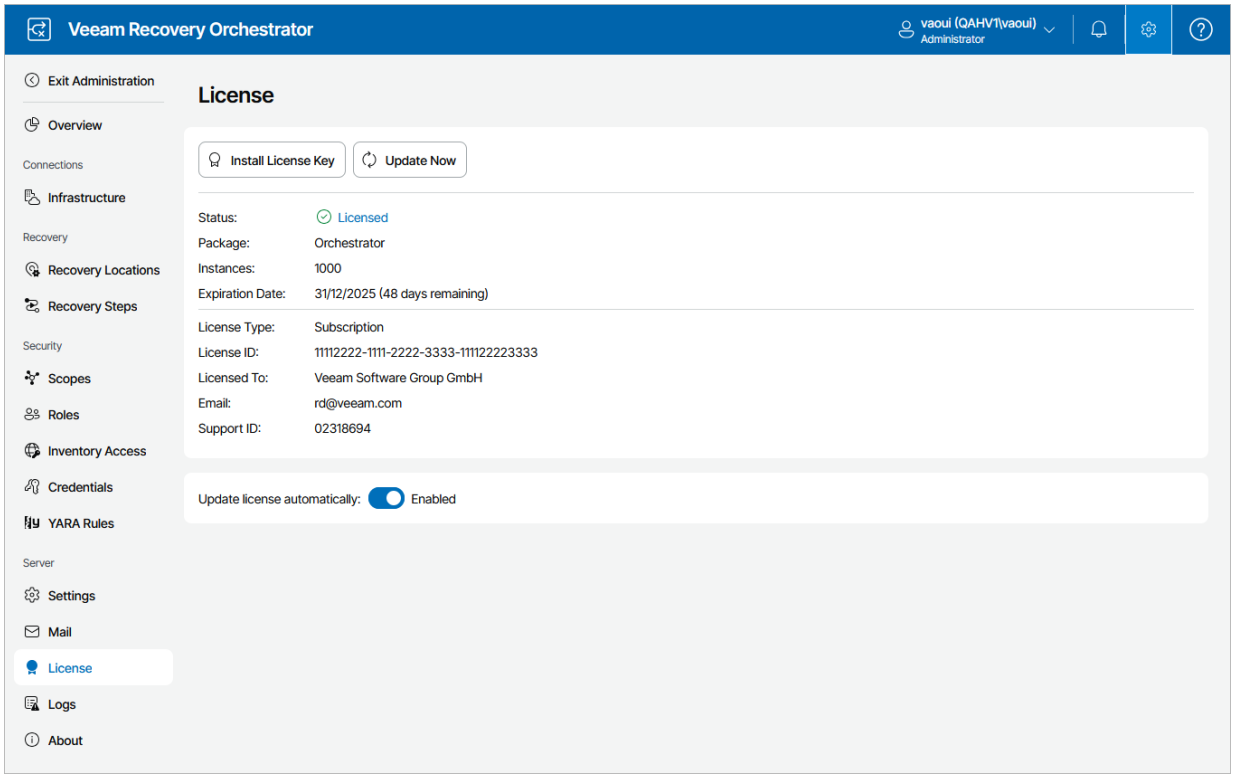
1. Switch to the **Administration** page.
2. Navigate to **License**.

The licensing section provides general information on the currently installed Orchestrator license:

- **Status** – the license status. The status will depend on the license type, the number of days remaining until license expiration, the number of days remaining in the grace period (if any), and the number of machines that exceeded the allowed increase limit (if any).

  Click the **Details** link to get more information on the number of licenses consumed by managed machines, and the number of licenses reserved for New VMs.

- **Instances** – the total number of licenses for machines included in the license file.
- **Expiration Date** – the date when the license will expire.
- **License Type** – the license type (*Rental*, *Subscription*, *Evaluation*, *Perpetual*, *NFR*).
- **License ID** – the ID of the provided license file (required for contacting Veeam Customer Support).
- **Licensed To** – the name of an organization to which the license was issued.
- **Package** – the software product for which the license was issued.
- **Email** – the email of a contact person specified in the contract.
- **Support ID** – the ID of the contract (required for contacting Veeam Customer Support).



Deployment

To start working with Orchestrator, you must configure the Orchestrator server:

1. Install Veeam Recovery Orchestrator including all embedded components on a machine that meets the system requirements.
2. Complete the Initial Configuration Wizard on the Orchestrator server.

> **NOTE**
>
> The Orchestrator solution can be installed in unattended mode. Installation is launched from the command line and performed without any user interaction.

After you perform these steps, you will be able to:

- Configure Orchestrator settings
- Create and manage recovery plans
- Review dashboards
- Generate documentation

For more information, see the Veeam Recovery Orchestrator Operations Guide.

Installing Veeam Recovery Orchestrator

During Orchestrator installation, Orchestrator server components will be installed all together on a single machine. For more information on the components, see Architecture Overview.

> **IMPORTANT**
>
> When installing Orchestrator, consider the following limitations:
>
> - Installation of Orchestrator on a machine already running Veeam Backup & Replication or Veeam ONE is not supported. The embedded Veeam Backup & Replication and Veeam ONE components are co-installed with the Orchestrator server.
> - Installation of Orchestrator server or agent on a machine with the *Domain Controller* role is not supported.

Before You Begin

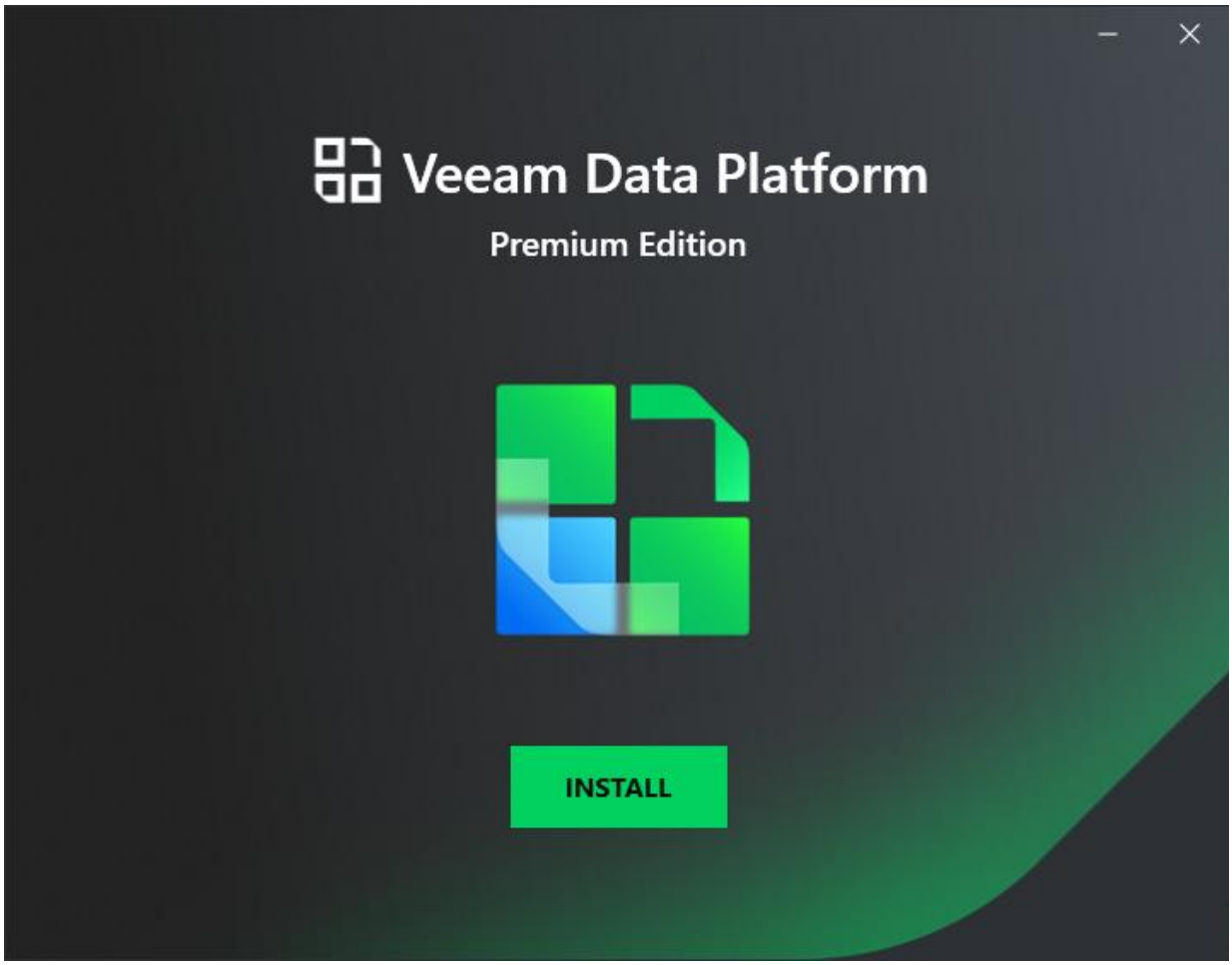
Before you begin installation, check the following prerequisites:

1. Make sure the machine where Orchestrator will be installed meets the prerequisite conditions described in section System Requirements.
2. Download the product installation file `VeeamDataPlatform_[date].iso` from the Veeam downloads page. You can burn the downloaded image file to a CD/DVD or mount the installation image to the target machine using disk image emulation software.

Step 1. Launch Splash Window

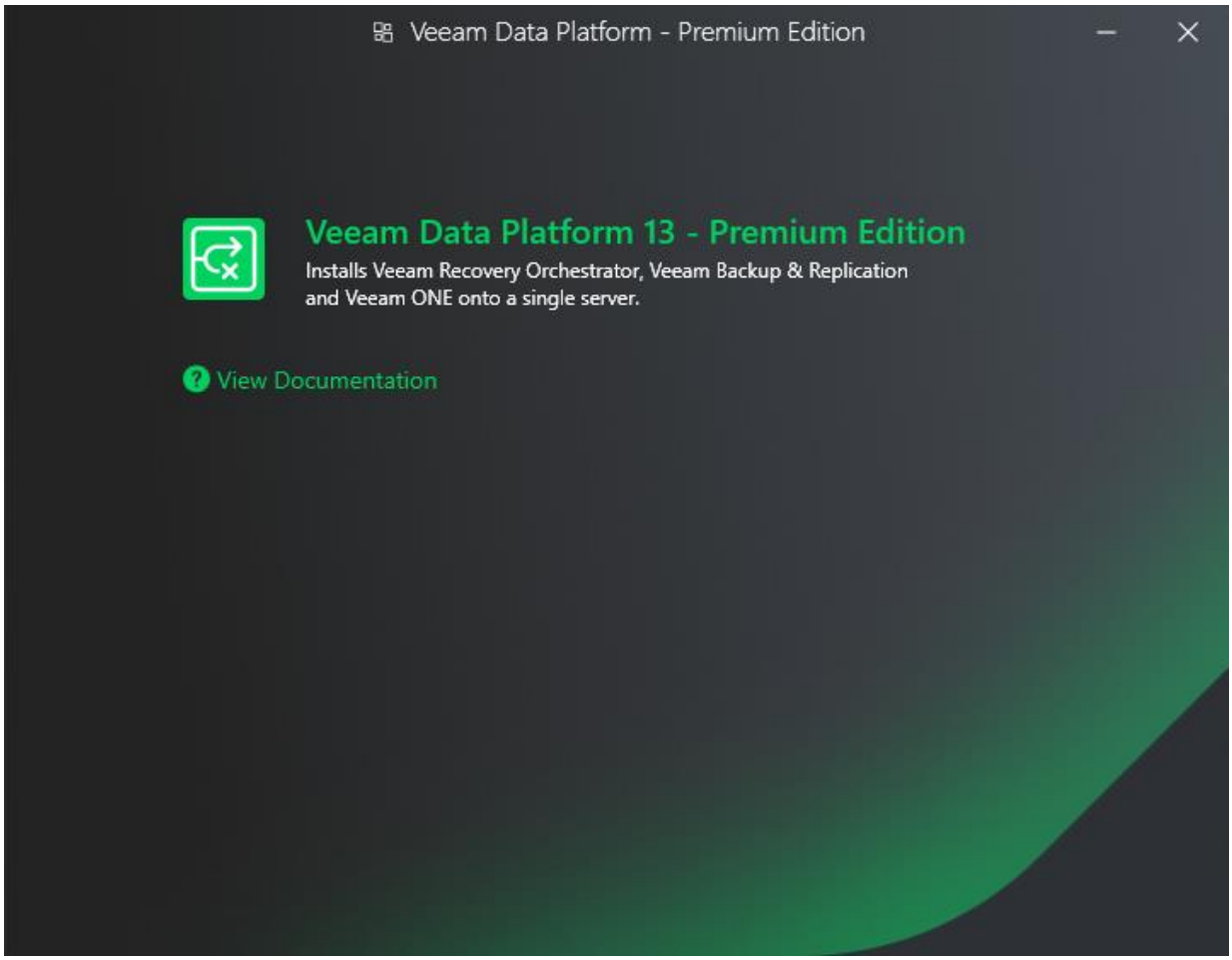
To launch the splash window, perform the following steps:

1. Log in to the machine where you want to install Orchestrator using an account with the local Administrator rights.
2. Insert the installation disc into the CD/DVD drive or mount the installation image. The setup will open a splash screen.
3. Click **Install**.



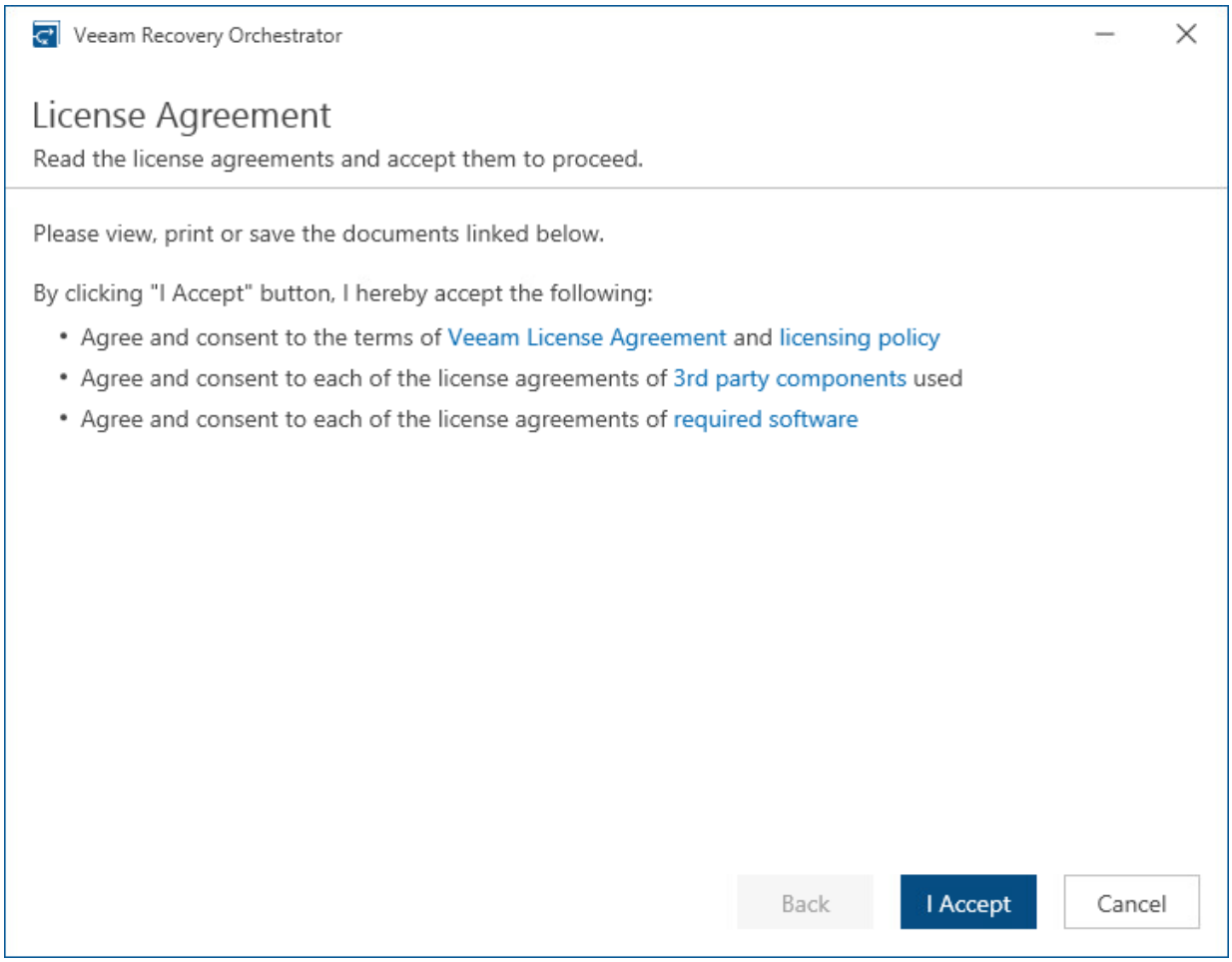
Step 2. Start Setup Wizard

To launch the **Veeam Recovery Orchestrator Setup** wizard, click **Veeam Data Platform 13 – Premium Edition**.



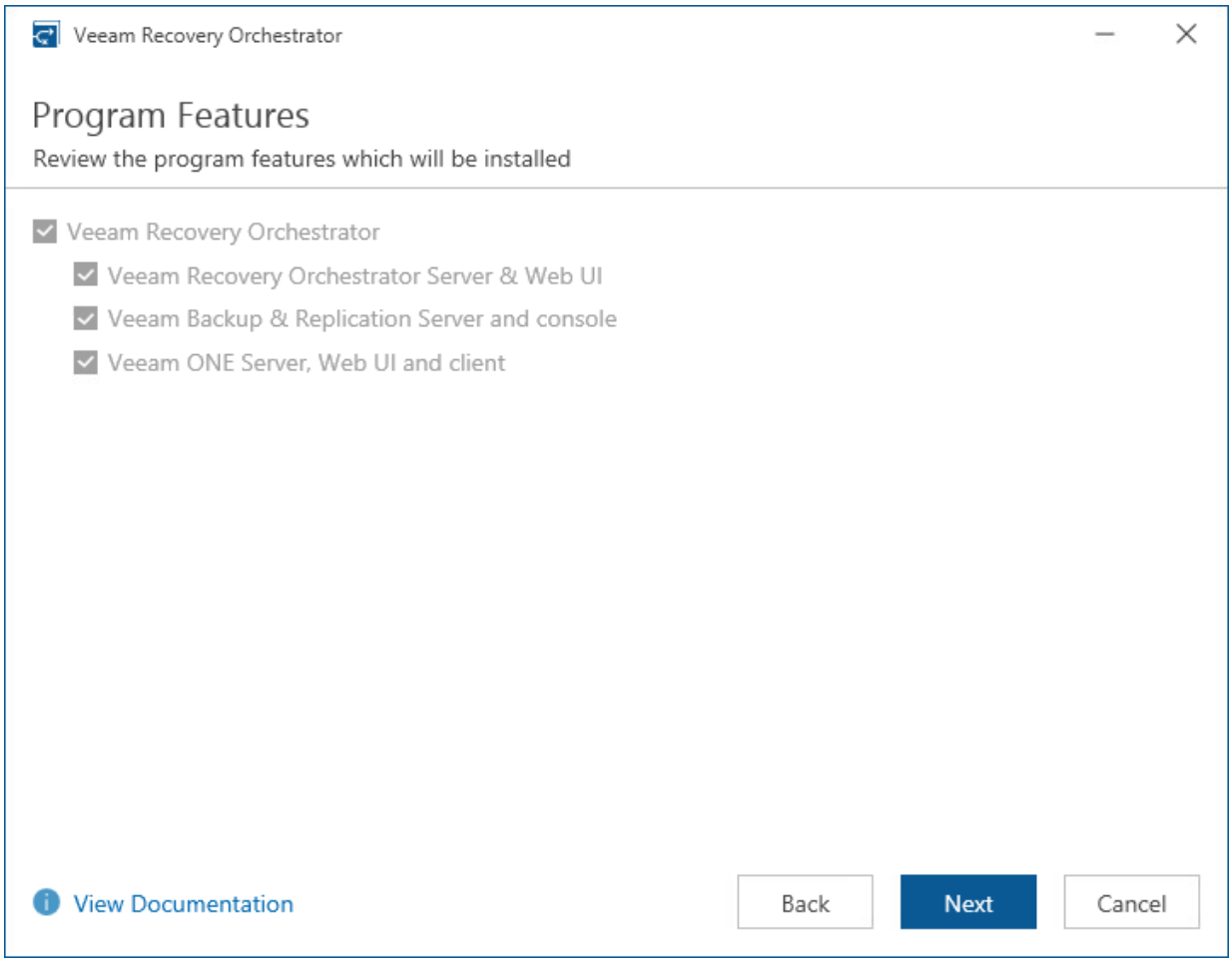
Step 3. Accept License Agreement

At the **License Agreement** step of the wizard, read and accept the Veeam license agreement, the licensing policy, the 3rd party components license agreement and the license agreement of the required software. If you reject the agreements, you will not be able to continue installation.



Step 4. Review Components to Install

At the **Program Features** step of the wizard, review Orchestrator components to be installed.



