Veeam Disaster Recovery Orchestrator

Version 6.0

Group Management Guide

February, 2023

> **NOTE**
>
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- Veeam R&D Forums: forums.veeam.com

About This Document

This document describes how to perform categorization of infrastructure objects for use in Veeam Disaster Recovery Orchestrator. The document explains the data categorization model, and includes the description of available categorization methods.

Intended Audience

This guide is intended for IT managers, virtual infrastructure administrators, and other personnel who use Veeam Disaster Recovery Orchestrator. This guide assumes that you have a good understanding of Veeam Disaster Recovery Orchestrator.

Overview

Before you create plans and add recovery locations in Veeam Disaster Recovery Orchestrator (Orchestrator), you must categorize infrastructure objects into groups. Inventory groups will be used to build and edit Orchestrator plans, and resource groups will be used to configure recovery locations.

> **IMPORTANT**
>
> This guide does not apply to storage plans — these plans include inventory groups created using the native Orchestrator grouping algorithm. This algorithm runs under the hood to retrieve the list of all datastores and VMs that are managed by vCenter Servers connected to Orchestrator, and then to group the VMs by these datastores. For more information, see the Veeam Disaster Recovery Orchestrator User Guide, section Appendix. Grouping and Categorization.

Categorization of infrastructure objects for restore, replica and cloud plans is performed in Veeam ONE Client, a component of the embedded Veeam ONE server. The embedded Veeam ONE server is installed with the Orchestrator server, and is responsible for gathering inventory details, object properties and tags. This information is further used for organizing machines, hosts, clusters, datastores and datastore clusters into groups.

> **NOTE**
>
> The embedded Veeam ONE server is a custom lightweight edition of Veeam ONE that should not used for other monitoring or reporting functions.

To categorize infrastructure objects into groups, configure connections to the required virtual and physical infrastructure servers in the Orchestrator UI. All servers connected to Orchestrator automatically become available in Veeam ONE Client. After you create groups in Veeam ONE Client, these groups will be populated in the Orchestrator UI.
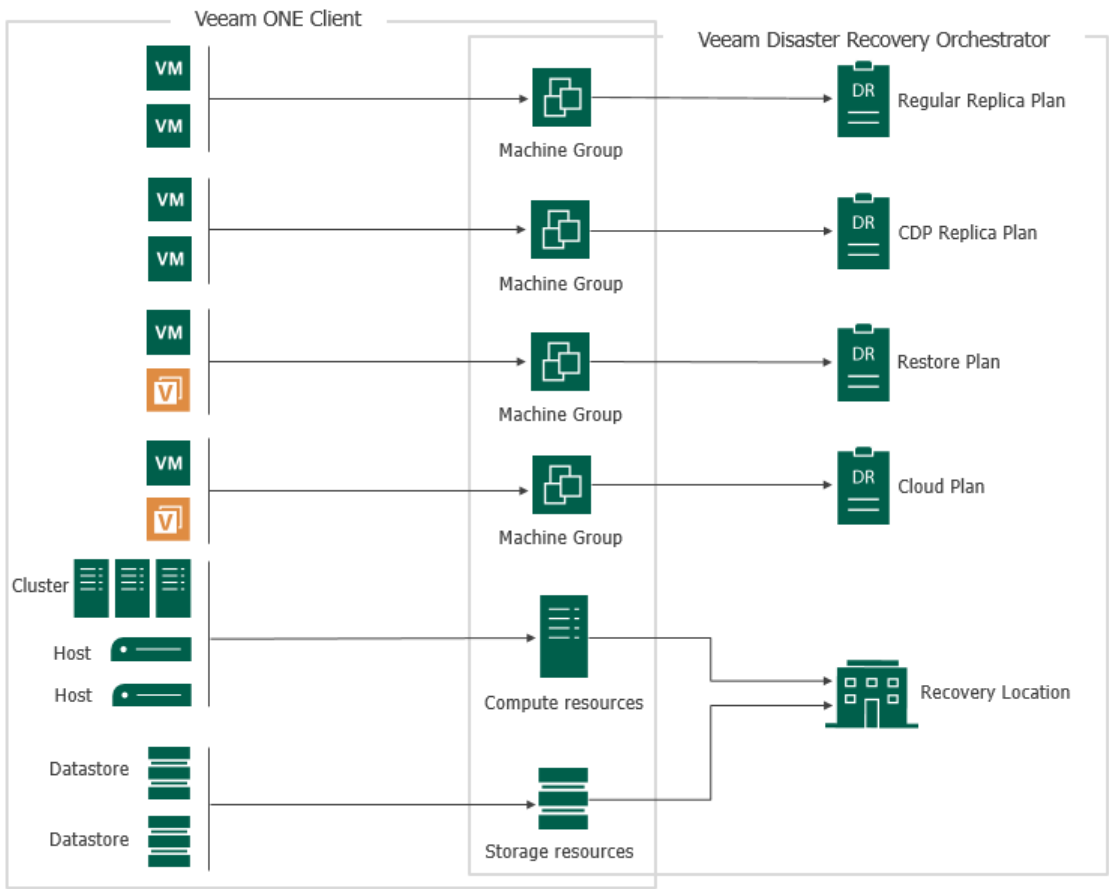
Accessing Veeam ONE Client

To categorize infrastructure objects into groups, access Veeam ONE Client:

1. Log in to the machine where Veeam ONE Client is installed.

2. From the Microsoft Windows Start menu, choose **Veeam ONE Client**.

3. In the authentication window, specify an FQDN or IP address of a server where the embedded Veeam ONE server runs.

   Enter user account credentials that will be used to connect to the Veeam ONE server. To use credentials of the user account under which you are logged in, select the **Use Windows session authentication** check box.

> **IMPORTANT**
>
> The account used to access a remote instance of Veeam ONE Client must be a member of the *Veeam ONE Administrators* group on the Orchestrator server. The local Administrator who performs Orchestrator installation automatically becomes a member of this group.
>
> For more information on Veeam ONE security groups, see the Veeam ONE Deployment Guide, section Security Groups.

4. Click **Connect**.