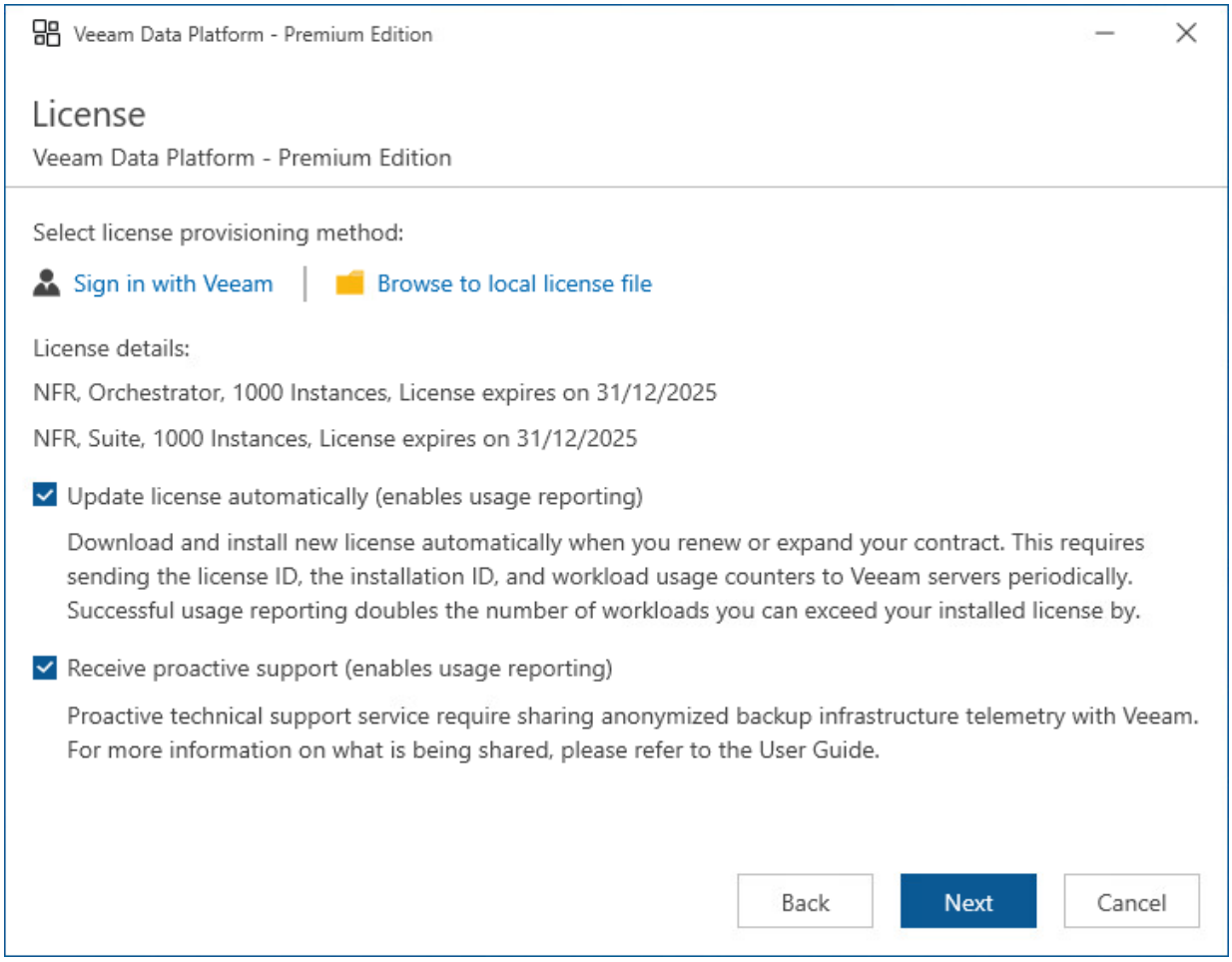
Step 5. Provide License File

At the **License** step of the wizard, do either of the following:

- Browse to a local folder on your workstation to locate the license file supplied to you by Veeam. To do that, click **Browse to local license file**.
- Log in to your Veeam account to upload a license file from the Veeam downloads page. To do that, click **Sigh in with Veeam**, enter the credentials of the account and choose the necessary file from the list of available licenses.

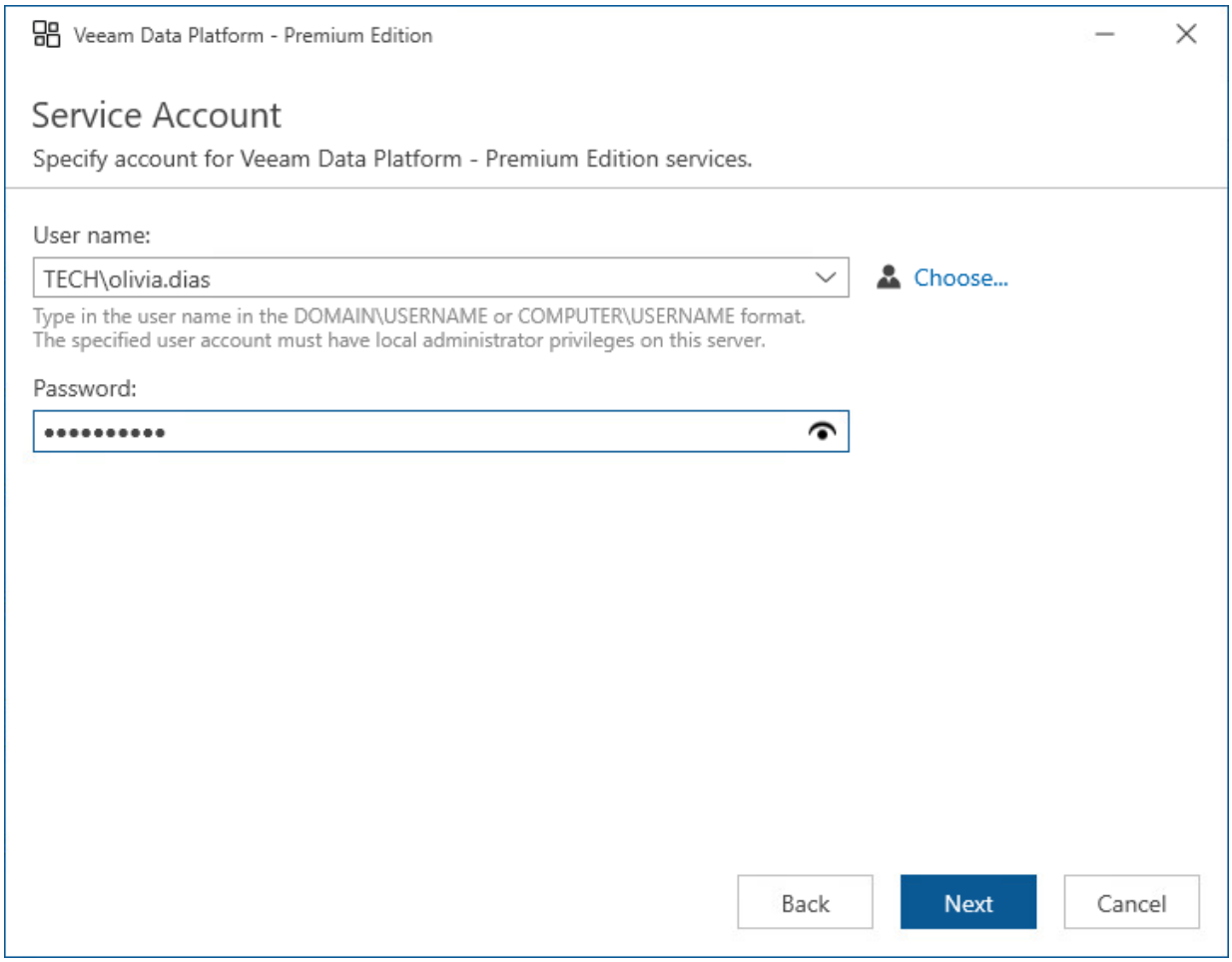
Note that you will not be able to continue installation without providing a license.

> **TIP**
>
> You can instruct Orchestrator to update the license automatically and perform proactive support. If automatic license update is enabled, Orchestrator proactively communicates with the Veeam License Update Server to obtain and install a new license before the current license expires; if proactive support is enabled, Orchestrator periodically sends an anonymized file with the current Orchestrator configuration and statistical information to the Veeam Server. You can enable automatic license update and proactive support later when configuring Orchestrator.



Step 6. Specify Service Account Credentials

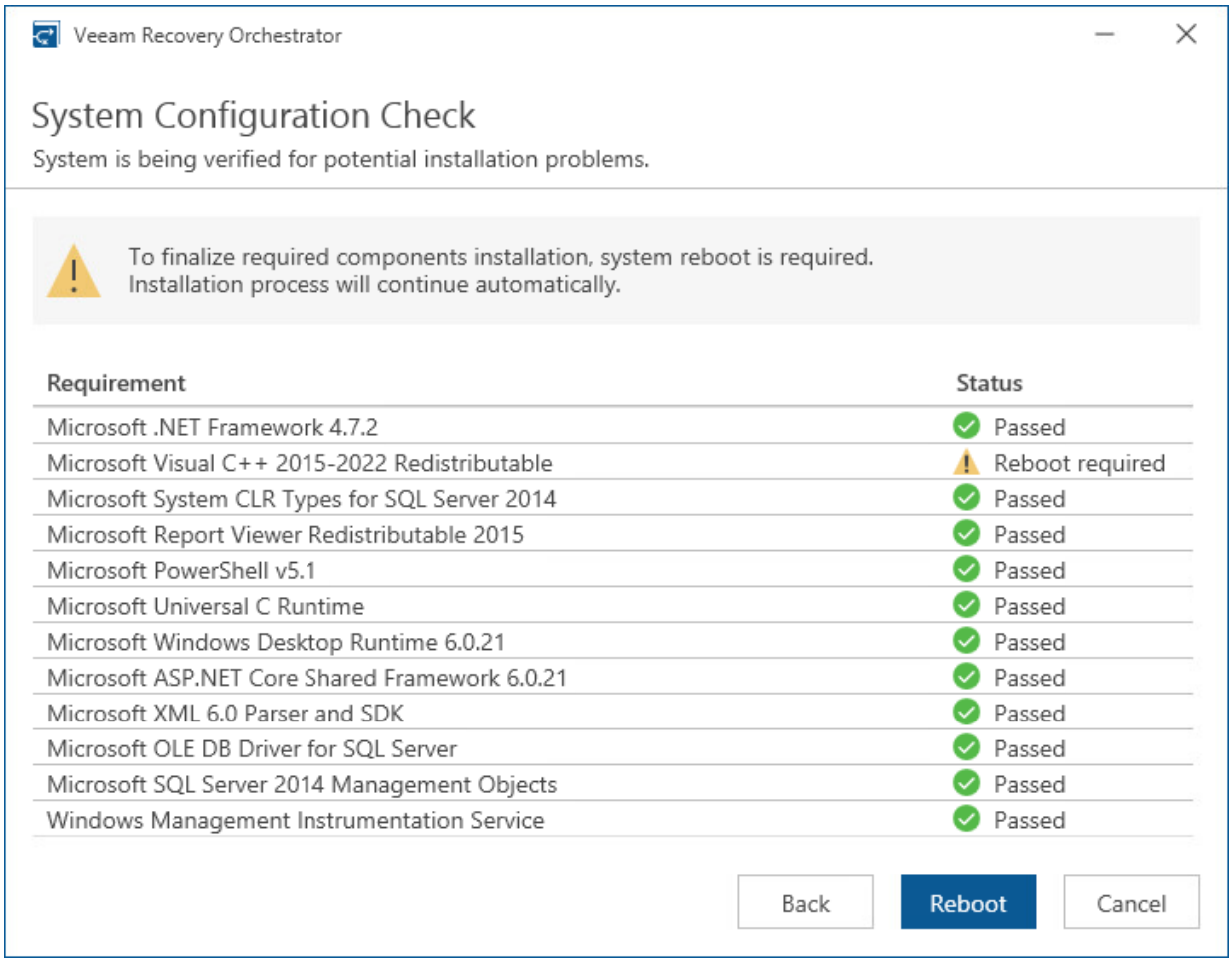
At the **Service Account** step of the wizard, enter credentials of the account under which the Veeam Data Platform – Premium Edition services will run. The account must be a member of the local *Administrators* group. The user name must be specified either in the *DOMAIN|USERNAME* or in the *USERNAME* format.



Step 7. Perform System Configuration Check

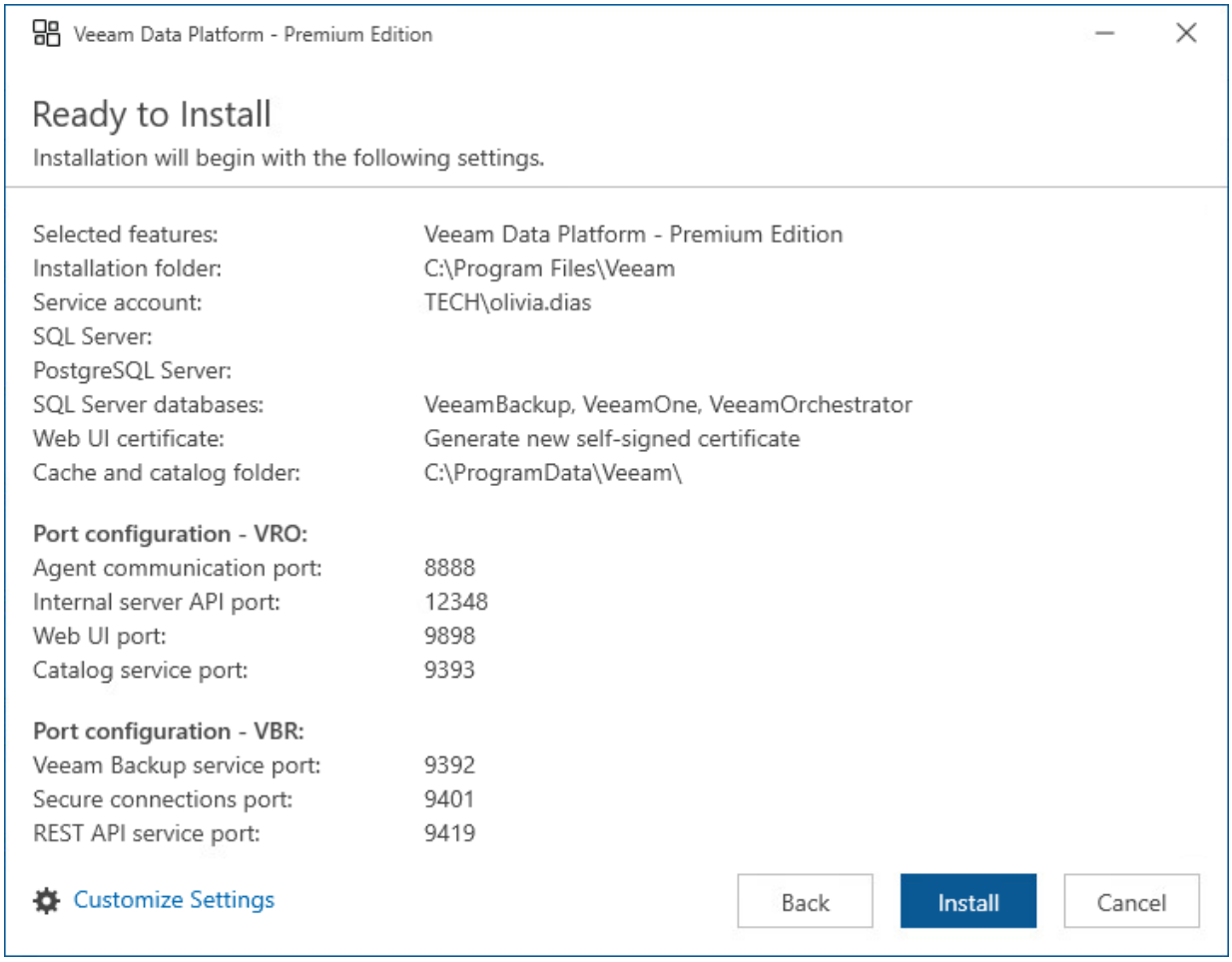
At the **System Configuration Check** step of the wizard, check whether all prerequisite software is available on the target system. If some of the required software components are missing, the wizard will install missing software automatically.

> **NOTE**
>
> Installation of the missing software may require performing a reboot — to do that, click **Reboot**.



Step 8. Review Default Installation Summary

At the **Ready to Install** step of the wizard, review the default installation configuration. Click **Install** to begin installation.



NOTE

If you want to use an existing local or remote Microsoft SQL Server instance, click **Customize Settings**. In this case, you will also be able to create Microsoft SQL Server databases, configure used ports, choose an SSL certificate to secure traffic between the Orchestrator UI and a web browser, and to select local folders where Orchestrator, Veeam ONE and Veeam Backup & Replication components will store data cache.

Step 9. Choose SQL Server

[This step applies only if you have clicked **Customize Settings** at the **Ready to Install** step of the setup wizard]

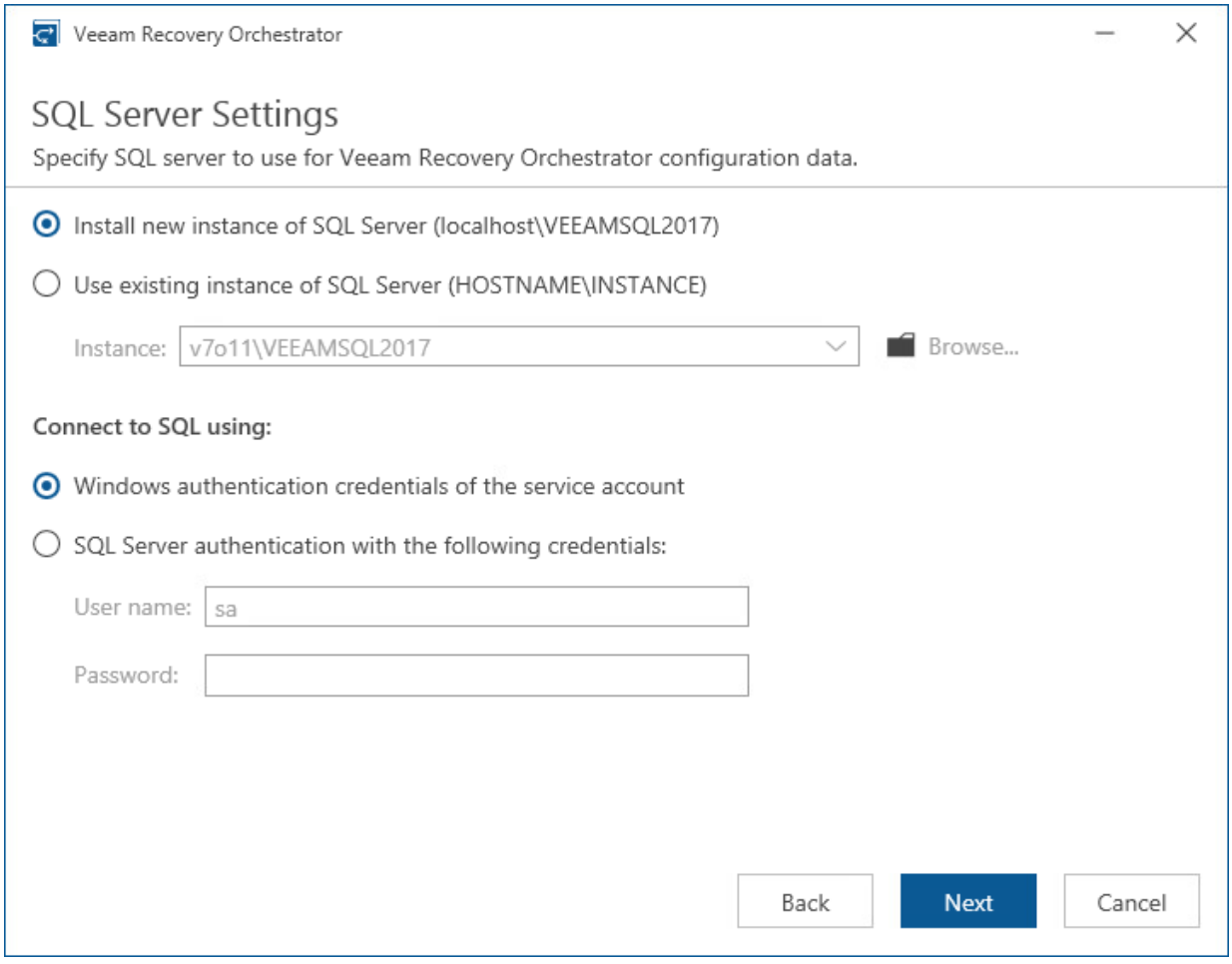
At the **SQL Server Settings** step of the wizard, choose a Microsoft SQL Server instance that will host the Orchestrator database:

- If on the target machine you do not have a Microsoft SQL Server instance that you can use for Orchestrator, select the **Install new instance of SQL Server** option. In this case, the setup will install Microsoft SQL Server Express locally, on the machine where you are installing Orchestrator.

> **NOTE**
>
> If a Microsoft SQL Server instance that meets Orchestrator system requirements is detected on the machine, you can only use the existing local Microsoft SQL Server instance or choose one that runs remotely. In this case, the option to install a new Microsoft SQL instance will be unavailable.

- If you want to use an existing local or remote Microsoft SQL Server instance, select the **Use existing instance of SQL Server** option and choose a local Microsoft SQL Server instance, or browse to a Microsoft SQL Server instance running remotely. You can either enter the address of the instance manually or use the **Browse** button to search among available remote instances.

  To connect to the Microsoft SQL Server instance, you must provide valid credentials for an account that will be used by Orchestrator components to access the Microsoft SQL Server database. You can either specify credentials explicitly or use Windows authentication credentials. Note that the account must have the *System Administrator* rights on the selected Microsoft SQL Server instance.



NOTE

During Orchestrator installation, by default, the setup will install Microsoft SQL Server Express to host Orchestrator databases. However, it is not recommended that you use the Express Edition in any production Orchestrator deployments — it should be used for product evaluation only.

Step 10. Choose PostgreSQL Server

[This step applies only if you have clicked **Customize Settings** at the **Ready to Install** step of the setup wizard]

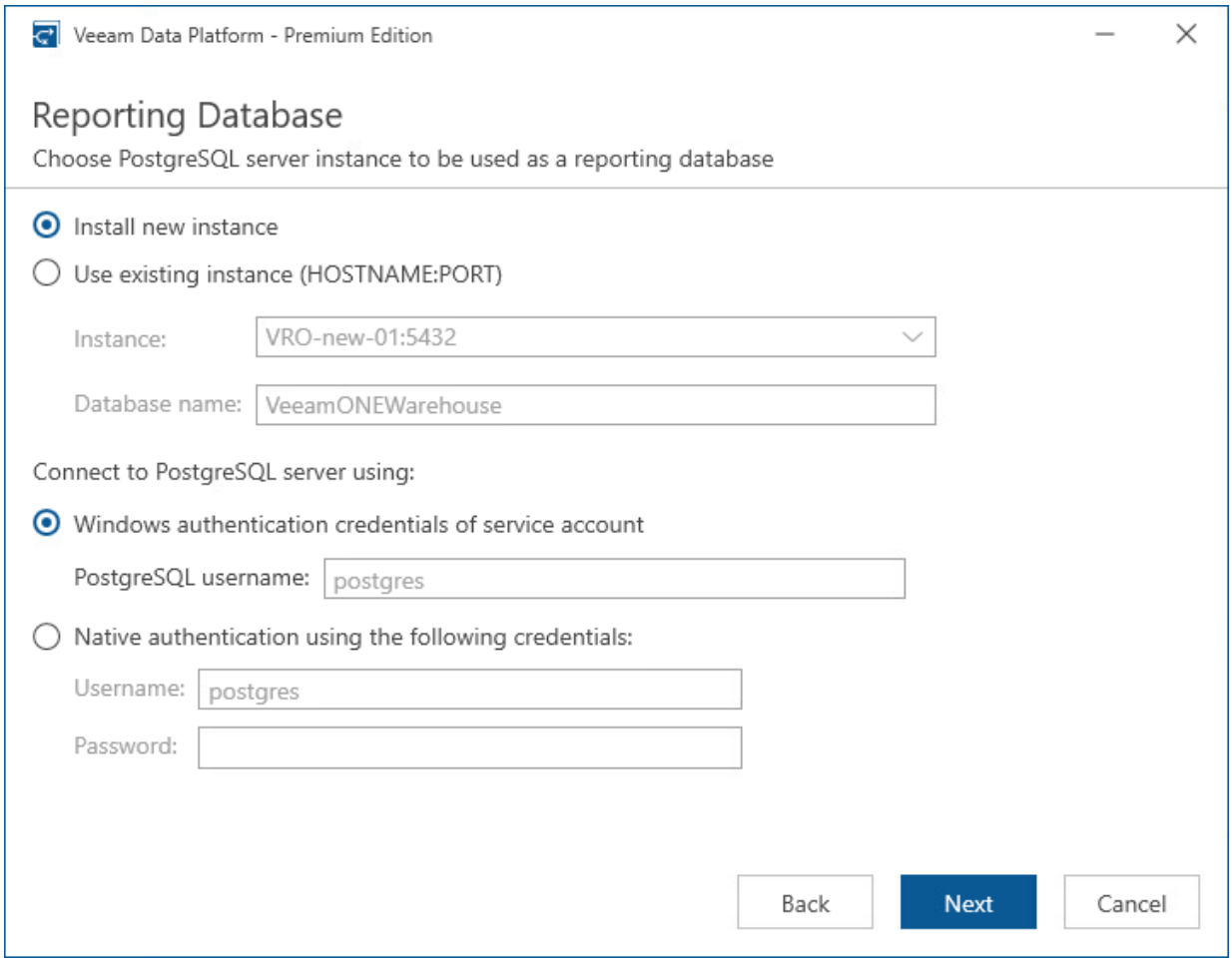
At the **Reporting Database** step of the wizard, choose a PostgreSQL server instance that will host the PostgreSQL reporting database that Veeam ONE will use to store PostgreSQL logs and metrics required to generate reports:

- If on the target machine you do not have a PostgreSQL server instance that you can use for Orchestrator, select the **Install new instance** option. In this case, the setup will install PostgreSQL server locally, on the machine where you are installing Orchestrator.

> **NOTE**
>
> If a PostgreSQL Server instance that meets Orchestrator system requirements is detected on the machine, you can only use the existing local PostgreSQL server instance or choose one that runs remotely. In this case, the option to install a new PostgreSQL instance will be unavailable.

- If you want to use an existing local or remote PostgreSQL server instance, select the **Use existing instance** option and choose a local PostgreSQL server instance.

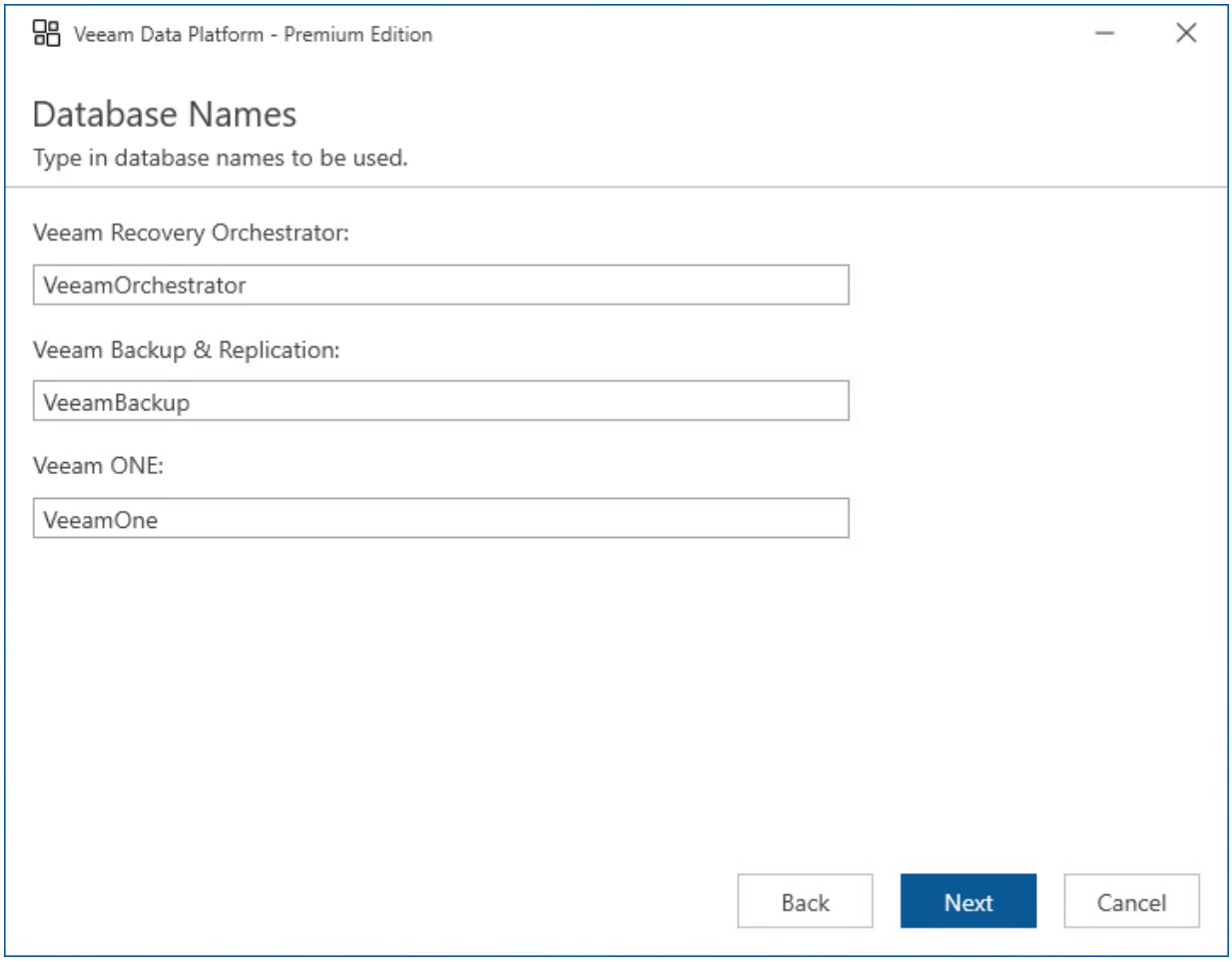
  To connect to the PostgreSQL server instance, you must provide valid credentials for an account that will be used by Orchestrator components to access the PostgreSQL server database. You can either specify credentials explicitly or use Windows authentication credentials. Note that the account must have the *System Administrator* rights on the selected PostgreSQL server instance.



Step 11. Create SQL Server Databases

[This step applies only if you have clicked **Customize Settings** at the **Ready to Install** step of the setup wizard]

At the **Database Names** step of the wizard, enter names for databases that will be used to store data collected from Orchestrator, Veeam Backup & Replication and Veeam ONE.



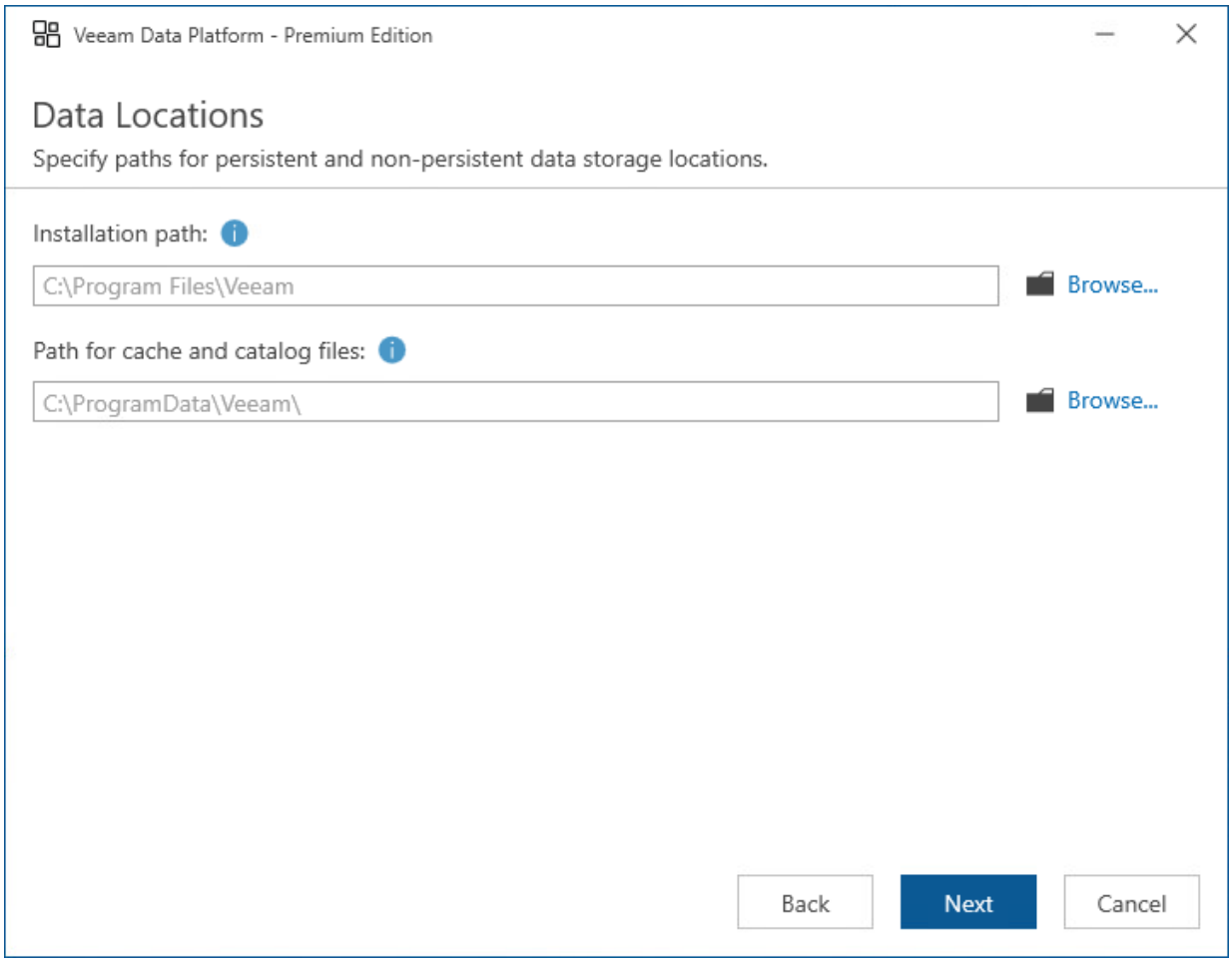
Step 12. Specify Data Locations

[This step applies only if you have clicked **Customize Settings** at the **Ready to Install** step of the setup wizard]

At the **Data Locations** step of the wizard, specify a path to the folder where Orchestrator components will be installed.

You can also specify a path to the folder where Veeam ONE and Veeam Backup & Replication components will store index files and write cache. By design, the setup wizard will automatically create the following subfolders in the specified folder:

- `\VBRCatalog` — the subfolder where Veeam Backup & Replication index files will be stored; the subfolder is created on the volume with the maximum amount of free space.
- `\PerCache` — the subfolder where Veeam ONE write cache will be stored.
- `\Backup\IRCache` — the subfolder where the write cache for machines that are started from backups during recovery verification or restore operations will be stored; make sure that you have at least **10 GB** of free disk space for this subfolder.



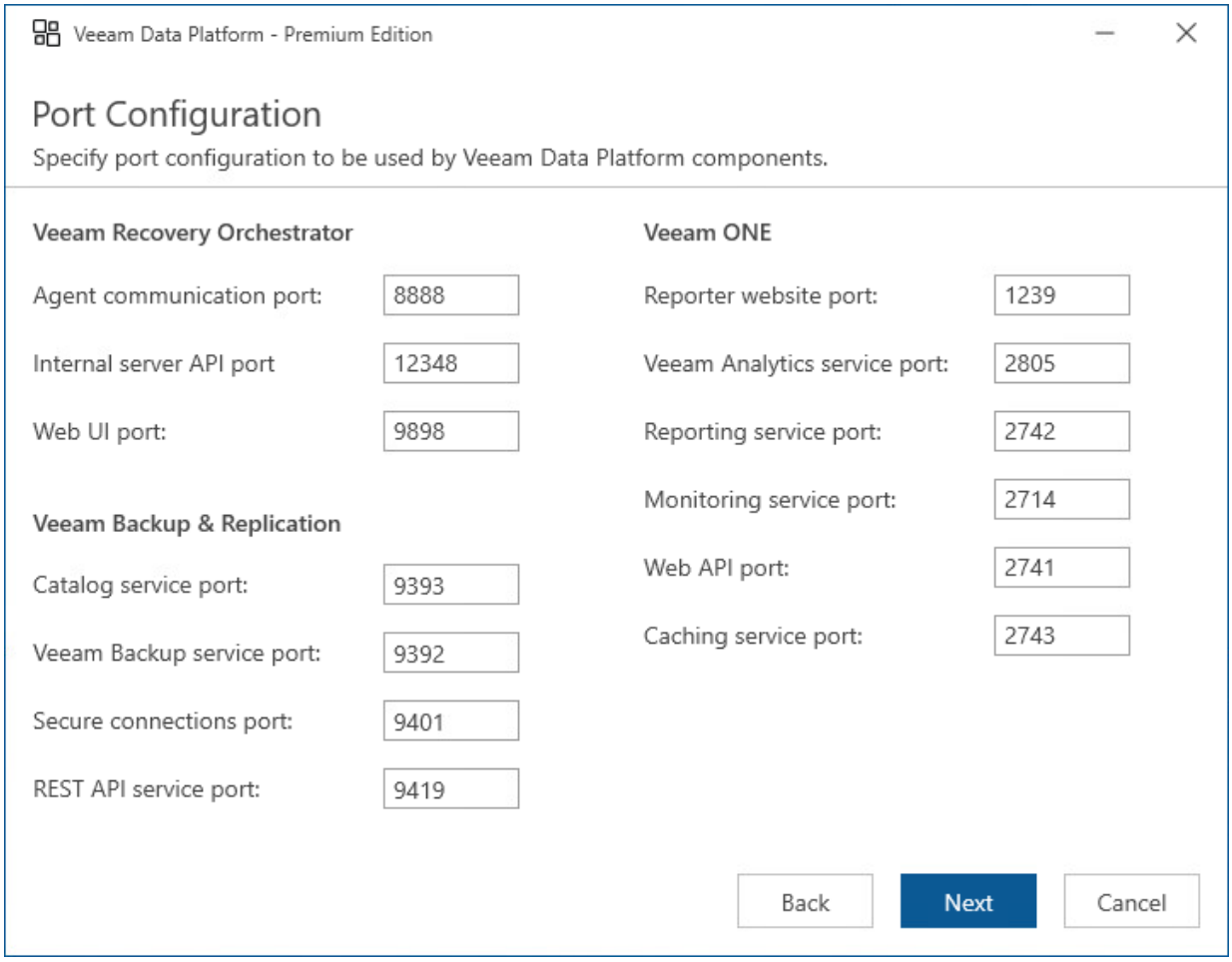
Step 13. Specify Service Ports

[This step applies only if you have clicked **Customize Settings** at the **Ready to Install** step of the setup wizard]

At the **Port Configuration** step of the wizard, customize the following ports:

- **Veeam Recovery Orchestrator** communication ports that will be used for collecting data from connected servers, and for accessing the Orchestrator UI through a web browser.
- **Veeam Backup & Replication** communication ports that will be used for communication between Orchestrator and Veeam Backup & Replication components, and for connecting to the REST API functionality.
- **Veeam ONE** communication ports that will be used for communication between Orchestrator and Veeam ONE components, and for connecting to the REST API functionality.

For the full description of ports used by Orchestrator and their default values, see Ports.



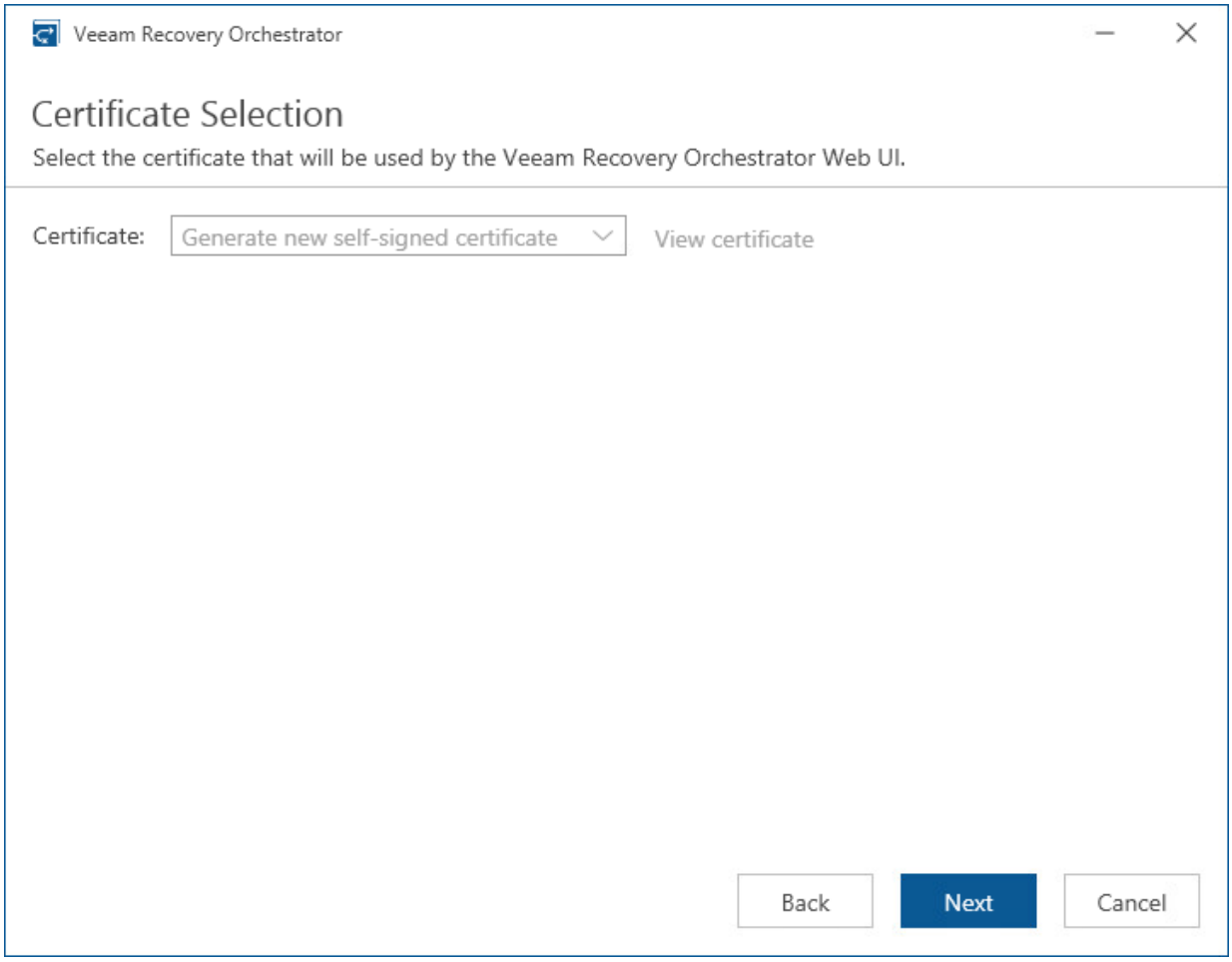
Step 14. Select Certificate for Orchestrator UI

[This step applies only if you have clicked the **Customize Settings** at the **Ready to Install** step of the setup wizard]

At the **Certificate Selection** step of the wizard, choose an SSL certificate that will be used to secure traffic between the Orchestrator UI and a web browser.

You can choose an existing certificate installed on the machine (self-signed or provided by CA) or generate a new self-signed certificate. If you generate or choose a self-signed certificate, you must configure a trusted connection between the Orchestrator UI and a web browser later. For more information, see Configuring Trusted Connection.

> **IMPORTANT**
>
> For an existing certificate to be displayed in the **Certificate** list, the following prerequisites must be met:
>
> - The certificate signature algorithm must be Secure Hash Algorithm 2 (SHA-2) or later.
> - The certificate cryptography algorithm must be RSA with a key of 2048 bits in length or longer.
> - The certificate must contain the Key Encipherment and Data Encipherment key usage.
> - The certificate must be added to the **Trusted Root Certificate Authorities** store for the machine where Orchestrator is installed.
> - The certificate must be added to the **Certificates** > **Personal folder** in the Microsoft Management Console snap-in. To learn how to move SSL certificates, see this Microsoft KB article.

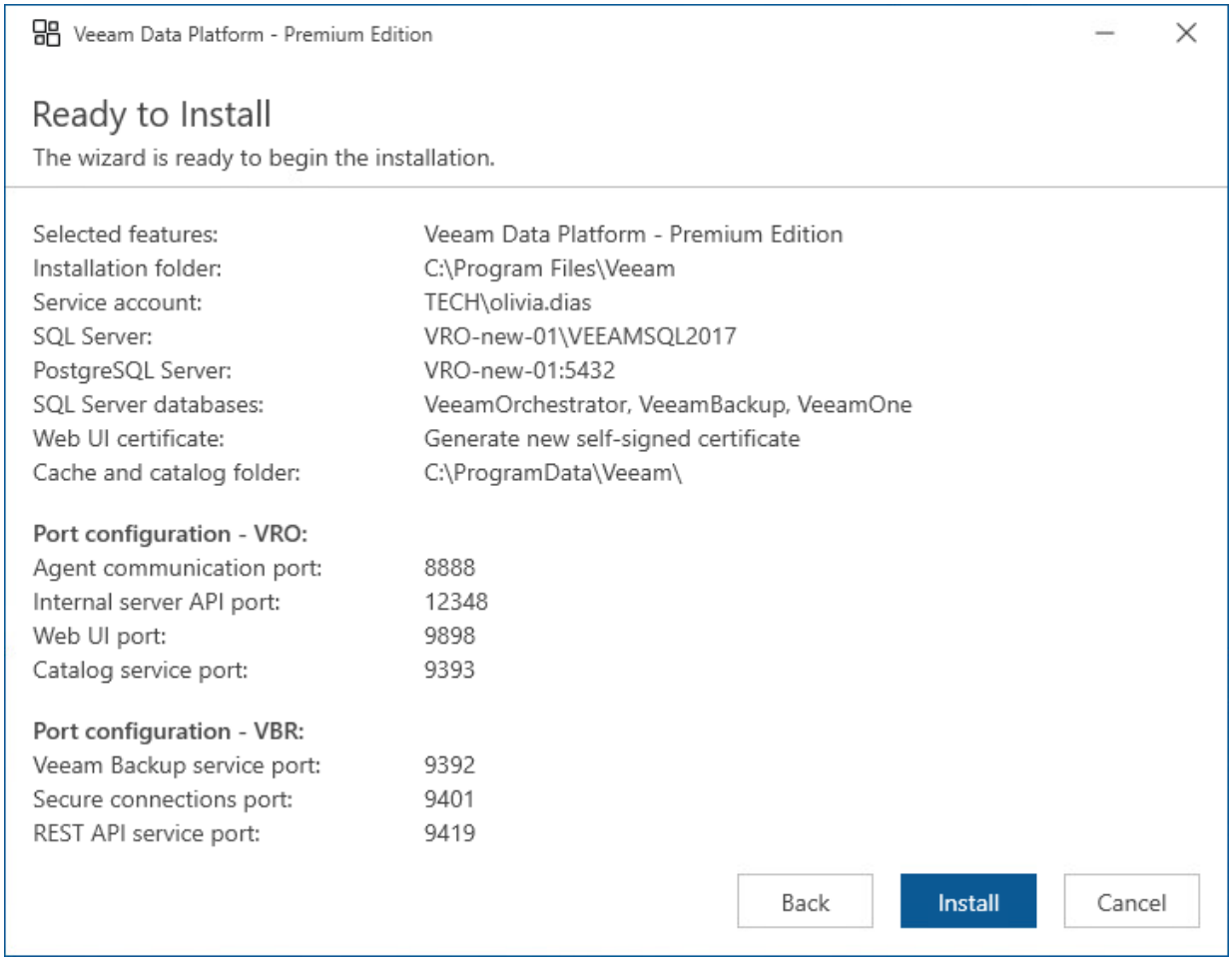


Step 15. Review Advanced Installation Summary

[This step applies only if you have selected the **Customize Settings** check box at the **Ready to Install** step of the setup wizard]

At the **Ready to Install** step of the wizard, review installation configuration and start the installation process:

1. Click **Install** to begin installation.
2. Wait for the installation process to complete and click **Finish** to exit the setup wizard.



Step 16. Upgrade to Veeam Backup & Replication 13

It is essential that you upgrade to version 13 every remote Veeam Backup & Replication server that is connected to Orchestrator. Otherwise, the new functionality in Orchestrator version 13 will not be available. To upgrade Veeam Backup & Replication to version 13, follow the instructions provided in the Veeam Backup & Replication User Guide, section Upgrade and Update, and in this Veeam KB article.

After the upgrade process completes, open the Veeam Backup & Replication console on the Orchestrator server to update Veeam Backup & Replication components installed on all managed servers. To perform the update, follow the steps of the **Components Update** wizard. For more information on updating server components, see the Veeam Backup & Replication User Guide, section Updating Infrastructure Components.

> **TIP**
>
> If you want to use the embedded Veeam Backup & Replication server to run backup and replication jobs along with orchestration, create jobs on that server. Orchestrator will discover backups and replicas produced by these jobs and will use them for recovery plans. To learn how to create jobs using Veeam Backup & Replication, see the Veeam Backup & Replication User Guide, sections Creating Backup Jobs and Creating Replication Jobs.

Installing Veeam Recovery Orchestrator in Silent Mode

You can install Orchestrator in the silent automated mode with a special XML answer file using the command line interface. The silent installation mode does not require user interaction — the installation runs automatically in the background, and you do not have to respond to the installation wizard prompts. You can use the silent installation mode to automate the Orchestrator installation process in large-scale environments.

Before You Begin

Before you start silent installation, consider the following:

- The account used to run the silent installation file must be a member of the local Administrators group on the machine where the silent installation will run. The silent installation cannot be run under a LocalSystem or NetworkService account.
- If the account used to run the unattended installation file is logged on to the machine using the network logon method, the unattended installation will fail. To avoid this, use the additional `/SkipNetworkLogonErrors` command line key.

Installing Veeam Recovery Orchestrator

To install Orchestrator in the silent mode with the answer file, perform the following steps:

1. Copy the `VroAnswerFile_install.xml` file to your local drive.

   You can find the template answer file on the Orchestrator installation disk in the `\Setup\Silent\AnswerFiles\VRO` folder. This folder contains the following templates:

   - `VroAnswerFile_install.xml` — the template for installing Orchestrator
   - `VroAnswerFile_uninstall.xml` — the template for uninstalling Orchestrator
   - `VroAnswerFile_upgrade.xml` — the template for upgrading Orchestrator

2. Configure the installation file parameters. For more information on the parameters that you can configure, see section Silent Installation File Parameters.

3. Make sure that the answer file has the correct bundle (`Vro`) and mode (`install`):

```
<unattendedInstallationConfiguration bundle="Vro" mode="install" version="1.0">
```

4. Start the installation by running the `Veeam.Silent.Install.exe` file located on the Orchestrator installation disk in the `\Setup\Silent` folder. To do that, use the following command line keys in your installation command:

```
D:\Setup\Silent\Veeam.Silent.Install.exe /AnswerFile E:\MyAnswerFileVROInstall.
xml /SkipNetworkLogonErrors
```

   where:

`/AnswerFile` — the required key that specifies the path to your custom answer file, for example: `E:\MyAnswerFileVROInstall.xml`.

`/SkipNetworkLogonErrors` — the optional key that allows you to skip additional pre-installation validations that may block the silent installation from running.

`/LogFolder` — the optional key that specifies the path where log files will be saved. By default, Orchestrator uses the `C:\ProgramData\Veeam\Setup\Temp` folder.

Silent Installation File Parameters

The following command-line options are used to run the silent installation file:

Option	Parameter	Required	Description
ACCEPT_EULA	0/1	Yes	Specifies if you want to accept the Veeam license agreement. To accept the license agreement and to proceed with installation, set the parameter value to *1*. Example: `ACCEPT_EULA="1"`
ACCEPT_THIRDPARTY_LICENSES	0/1	Yes	Specifies if you want to accept the license agreement for 3rd party components that Veeam incorporates. To accept the license agreement and to proceed with installation, set the parameter value to *1*. **Example:** `ACCEPT_THIRDPARTY_LICENSES="1"`
ACCEPT_LICENSING_POLICY	0/1	Yes	Specifies if you want to accept the Veeam licensing policy. To accept the licensing policy and to proceed with installation, set the parameter value to *1*. Example: `ACCEPT_LICENSING_POLICY="1"`
ACCEPT_REQUIRED_SOFTWARE	0/1	Yes	Specifies if you want to accept the license agreements for each of the required software that Veeam will install. To accept the license agreement and to proceed with installation, set the parameter value to *1*. Example: `ACCEPT_REQUIRED_SOFTWARE="1"`
VRO_LICENSE_FILE	path	Yes	Specifies a full path to the license file. You will not be able to perform installation without providing a license. **Example:** `VRO_LICENSE_FILE="C:\Users\Administrator\Downloads\vro_nfr.lic"`

Option	Parameter	Required	Description
VRO_LICENSE_AUTOUPDATE	0/1	No	Specifies if the license is updated automatically. If you do not specify this parameter, automaticlicense update will be enabled by default. For the *Community Edition*, *NFR* and *Evaluation* licenses, set the parameter value to *1*. For licenses without the license ID information, the parameter value to *0*. Example: `VRO_LICENSE_AUTOUPDATE="1"`
VRO_PROACTIVE_SUPPORT	0/1	No	Specifies if you want to receive proactive support and to enable diagnostic data sharing. If you do not specify this parameter, proactive support will be enabled by default. For the *Community Edition*, *NFR* and *Evaluation* licenses, set the parameter value to *1*. For licenses without the license ID information, the parameter value to *0*. Example: `VRO_PROACTIVE_SUPPORT="1"`
VRO_SERVICE_USER	user	Yes	Specifies an account under which the Veeam Orchestrator Server Service will run. For more information on the required account permissions, see Planning and Preparation. Along with this parameter, you must define the **VRO_SERVICE_PASSWORD** parameter. **Example:** `VRO_SERVICE_USER="srv\Administrator"`
VRO_SERVICE_PASSWORD	password	Yes	Specifies a password for the account under which the Veeam Orchestrator Server Service will run. **Example:** `VRO_SERVICE_PASSWORD="1234"`
VRO_SQLSERVER_INSTALL	0/1	Yes	Specifies if an existing Microsoft SQL Server instance will be used to host the Orchestrator database or a new Microsoft SQL Server instance will be created locally. To create a new Microsoft SQL Server instance, set the parameter value to *1*. If you want to use the existing Microsoft SQL Server instance, set this parameter to *0* and define the following parameters for the existing database: **VRO_SQLSERVER_SERVER** and **VRO_SQLSERVER_DATABASE**. **Example:** `VRO_SQLSERVER_INSTALL="1"`

Option	Parameter	Required	Description
VRO_SQLSERVER_SERVER	SQL Server\instance	No	Specifies a Microsoft SQL Server instance where the Orchestrator configuration database will be deployed. By default, *(local)\VEEAMSQL2017*. **Example**: `VRO_SQLSERVER_SERVER="localhost\VEEAMSQL2017"`
VRO_SQLSERVER_DATABASE	database	No	Specifies a name of the Orchestrator configuration database to be deployed. By default, *VeeamOrchestrator*. **Example**: `VRO_SQLSERVER_DATABASE="OrchestratorDB"`
VBR_SQLSERVER_DATABASE	database	No	Specifies a name of the Veeam Backup & Replication configuration database. By default, *VeeamBackup*. Keep in mind that both the Veeam ONE configuration database and the Orchestrator database must be hosted on the same Microsoft SQL Server instance. **Example**: `VBR_SQLSERVER_DATABASE="VBR"`
VO_SQLSERVER_DATABASE	database	No	Specifies a name of the Veeam ONE configuration database. Keep in mind that both the Veeam ONE configuration database and the Orchestrator database must be hosted on the same Microsoft SQL Server instance. **Example**: `VO_SQLSERVER_DATABASE="VeeamOne"`
VRO_SQLSERVER_AUTHENTICATION	0/1	No	Specifies if you want to use the SQL Server authentication mode to connect to the Microsoft SQL Server where the Orchestrator configuration database is deployed. To use the SQL Server authentication mode, set the parameter value to *1*. If you do not define this parameter, Orchestrator will connect to the Microsoft SQL Server in the Microsoft Windows authentication mode (default value, *0*). Along with this parameter, you must define the following parameters: **VRO_SQLSERVER_USERNAME** and **VRO_SQL_PASSWORD**. **Example**: `VRO_SQLSERVER_AUTHENTICATION="1"`

Option	Parameter	Required	Description
VRO_SQLSERVER_USERNAME	user	No	[Applies only if you have defined the **VRO_SQLSERVER_AUTHENTICATION** parameter] Specifies a LoginID to connect to the Microsoft SQL Server in the SQL Server authentication mode. **Example:** `VRO_SQLSERVER_USERNAME="sa"`
VRO_SQLSERVER_PASSWORD	password	No	[Applies only if you have defined the **VRO_SQLSERVER_AUTHENTICATION** parameter]. Specifies a password to connect to the Microsoft SQL Server in the SQL Server authentication mode. **Example:** `VRO_SQLSERVER_PASSWORD="1234"`
VBR_ENTRAID_DATABASE_INSTALL	0/1	No	Specifies if a PostgreSQL Server for the Microsoft Entra ID database will be installed. To install the PostgreSQL Server for the Microsoft Entra ID, set the parameter value to 1. If you do not define this parameter, the PostgreSQL Server will not be installed (default value, *0*).
VO_POSTGRESQL_INSTALL	0/1	Yes	Specifies if a new PostgreSQL server used for the Veeam ONE reporting database will be installed. To install a new PostgreSQL database, set the parameter to *1*. If you want to use the existing PostgreSQL database, set this parameter to *0* and define the following parameters for the existing database: **VO_POSTGRESQL_SERVER** and **VO_POSTGRESQL_DATABASE**. **Example:** `VRO_POSTGRESQL_INSTALL="1"`
VO_POSTGRESQL_SERVER	PostgreSQL Server:instance	No	Specifies a PostgreSQL Server instance where the Veeam ONE reporting database will be deployed. By default, *(local):5432*. **Example:** `VO_POSTGRESQL_SERVER="localhost:5432"`
VO_POSTGRESQL_DATABASE	database	No	Specifies a name of the Veeam ONE reporting database. By default, *VeeamOneWarehouse*. Keep in mind that both the Veeam ONE reporting database and the Orchestrator database must be hosted on the same machine. **Example:** `VO_POSTGRESQL_DATABASE="VeeamOne"`

Option	Parameter	Required	Description
VO_POSTGRESQL_AUTHENTICATION	0/1	No	Specifies if you want to use the PostgreSQL Server authentication mode to connect to the PostgreSQL Server where the Veeam ONE reporting database is deployed. To use the PostgreSQL authentication mode, set the parameter value to *1*. If you do not define this parameter, Orchestrator will connect to the PostgreSQL Server in the Microsoft Windows authentication mode (default value, *0*). Along with this parameter, you must define the following parameters: **VO_POSTGRESQL_USERNAME** and **VO_POSTGRESQL_PASSWORD**. **Example:** `VO_POSTGRESQL_AUTHENTICATION="1"`
VO_POSTGRESQL_USERNAME	user	No	[Applies only if you have defined the **VO_POSTGRESQL_AUTHENTICATION** parameter] Specifies a LoginID to connect to the PostreSQL Server in the PostreSQL Server authentication mode. **Example:** `VO_POSTGRESQL_USERNAME="postgre"`
VO_POSTGRESQL_PASSWORD	password	No	[Applies only if you have defined the **VO_POSTGRESQL_AUTHENTICATION** parameter]. Specifies a password to connect to the PostreSQL Server in the PostreSQL authentication mode. **Example:** `VO_POSTGRESQL_PASSWORD="1234"`
VRO_SERVICE_PORT	port	No	Specifies a TCP port that will be used by the Veeam Orchestrator Server Service to connect to Orchestrator agents running on remote Veeam Backup & Replication servers. By default, *8888*. **Example:** `VRO_SERVICE_PORT="8884"`
VRO_SERVICE_WCF_PORT	port	No	Specifies a WCF port that will be used to connect to the Veeam Orchestrator Server Service. By default, *12348*. **Example:** `VRO_SERVICE_WCF_PORT="12247"`
VRO_WEB_SITE_PORT	port	No	Specifies an IIS port that will be used to connect to the Orchestrator UI website from a web browser. By default, *9898*. **Example:** `VRO_WEB_SITE_PORT="9998"`

Option	Parameter	Required	Description
VO_MONITORING_SERVICE_PORT	port	No	Specifies a port that will be used to communicate with the Veeam ONE Monitoring service. By default, *2714*. **Example:** `VO_MONITORING_SERVICE_PORT="2715"`
VO_CACHING_SERVICE_PORT	port	No	Specifies a port that will be used to communicate with Veeam ONE Caching service. By default, *2743*. **Example:** `VO_CACHING_SERVICE_PORT="2743"`
VO_REPORTING_SERVICE_PORT	port	No	Specifies a port that will be used to communicate with Veeam ONE Reporting service. By default, *2742*. **Example:** `VO_REPORTING_SERVICE_PORT="2745"`
VO_INTERNAL_WEB_API_PORT	port	No	Specifies a port that will be used by Veeam ONE Monitoring service and Veeam ONE Web Services to communicate with Veeam ONE Reporting service. By default, *2741*. **Example:** `VO_INTERNAL_WEB_API_PORT="2747"`
VO_WEBSITE_PORT	port	No	Specifies an IIS port that will be used to connect to the Veeam ONE Web Client from a web browser. By default, *1239*. **Example:** `VO_WEBSITE_PORT="1234"`
VO_AGENT_SERVICE_PORT	port	No	Specifies a port that will be used by Veeam Analytics service to collect data from the connected Veeam Backup & Replication servers. By default, *2805*. **Example:** `VO_AGENT_SERVICE_PORT="2808"`
VBRC_SERVICE_PORT	port	No	Specifies a TCP port that will be used by the Veeam Guest Catalog Service. By default, *9393*. **Example:** `VBRC_SERVICE_PORT="9394"`
VBR_SERVICE_PORT	port	No	Specifies a TCP port that will be used by the Veeam Backup Service. By default, *9392*. **Example:** `VBR_SERVICE_PORT="9395"`
VBR_SECURE_CONNECTIONS_PORT	port	No	Specifies a TCP port that will be used for communication between the mount server and the backup server. By default, *9401*. **Example:** `VBR_SECURE_CONNECTIONS_PORT="9402"`

Option	Parameter	Required	Description
VBR_RESTSERVICE_PORT	port	No	Specifies an HTTPS port that will be used to connect to the Orchestrator REST API website from a web browser. By default, *9419*. **Example:** `VBR_RESTSERVICE_PORT=”9999”`
VRO_CERTIFICATE_THUMBPRINT	thumbprint	No	Provides a thumbprint of an SSL certificate that will be used to secure traffic between the Orchestrator UI and a web browser. **Example:** `VRO_CERTIFICATE_THUMBPRINT="a909502dd82ae41433e6f83886b00d4277a32a7b"`
INSTALLDIR	path	No	Installs the component to the specified location. By default, Orchestrator uses a subfolder in the `C:\Program Files\Veeam\Orchestrator\` folder. **Example:** `INSTALLDIR=”C:\Veeam\”`
REBOOT_IF_REQUIRED	0/1	No	Specifies if the machine where you are installing Orchestrator will be rebooted after the installation process completes. To reboot the machine, set the parameter to *1*. If you do not specify this parameter, the machine will be rebooted automatically. **Example:** `REBOOT_IF_REQUIRED="1"`
LOGOFF_IF_REQUIRED	0/1	No	Specifies if the session is logged off after the installation process completes. To log off the session, set the parameter to *1*. If you do not specify this parameter, the session will not be logged off automatically. **Example:** `LOGOFF_IF_REQUIRED="1"`

Accessing Orchestrator UI

IMPORTANT

Before you access the Orchestrator UI, make sure that TLS 1.2 is enabled both on the Orchestrator server and on the machine that you plan to use to access the UI.

To access the Orchestrator UI, perform the following steps:

1. In a web browser, navigate to the Orchestrator UI web address. The address consists of an FQDN of the Orchestrator server and the website port specified during installation (by default, **9898**). Note that the Orchestrator UI is available over HTTPS only.

   `https://<FQDN>:<port>`

   Keep in mind that Internet Explorer is no longer supported. To access the Orchestrator UI, use Microsoft Edge, Google Chrome or Mozilla Firefox.

2. If you log in for the first time, specify credentials of the local Administrator who performed Orchestrator installation. The user name must be specified in the *DOMAIN|USERNAME* or *USERNAME* format.

   To authenticate using the credentials provided when logging into the system, click **Log in as current user**.

TIP

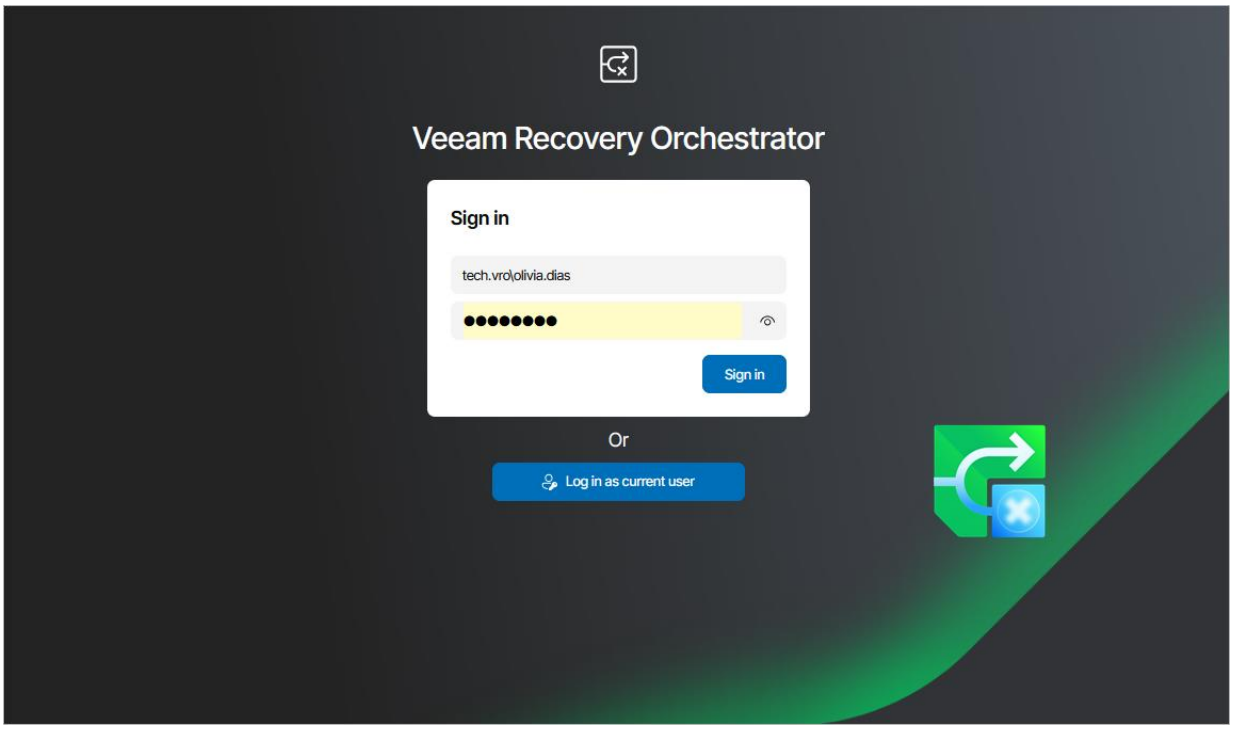
To be able to log in as the current user, you must first do the following:

1. Complete the Initial Configuration Wizard as described in section After You Install.
2. Enable the **Automatic logon with current user name and password** option in the security setting of your browser.

In future, you can configure users and roles to grant access to the Orchestrator UI. For more information, see the Veeam Recovery Orchestrator Operations Guide, section Managing User Accounts.

3. Click **Log in**.

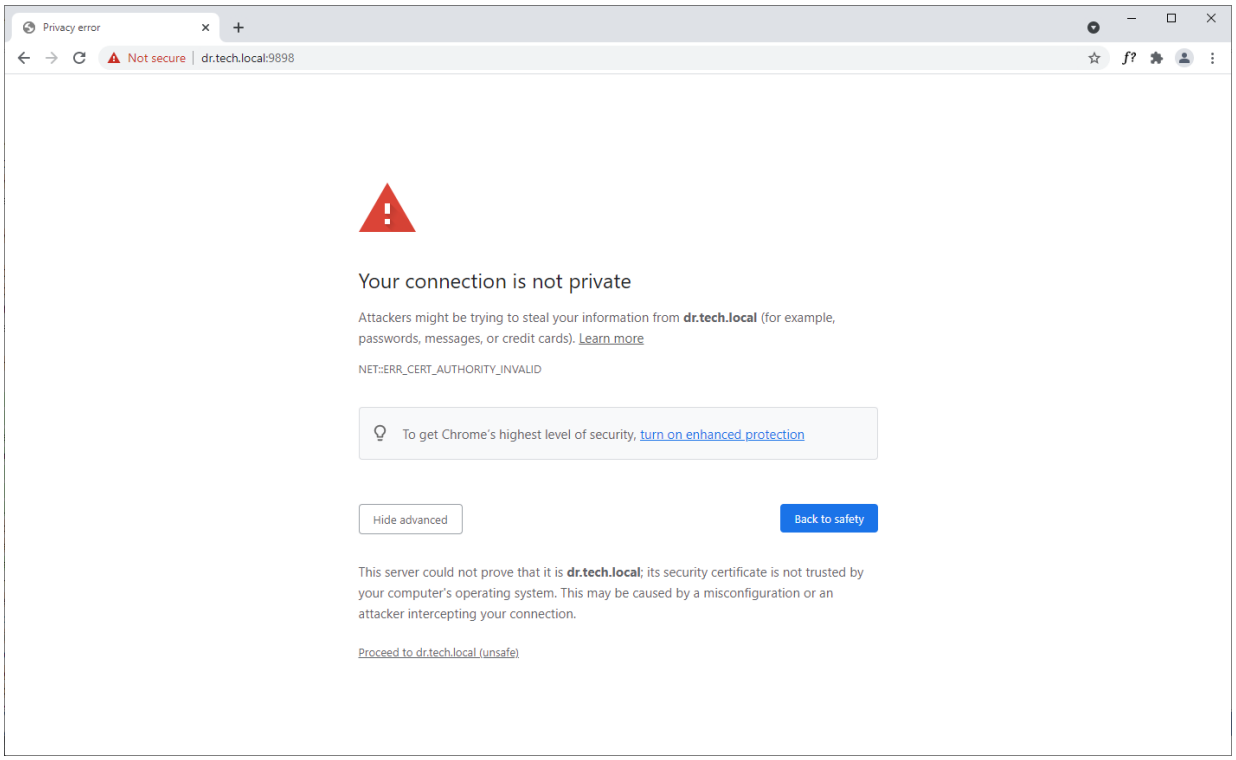
   If the Veeam Recovery Orchestrator Operations Guide, section Enabling and Disabling Multi-Factor Authentication, Orchestrator will prompt you to enter a code to verify the user identity. In the code field, enter the temporary six-digit code generated by the authentication application running on your trusted device. Then, click **Confirm**.



Configuring Trusted Connection

The Orchestrator UI uses SSL to ensure secure data communication between Orchestrator and a web browser.

When you install Orchestrator, you can generate or choose a self-signed certificate. In this case, when you try to access the Orchestrator UI in a web browser, the browser will display a warning notifying that the connection is untrusted (although it is secured with SSL).



To eliminate the warning, import the self-signed certificate to client machines (the machines from which you plan to access the Orchestrator UI website). To learn how to import SSL certificates, see this Microsoft KB article.

If you want to use the certificate generated during installation, perform the following steps:

1. Log in to the machine where Orchestrator is installed.
2. Open the Microsoft Management Console snap-in.
   a. Navigate to **Certificates** > **Trusted Root Certification Authorities** > **Certificates**.
   b. Export the *Veeam Self-Signed Certificate* following the instructions provided in this Microsoft KB article.
3. Import the *Veeam Self-Signed Certificate* to client machines.

> **TIP**
>
> If you still have issues accessing the Orchestrator UI, check your browser settings to ensure that the Orchestrator UI site is included in the **Trusted Sites** list.

Logging Out

To log out of the Orchestrator UI, at the top right corner of the Veeam Recovery Orchestrator window, click the user name and then click **Logout**.

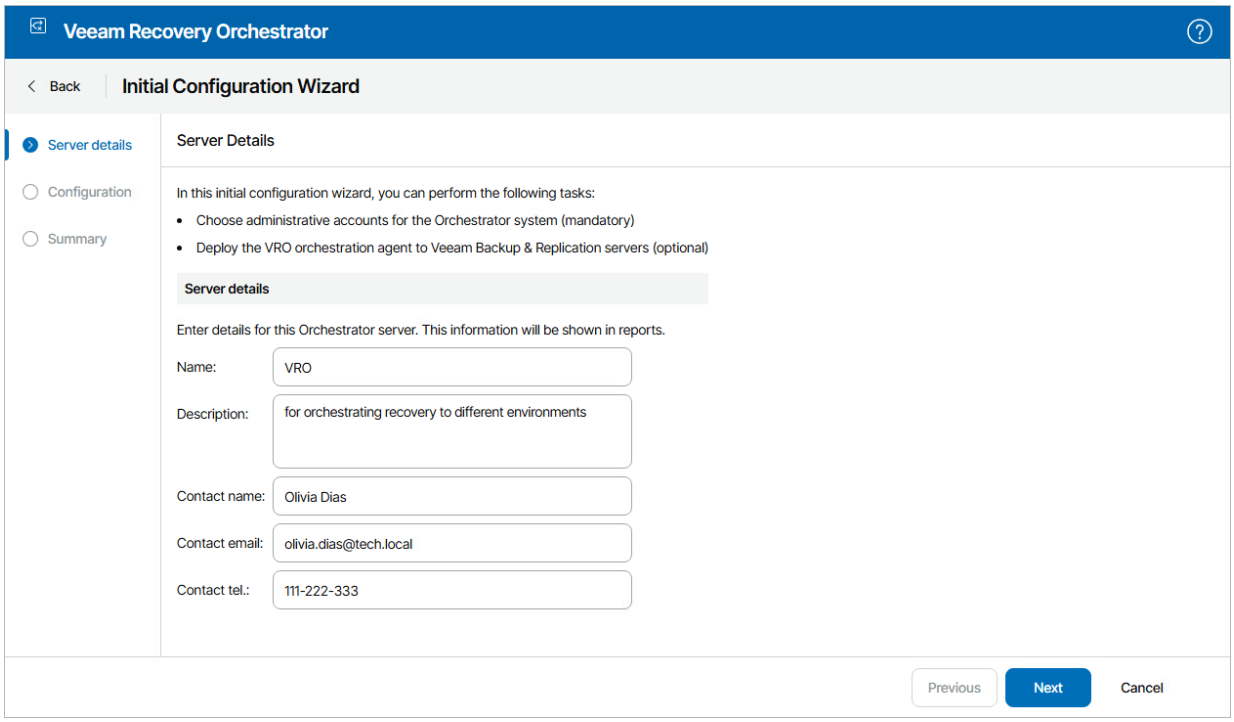
After You Install

To start working with the Orchestrator UI, you must perform the initial configuration of the Orchestrator server.

Step 1. Launch Initial Configuration Wizard

At the **Server Settings** step of the wizard, specify an arbitrary name for the Orchestrator server and provide a description for future reference. To do that, click **Edit**. The maximum length of the server name is 128 characters; the following characters are not supported: * : / \ ? " < > | .

You can also provide a contact name, email and telephone number of a person or a group responsible for Orchestrator.



Step 2. Configure Server Settings

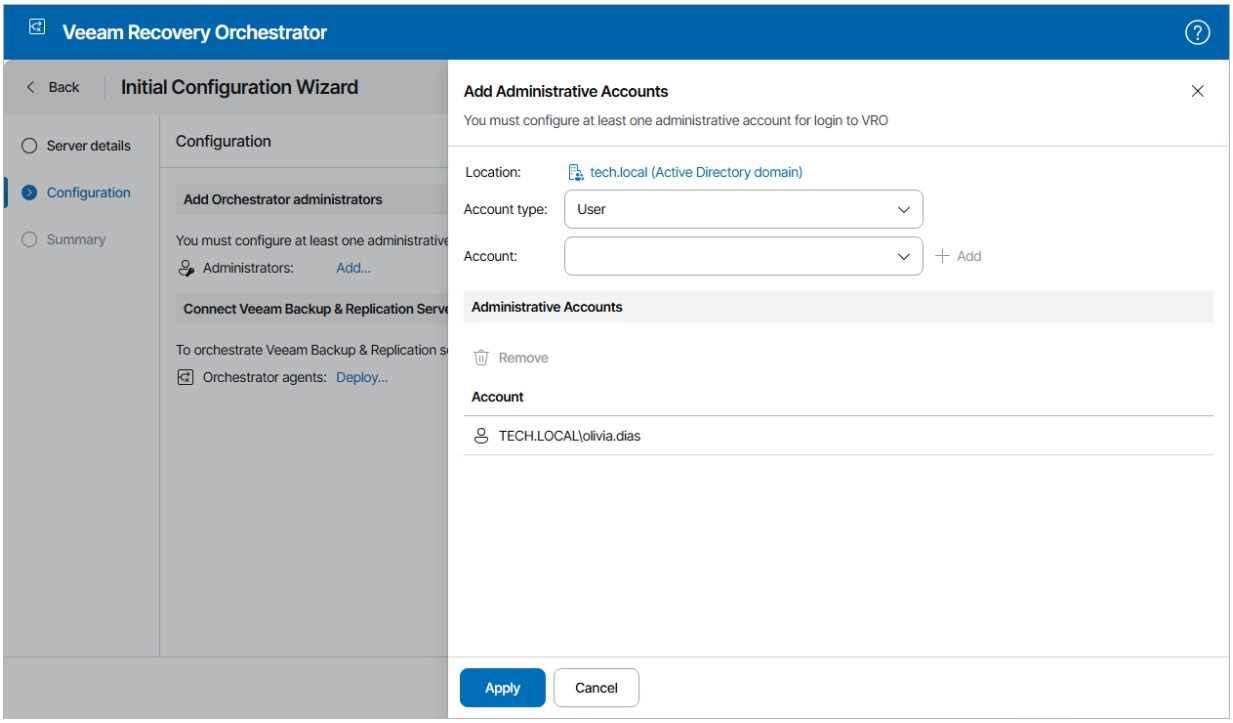
At the **Configuration** step of the wizard, specify the Administrator account credentials and connect remote Veeam Backup & Replication servers.

Step 2a. Specify Administrator Account Credentials

In the **Add Orchestrator administrators** section of the **Configuration** step of the wizard, add users or groups of users that will be assigned the *Administrator* role for the server:

1. In the **Administrators** field, click **Add**.
2. In the **Add Administrative Accounts** window, do the following:
   a. From the **Account type** list, select *User* or *Group*.
   b. Use the **Account** and **Location** fields to enter the user or group name and to select the location to which the user or group belongs – either a domain or local OS workgroup.

      For more information on the required account permissions, see Permissions.
   c. Click **Add**.
   d. Repeat the procedure for each user that must become an Orchestrator Administrator and click **Apply**.



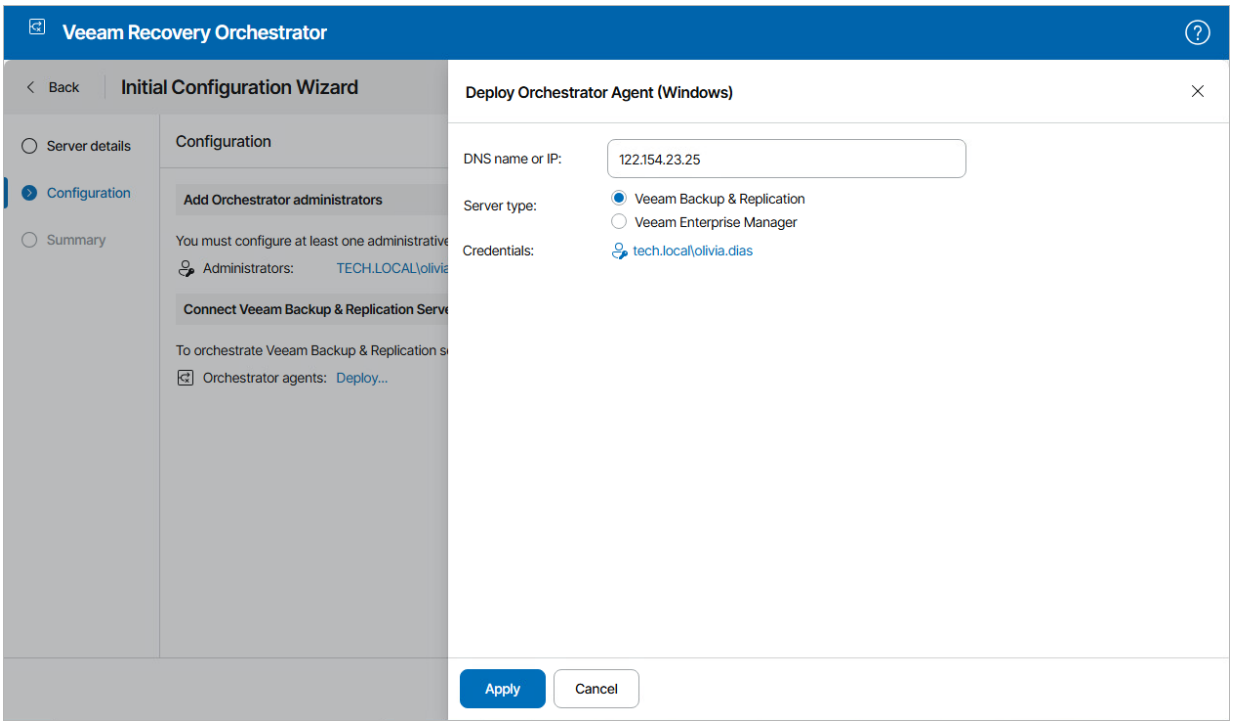
Step 2b. Enter Server Details

As the embedded Veeam Backup & Replication server is automatically registered in the Orchestrator UI during installation, you will not need to connect it manually.

If you want to connect a remote Veeam Backup & Replication server, use the **Infrastructure** > **Deploy Orchestrator agent** section. Alternatively, skip it and later follow the instructions provided in the Veeam Recovery Orchestrator Operations Guide, section Connecting Veeam Backup & Replication Servers.

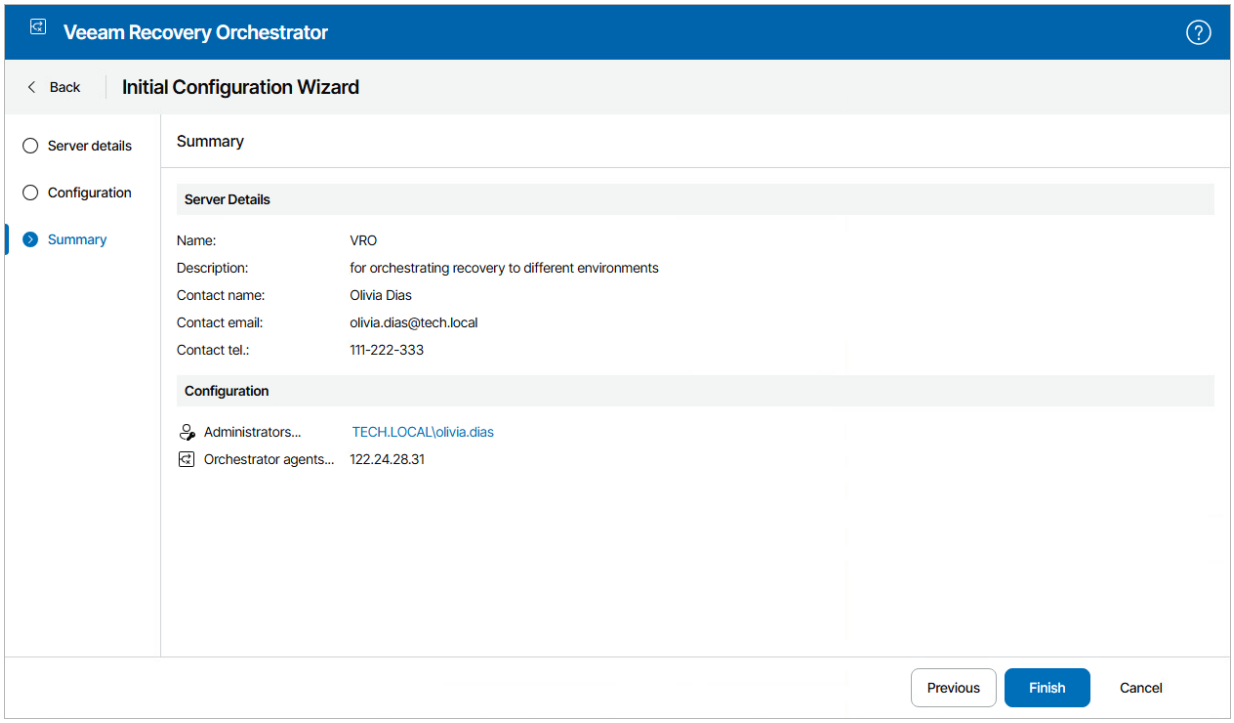
To register remote Veeam Backup & Replication servers using the **Connect Veeam Backup & Replication Servers** section of the **Configuration** step of the wizard:

1. In the **Orchestrator agents** field, click **Deploy**.
2. In the **Deploy Orchestrator Agent** window, click **Deploy Agent** and choose whether you want to deploy a Windows or Linux-based Orchestrator agent.
3. Specify whether the server is a Veeam Backup & Replication or Veeam Backup Enterprise Manager server and enter its DNS name or IPv4 address.
4. Click the **Add** link in the **Credentials** field and do the following in the **Credentials** window:
   a. Use the **User** and **Password** fields to specify credentials of a user account for connecting to the Veeam Backup & Replication server. The provided credentials will be also used to run the Orchestrator agent on the server.
   b. Click **Add**.
   c. Repeat the procedure for each user that will be used to connect connecting to the Veeam Backup & Replication server and click **Apply**.



Step 3. Review Configuration Summary

At the **Summary** step of the wizard, review configuration information and click **Finish**.



Upgrading Veeam Disaster Recovery Orchestrator

Upgrade to Orchestrator version 13 is supported from Orchestrator version 7.2.1 only; upgrade from Orchestrator versions 7.2, 7.1, 7, 6 and 5 to version 13 is not supported:

- To learn how to manually upgrade from Orchestrator version 7.2 to 7.2.1, see Veeam Recovery Orchestrator 7.2 User Guide.
- To learn how to manually upgrade from Orchestrator version 7.1 to 7.2, see Veeam Recovery Orchestrator 7.2 User Guide.
- To learn how to manually upgrade from Orchestrator version 7 to 7.1 and from Orchestrator version 6 to 7, see Veeam Recovery Orchestrator 7 User Guide.
- To learn how to manually upgrade from Orchestrator version 5 to 6, see the Veeam Disaster Recovery Orchestrator 6 User Guide.

Upgrade Checklist

Check the following prerequisites before upgrading Orchestrator:

1. Perform backup of all existing databases that are used to store data collected from Orchestrator, Veeam Backup & Replication and Veeam ONE, and create a snapshot of the Orchestrator server — so that you can easily go back to the previous version in case of upgrade issues.
2. Make sure there is enough space for upgrade of the Microsoft SQL Server configuration database. To calculate the required space, add at least 25% of free space to the size of the Microsoft SQL Server configuration database.

   By default, the setup wizard installs Orchestrator with Microsoft SQL Server Express. Note that the maximum configuration database size for Microsoft SQL Server Express is 10 GB.
3. Make sure there are no recovery plans being tested or executed (that is, no plans are in the *IN-USE* mode, *HALTED* state or any of the active states).

   For the list of modes and states that different types of recovery plans can acquire, see the Veeam Recovery Orchestrator Operations Guide, sections Replica Plans, CDP Replica Plans, Restore Plans, Storage Plans and Cloud Plans.
4. Make sure there are no recovery plans scheduled to run during upgrade. Otherwise, disable the configured schedule as described in the Veeam Recovery Orchestrator Operations Guide, sections Scheduling Failover, Scheduling CDP Failover, Scheduling Restore, Scheduling Storage Failover and Scheduling Cloud Restore.
5. Make sure all active Orchestrator UI sessions are closed.

Performing Upgrade

To upgrade to Orchestrator version 13, perform the following steps:

1. Make sure the machine where Orchestrator will be installed meets the prerequisite conditions described in section System Requirements.

2. Download the latest version of the product installation image from the Veeam downloads page. You can burn the downloaded image file to a CD/DVD or mount the installation image to the target machine using disk image emulation software.
3. Launch the splash window.
4. Start the setup wizard.
5. Accept the license agreement.
6. Review components to upgrade.
7. Provide a license file.
8. Perform system configuration check.
9. Specify service account credentials.
10. Review SQL server connection settings.
11. Choose a PostgreSQL server.
12. Review configuration issues.
13. Specify the Veeam ONE caching port.
14. Review installation summary.
15. Begin upgrade.
16. Upgrade remote Veeam Backup & Replication servers to version 13.

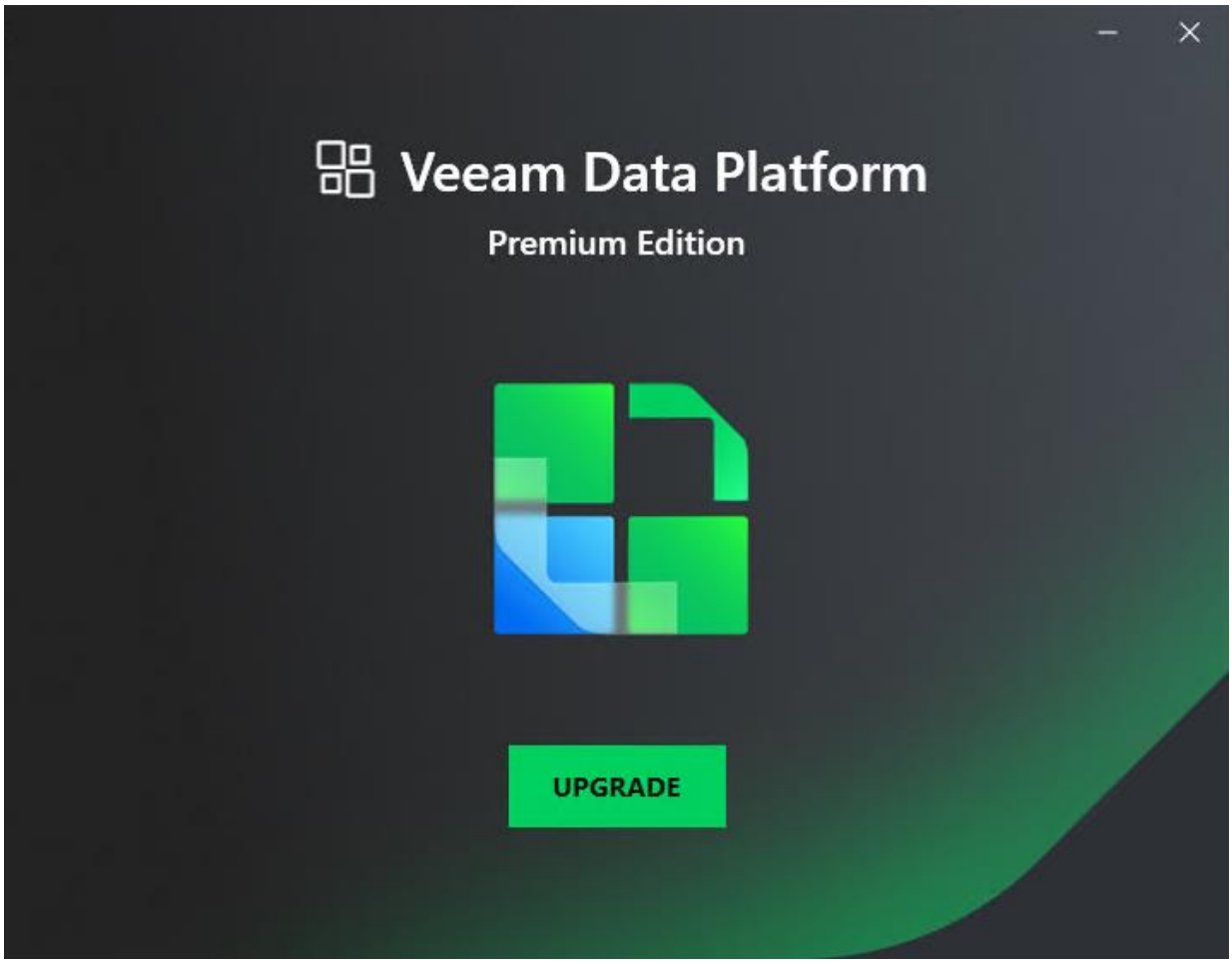
IMPORTANT

The embedded Veeam Backup & Replication and Veeam ONE servers are upgraded automatically, as part of the Orchestrator server upgrade process. DO NOT try to upgrade the embedded servers manually, by using the installation images of remote Veeam Backup & Replication and Veeam ONE solutions. Otherwise, the correct operation of the Orchestrator server cannot be guaranteed.

Step 1. Launch Splash Window and Start Setup Wizard

To launch the splash window, perform the following steps:

1. Log in to the machine where the Veeam Orchestrator Server Service component is installed. Use an account with the local Administrator rights.
2. Insert the installation disc into the CD/DVD drive or mount the installation image. The setup will open a splash screen.
3. Click **Upgrade**.



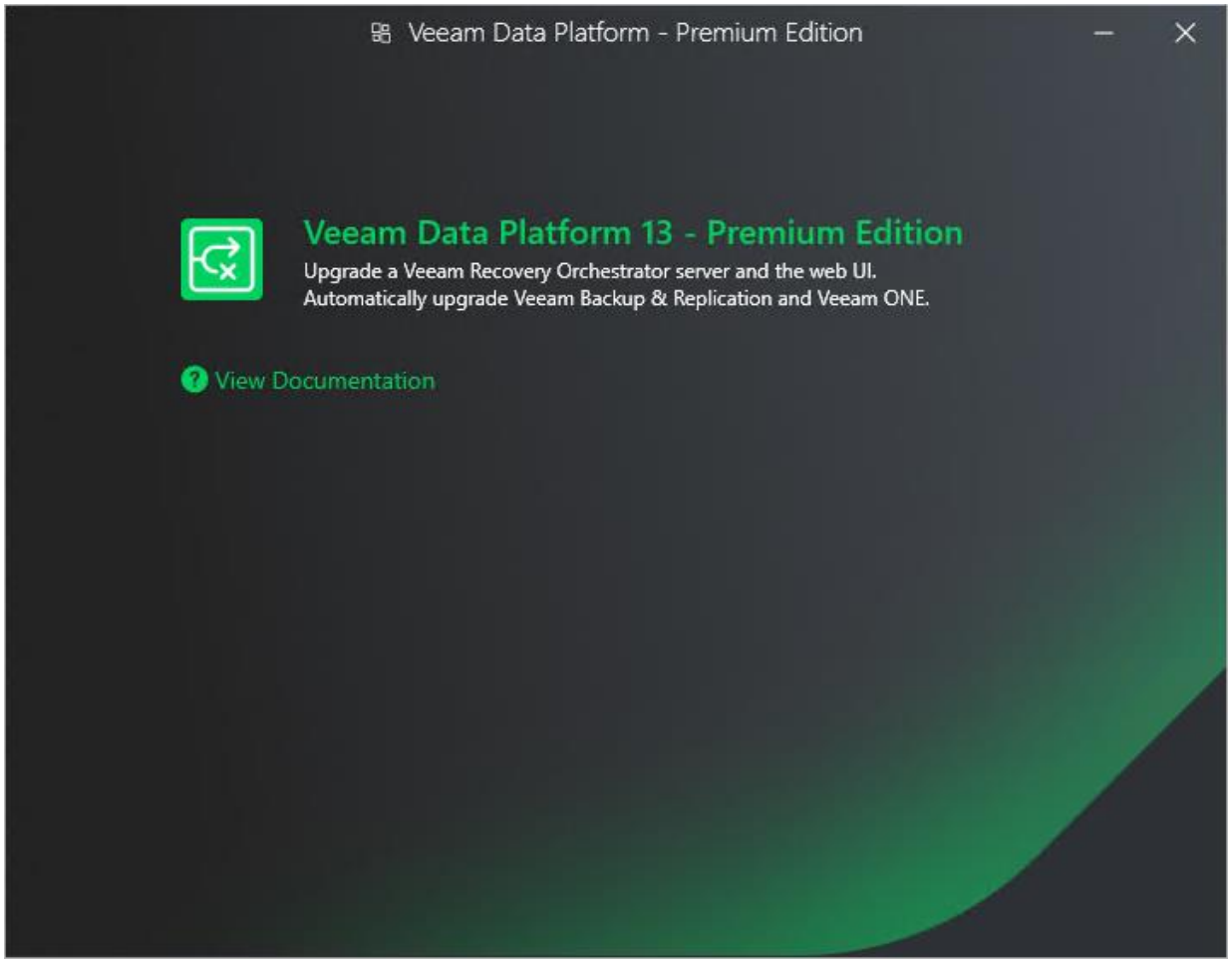
NOTE

Before proceeding with installation, the installer will check whether you have all the necessary components installed on the machine. In case the required version is missing, the installer will offer to install it automatically. To do that, click **OK**.

Installation will require performing a reboot. Click **Reboot** in the warning message to acknowledge the reboot.

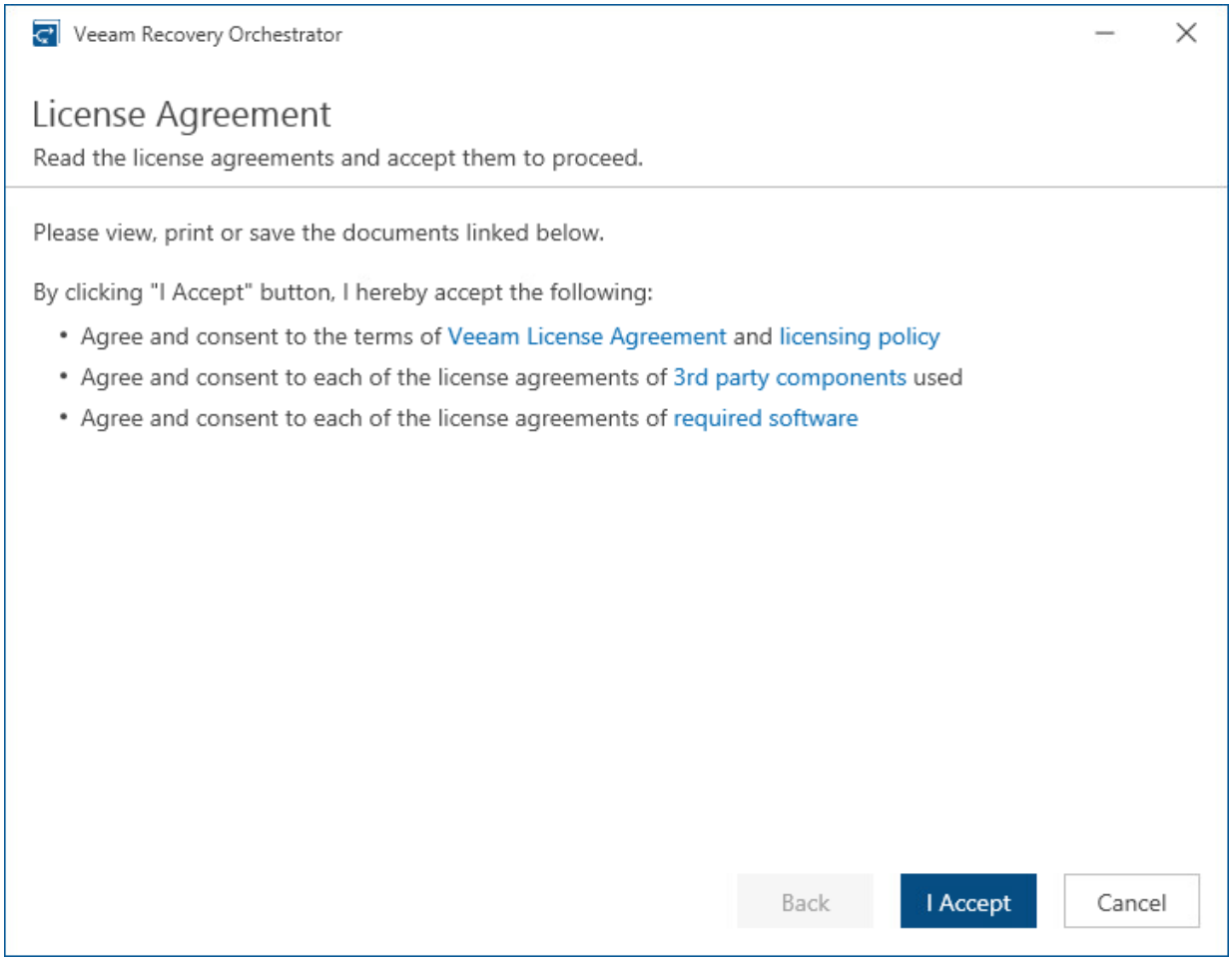
Step 2. Start Setup Wizard

To launch the **Veeam Recovery Orchestrator Setup** wizard, click **Veeam Data Platform 13**.



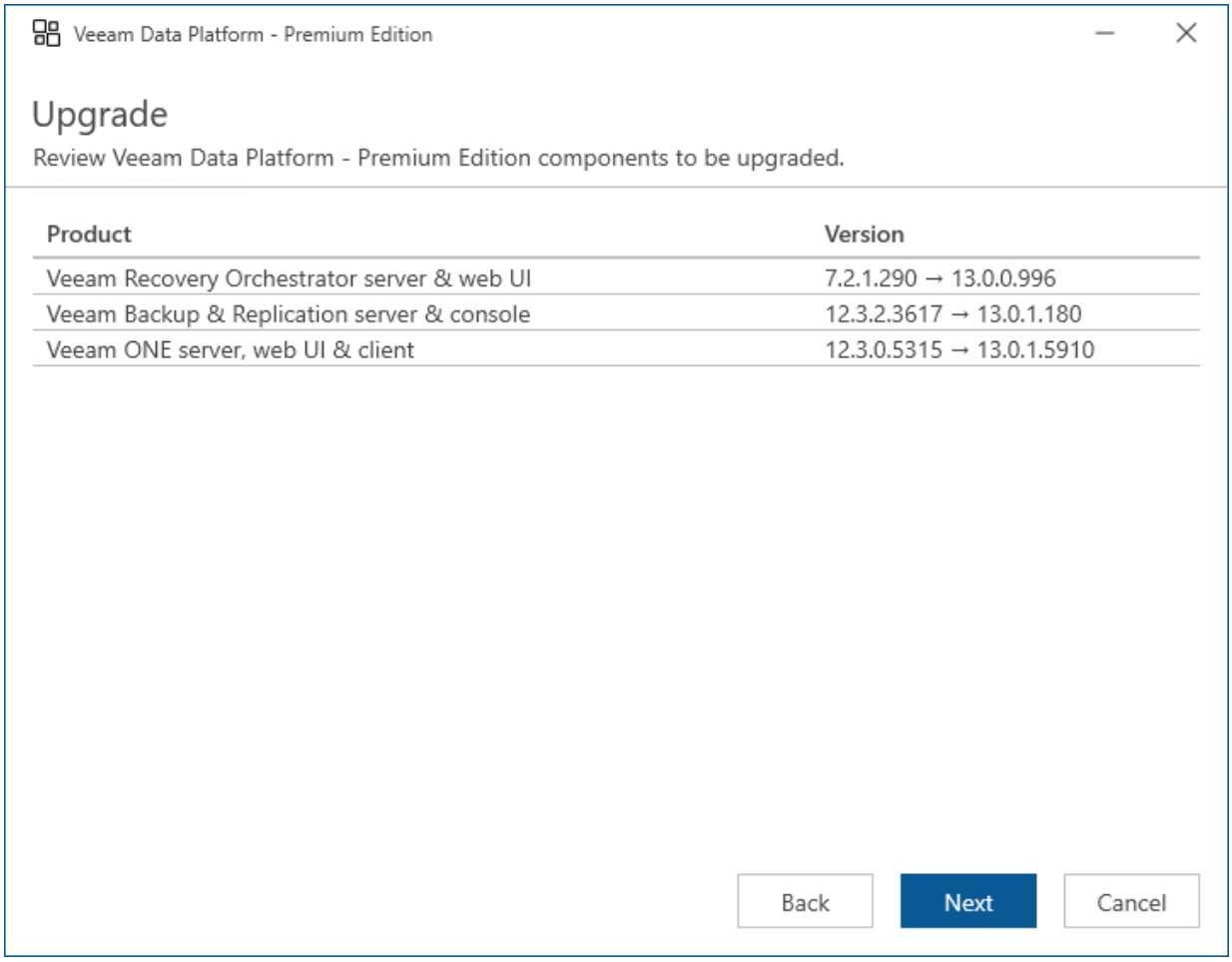
Step 3. Accept License Agreement

At the **License Agreement** step of the wizard, read and accept the Veeam license agreement, the licensing policy, the 3rd party components license agreement and the license agreement of the required software. If you reject the agreements, you will not be able to continue installation.



Step 4. Review Components to Upgrade

The installer will automatically detect components of the previous version installed on the machine. At the **Upgrade** step of the wizard, review the components to upgrade.



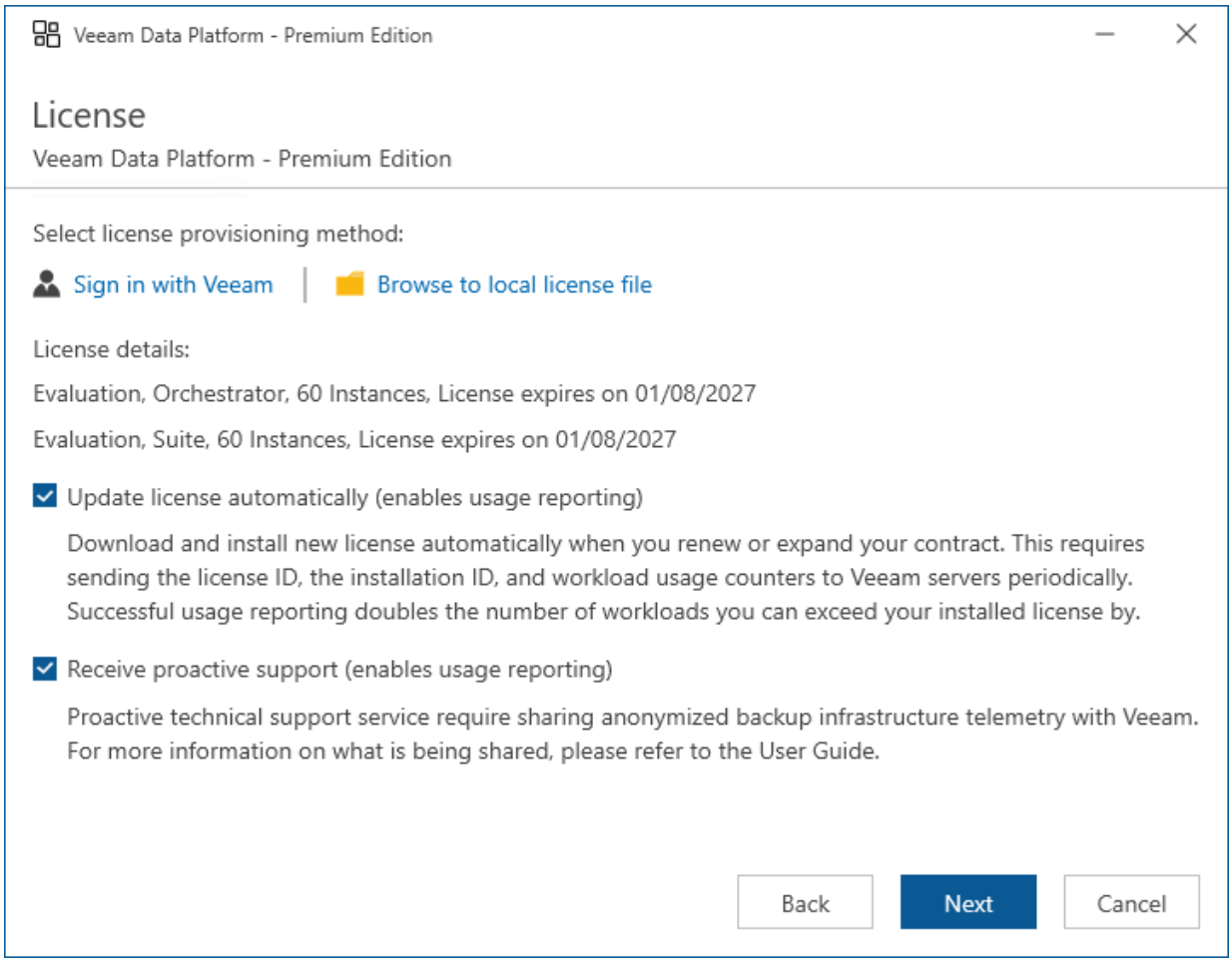
Step 5. Provide License File

At the **License** step of the wizard, do either of the following:

- Browse to a local folder on your workstation to locate the license file supplied to you by Veeam. To do that, click **Browse license file**.
- Log in to your Veeam account to upload a license file from the Veeam downloads page. To do that, click **Sigh in with Veeam**, enter the credentials of the account and choose the necessary file from the list of available licenses.

Note that you will not be able to continue installation without providing a license.

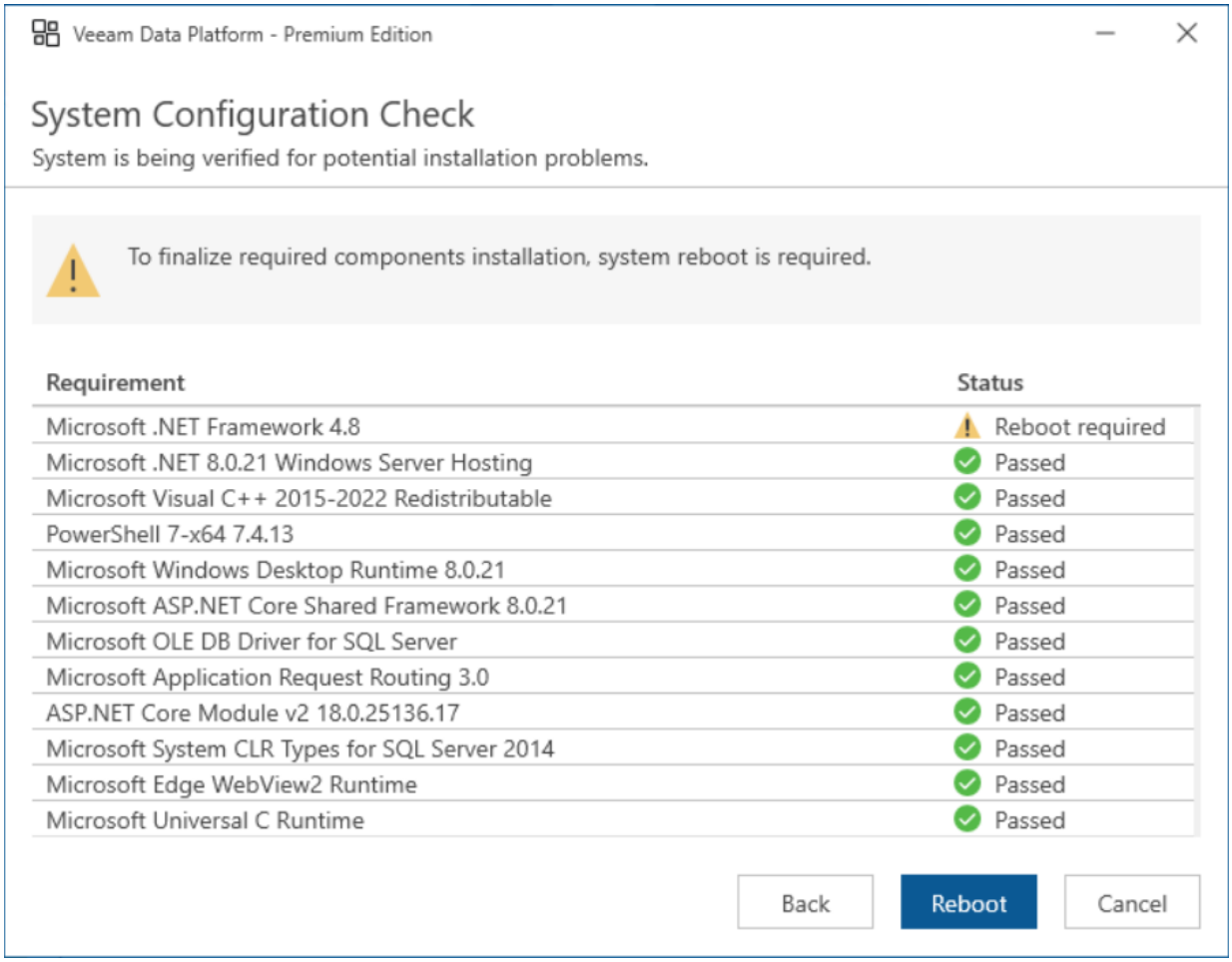
> **TIP**
>
> You can instruct Orchestrator to update the license automatically. If automatic license update is enabled, Orchestrator proactively communicates with the Veeam License Update Server to obtain and install a new license before the current license expires. You can enable automatic license update later when configuring Orchestrator.



Step 6. Perform System Configuration Check

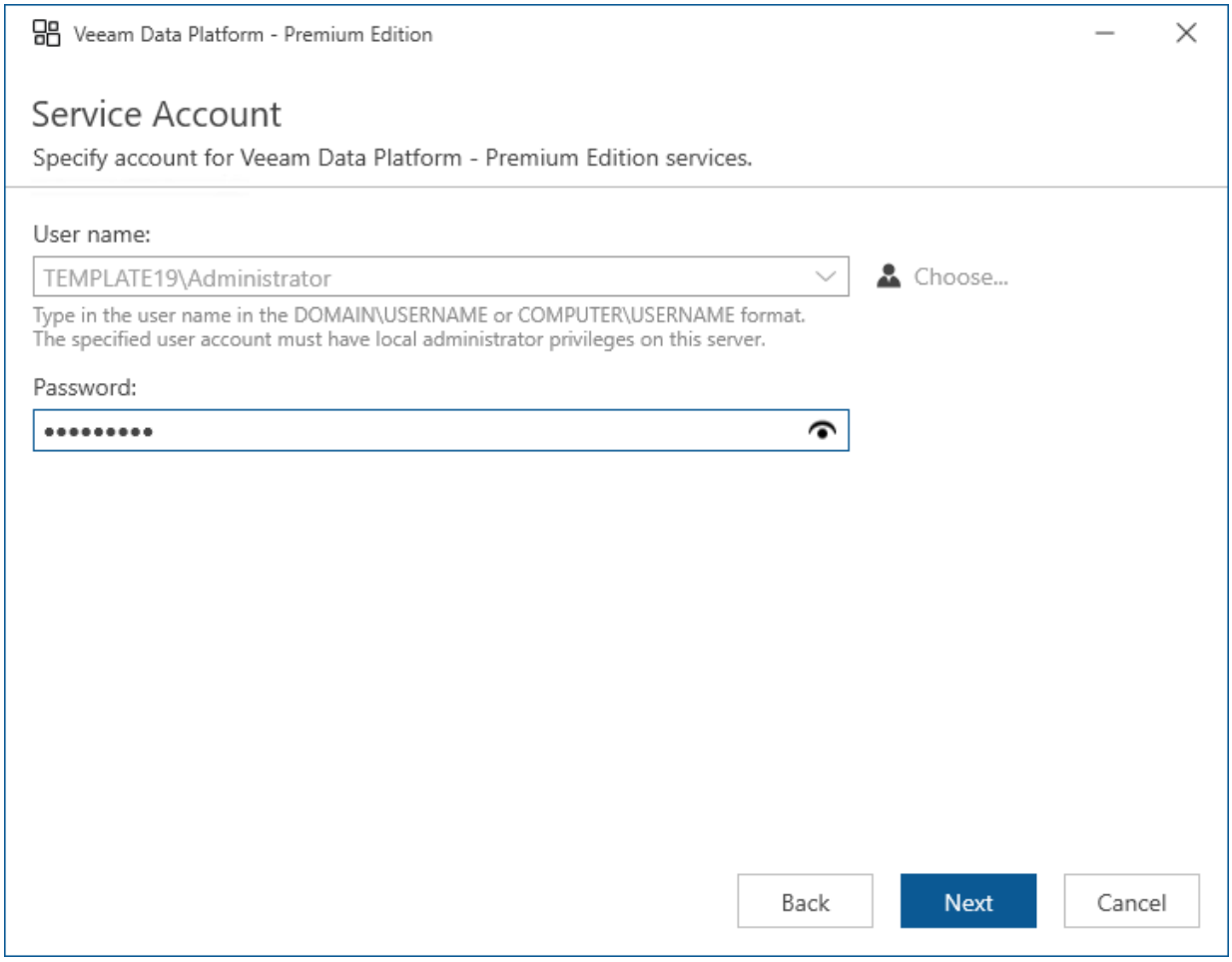
At the **System Configuration Check** step of the wizard, check whether all prerequisite software is available on the target system. If some of the required software components are missing, the wizard will install missing software automatically.

> **NOTE**
>
> Installation of the missing software may require performing a reboot — to do that, click **Reboot**.



Step 7. Specify Service Account Credentials

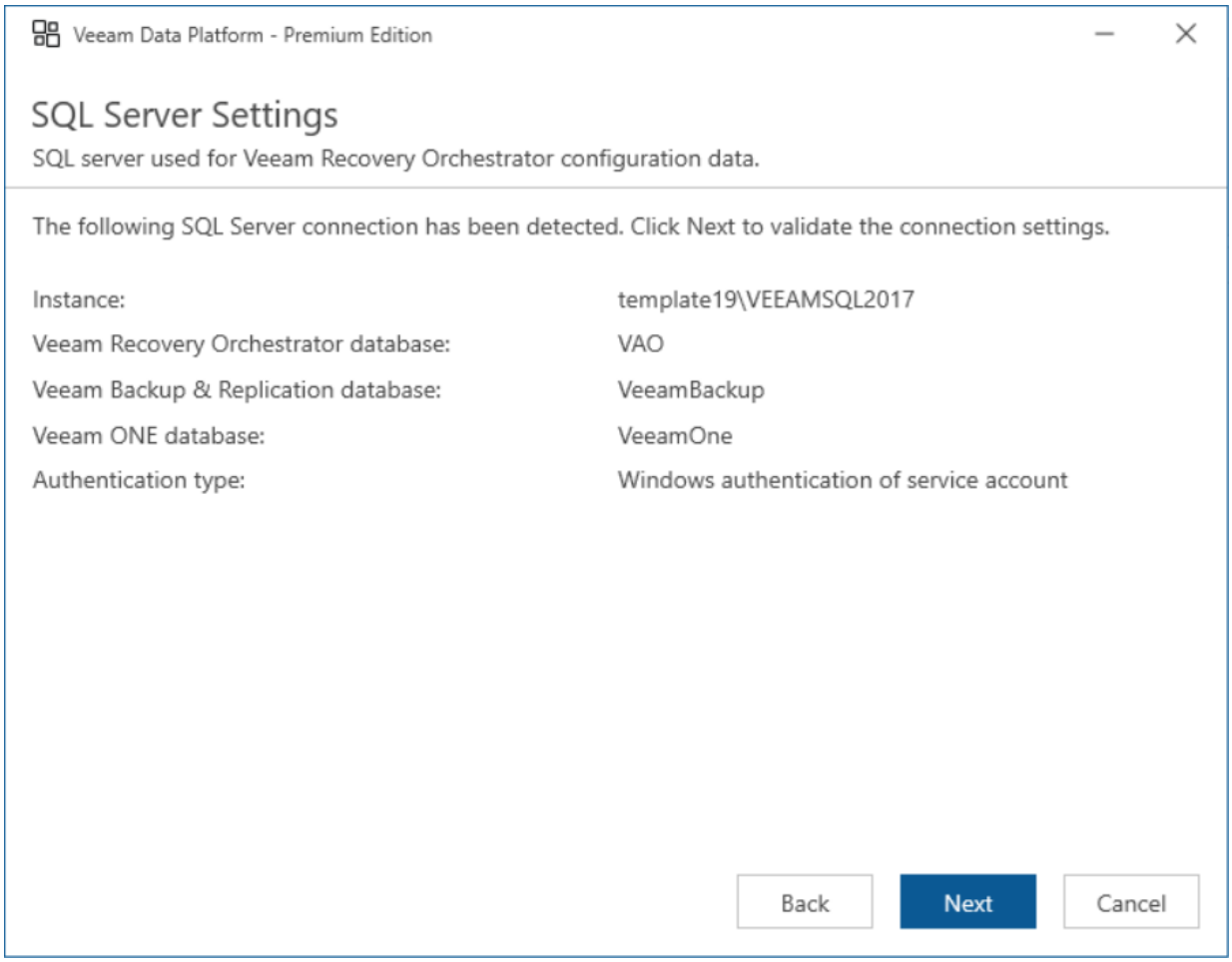
The installer will automatically detect the account that was previously used to run the Veeam Orchestrator Server Service. At the **Service Account** step of the wizard, enter the password for the account.



Step 8. Review SQL Server Connection Settings

The installer will automatically detect the Microsoft SQL Server instance (installed locally or remotely) that was previously used to host the Orchestrator, Veeam Backup & Replication and Veeam ONE databases. The installer will also detect credentials for an account used by Orchestrator components to access the databases.

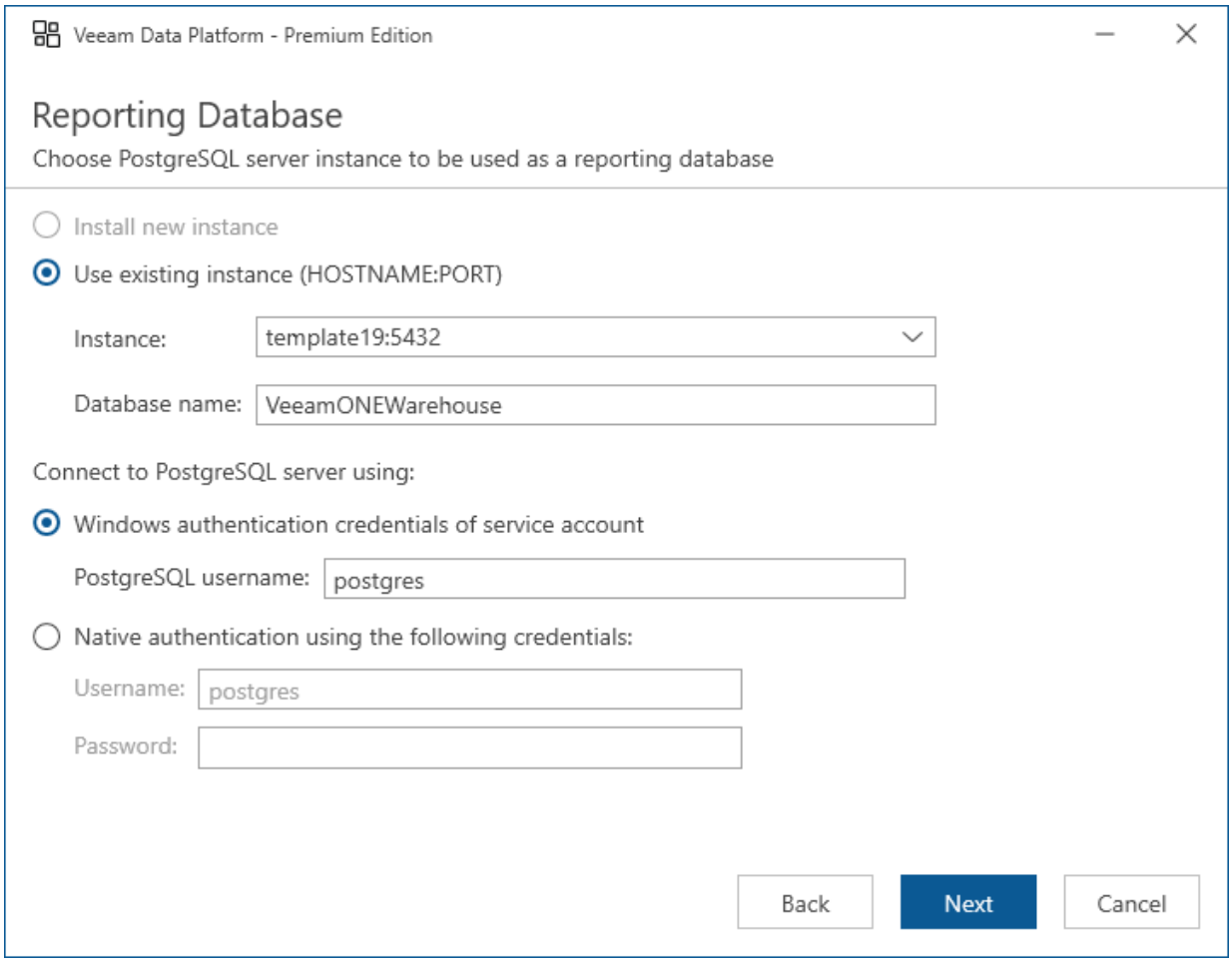
At the **SQL Server Settings** step of the wizard, review configuration information and click **Next**.



Step 9. Choose PostgreSQL Server

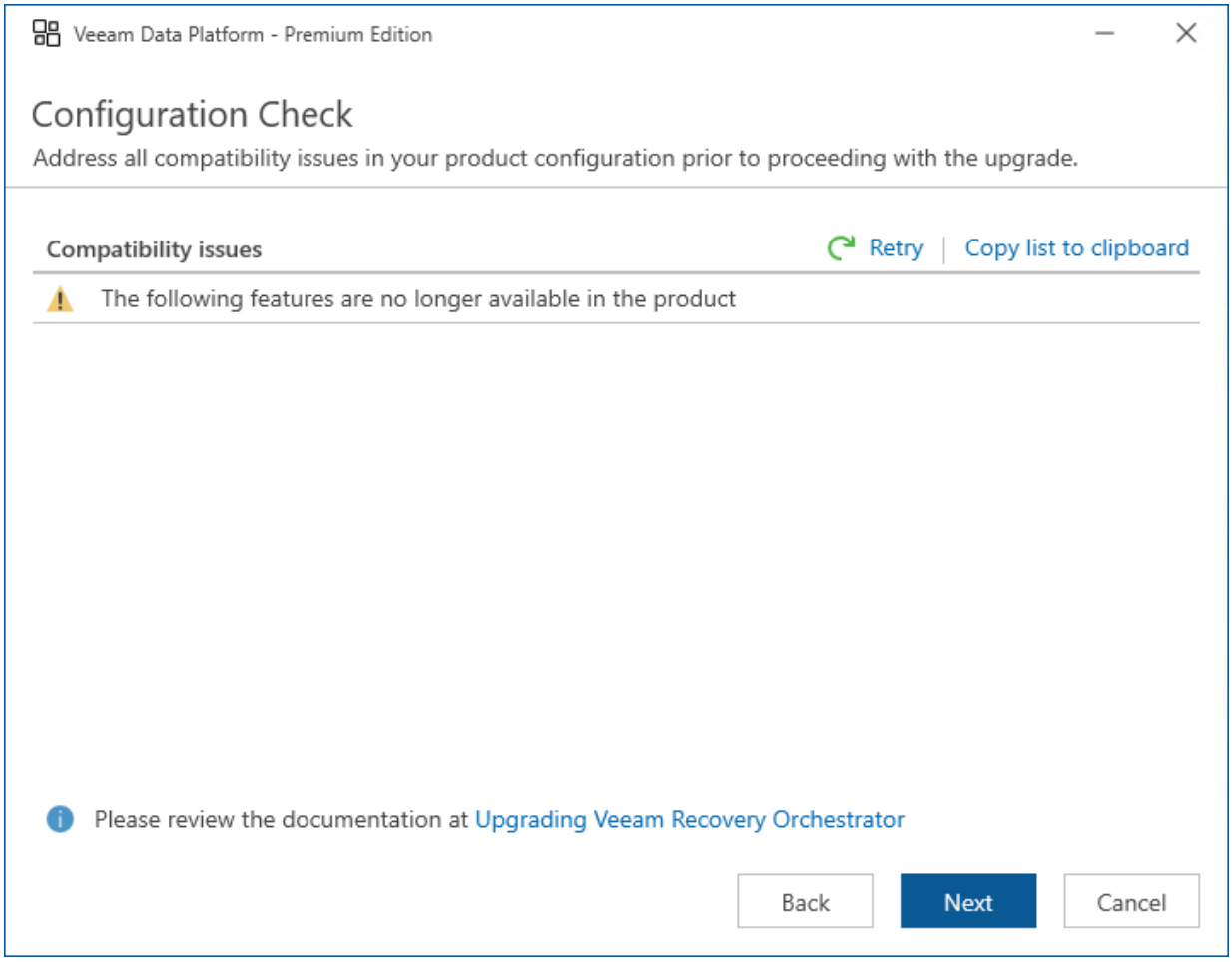
The installer will automatically detect the PostgreSQL Server instance (installed locally or remotely) that will be used to host the PostgreSQL reporting database. The installer will also detect credentials for an account used by Orchestrator components to access the database.

At the **Reporting Database** step of the wizard, review configuration information and click **Next**.



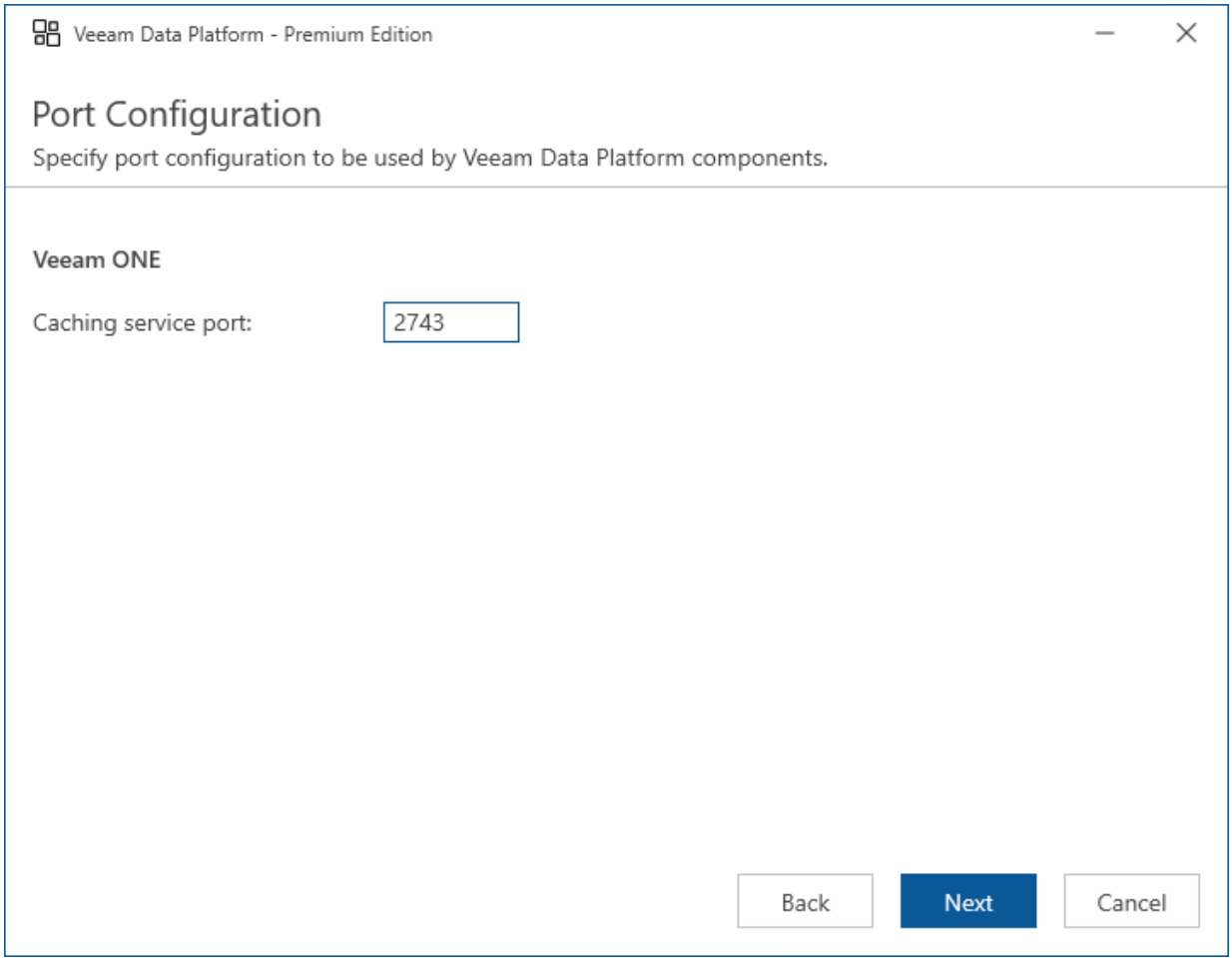
Step 10. Review Configuration Issues

At the **Configuration Check** step of the wizard, check whether there are any configuration compatibility issues that may impact the upgrade. To view details on a specific issue, click the issue in the **Compatibility issues** list.



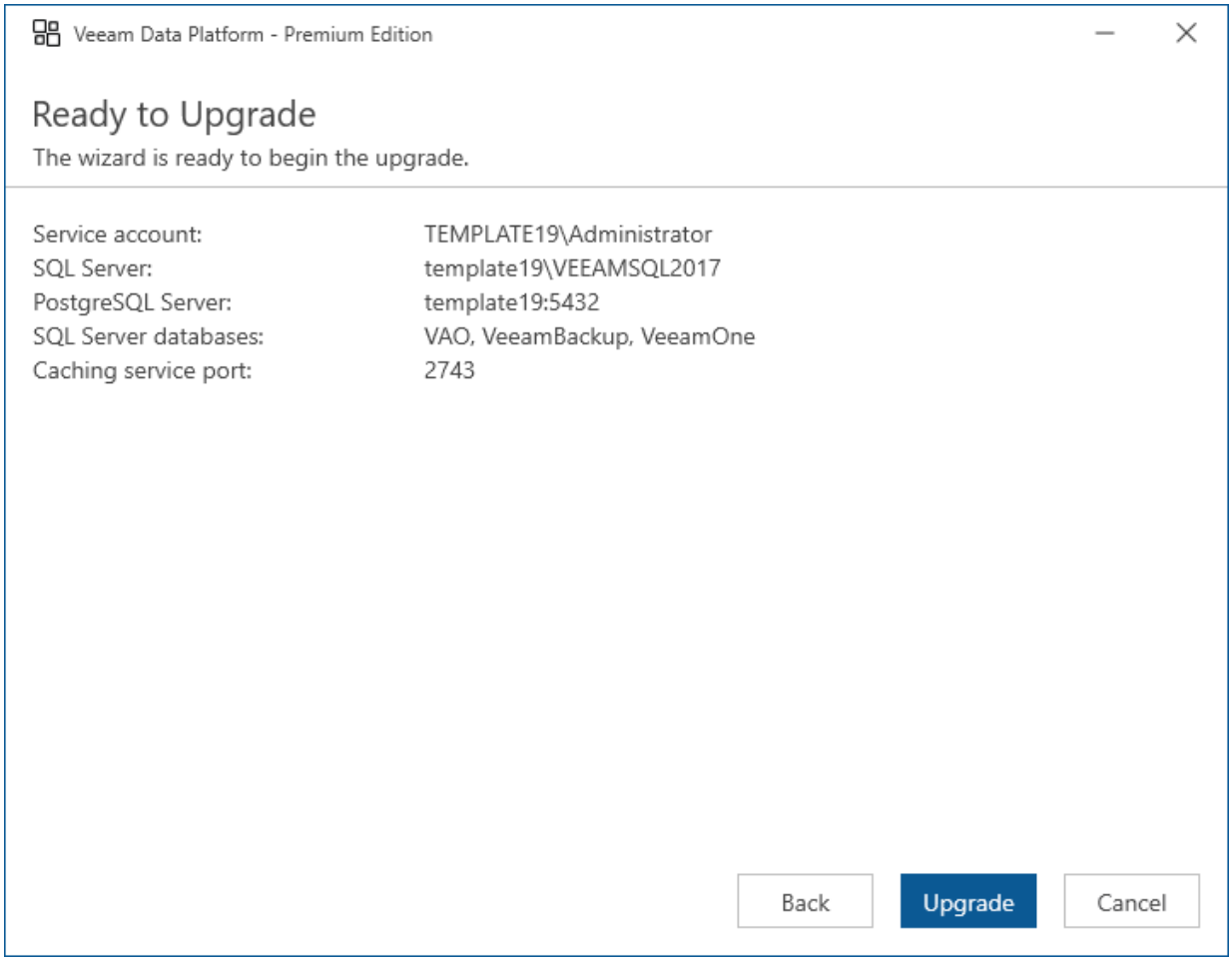
Step 11. Specify Caching Port

At the **Port Configuration** step of the wizard, customize the Veeam caching service port and click **Next**.



Step 12. Review Installation Summary

At the **Ready to Upgrade** step of the wizard, click **Upgrade** to begin upgrade.



NOTE

When the setup wizard upgrades the Orchestrator server, the embedded Veeam Backup & Replication server and the Veeam ONE server are automatically upgraded as well.

Step 13. Upgrade to Veeam Backup & Replication 12.1

It is essential that you upgrade to version 13 every remote Veeam Backup & Replication server connected to Orchestrator — this version contains numerous enhancements and fixes required for the Orchestrator integration. To upgrade Veeam Backup & Replication to version 13, follow the instructions provided in the Veeam Backup & Replication User Guide, section Upgrading to Veeam Backup & Replication 13, and in this Veeam KB article.

After the upgrade process completes, do the following:

1. Open the Veeam Backup & Replication console on each remote Veeam Backup & Replication server to update configured virtual labs. To perform the update, follow the steps of the **Edit Virtual Lab** wizard.

   For more information on editing Veeam Backup & Replication virtual labs, see the Veeam Backup & Replication User Guide, section Editing and Deleting Virtual Labs.

2. Open the Veeam Backup & Replication console on each remote Veeam Backup & Replication server to update Veeam Backup & Replication components installed on all managed servers. To perform the update, follow the steps of the **Components Update** wizard.

   For more information on updating server components, see the Veeam Backup & Replication User Guide, section Updating Infrastructure Components.

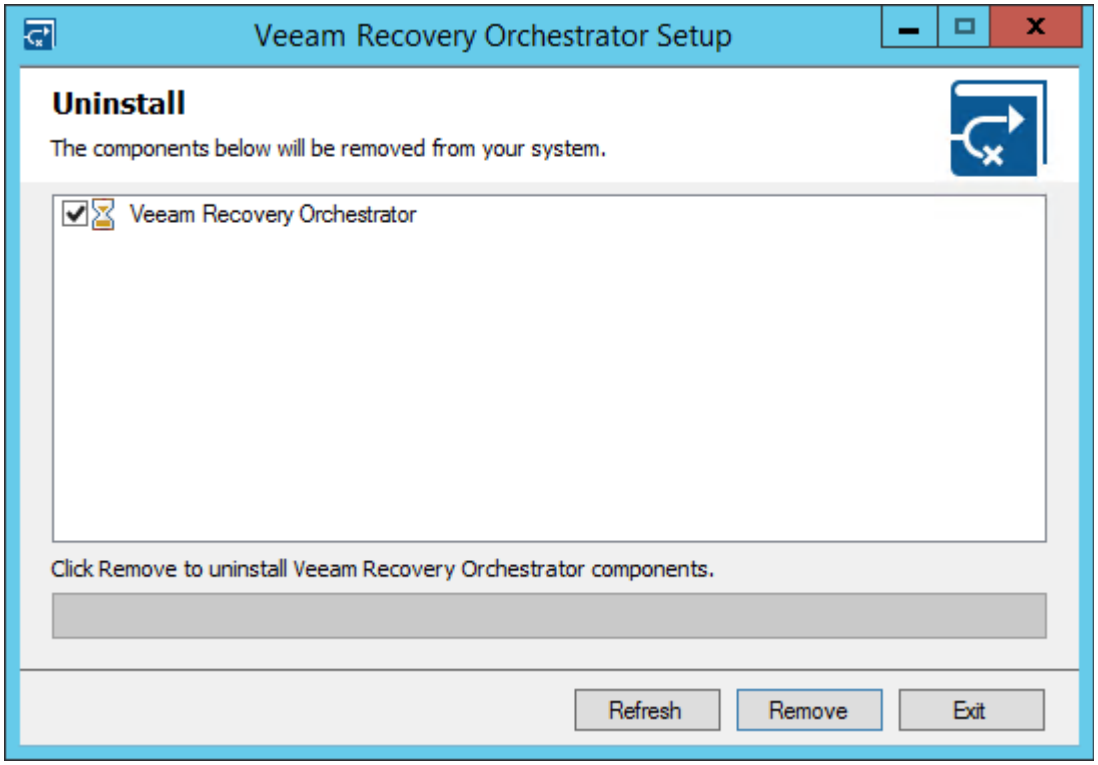
3. Open the Orchestrator UI and make sure all Orchestrator agents running on remote Veeam Backup & Replication servers have also been upgraded successfully.

   To do that, switch to the **Administration** page, navigate to **Infrastructure** and check the status of each connected Veeam Backup & Replication server. If you encounter a connection issue with an Orchestrator agent, repair the agent as described in the Veeam Recovery Orchestrator Operations Guide, section Repairing Orchestrator Agents.

Uninstalling Veeam Disaster Recovery Orchestrator

To uninstall Orchestrator components, perform the following steps:

1. Log in as a local Administrator to the machine where Orchestrator is installed.
2. From the **Start** menu, select **Control Panel** > **Programs and Features**.
3. Select **Veeam Recovery Orchestrator**, click **Uninstall** and then click **Remove**.



Appendix. Reinstalling Orchestrator Using Existing Databases

In some cases, you may need to migrate the Orchestrator server to another machine or reinstall it using existing databases. To do that, follow the instructions provided in this section.

> **IMPORTANT**
>
> Before you reinstall Orchestrator, it is required that you disable multi-factor authentication. Otherwise, you will not be able to log in to the Web UI. For more information on how to disable MFA, see the Veeam Recovery Orchestrator Operations Guide, section Enabling and Disabling Multi-Factoring Authentication.

Step 1. Back Up Existing Databases

Before you reinstall Orchestrator, you must create backups of databases used to store data collected from Orchestrator, Veeam Backup & Replication and Veeam ONE, which were previously installed with the Orchestrator server.

You must also create a backup of the registry key used to encrypt and decrypt credentials stored in the Orchestrator database. To do that, open the Windows Registry Editor and export the *HKEY_LOCAL_MACHINE|SOFTWARE|Veeam|Availability Orchestrator|Server|Security* folder.

Step 2. Restore Backed-Up Databases

Restore the backed-up Orchestrator, Veeam Backup & Replication and Veeam ONE databases to a new local or remote Microsoft SQL Server instance.

> **IMPORTANT**
>
> It is required that the restored databases are located on the same Microsoft SQL Server instance and have the same names as the previously installed databases.

Step 3. Install Veeam Recovery Orchestrator

Run the Orchestrator setup wizard and follow the instructions provided in section Deploying Veeam Recovery Orchestrator.

> **IMPORTANT**
>
> It is required that you install the same Orchestrator version as the previously installed one.

At the **Database Names** step of the wizard, browse to the restored Orchestrator database, and specify names to create new Veeam Backup & Replication and Veeam ONE databases.

> **NOTE**
>
> Orchestrator reinstallation process does not involve the Veeam Backup & Replication and Veeam ONE databases that you restored at step 2. To allow Orchestrator to use the restored databases, you must perform reconfiguration of Veeam ONE and Veeam Backup & Replication servers as described at step 4.

Step 4. Reconfigure Veeam ONE and Veeam Backup & Replication

As soon as the Orchestrator installation process completes:

1. Open the **Services** snap-in and stop the Veeam Orchestrator Server Service, Veeam Orchestrator ONE Integration Service and Veeam Orchestrator Agent for Backup service.
2. Reconfigure Veeam ONE and Veeam Backup & Replication servers to use old databases instead of new ones created during Orchestrator installation.

   For more information, see these Veeam KB articles: Moving Veeam ONE database to a different SQL Server and How to move the Veeam Backup & Replication software to another server.
3. Import the folder that you exported at step 1 to a new machine where Orchestrator is installed, double-click the imported *vro registry* key file and click **Yes** in the Registry Editor confirmation window.

   As soon as you confirm the operation, the key will be imported to the Windows registry of the new machine.
4. Start the Veeam Orchestrator Server Service, Veeam Orchestrator ONE Integration Service and Veeam Orchestrator Agent for Backup service.

Step 5. Additional Configuration

Depending on the new database location, you will have to perform a number of additional actions.

Installing Orchestrator on the same machine

If you have performed installation on the same machine that was used to run Orchestrator earlier, no additional configuration is required.

Installing Orchestrator on a new machine with the same name

If you have performed installation on a new machine with the same name as the machine that was used to run Orchestrator earlier, do the following.

1. Open the Orchestrator UI and switch to the **Administration** page.
2. Navigate to **Credentials**.

   Modify all manually added credentials managed by the Orchestrator server.

   a. Select a credential and click **Edit**.

   b. In the **Edit Credentials** window, enter a password for the credential.

   c. Repeat the step for each manually added credential.

> **NOTE**
>
> All credentials collected from remote Veeam Backup & Replication servers will be automatically updated as soon as Orchestrator agents installed on the servers connect to the Orchestrator server.

3. Navigate to **Infrastructure** > **Orchestrator Agents** and make sure that all Orchestrator agents previously installed on the server have the *Healthy* status.

4. Navigate to **Infrastructure** > **VMware** and make sure that all VMware servers previously connected to the server have the *Connected* status.
5. Navigate to **Infrastructure** > **Microsoft** and make sure that all SCVMM servers previously connected to the server have the *Connected* status.
6. Navigate to **Infrastructure** > **Storage** and make sure that all storage systems previously connected to the server have the *Connected* status.
7. Navigate to **Infrastructure** > **Azure** and make sure that all Orchestrator agents previously installed on the server with connected Microsoft Azure accounts have the *Connected* status.
8. [Applies only if you have previously connected an SMTP server and enabled authorization]

   Navigate to **Mail**.

   a. Click **Edit**.

   b. In the **SMTP Server** window, enter a password required for SMTP server authentication.

Installing Orchestrator on a new machine with a new name

If you have performed installation on a new machine with a new name, follow the instructions provided in steps 1–8. No additional actions are required.

> **TIP**
>
> To make sure all the configuration changes are correct, after you perform the required actions, generate the **Plan Readiness Check Report** for each Orchestrator plan. For more information on the report, see the Veeam Recovery Orchestrator Operations Guide, section Running Plan Readiness Check.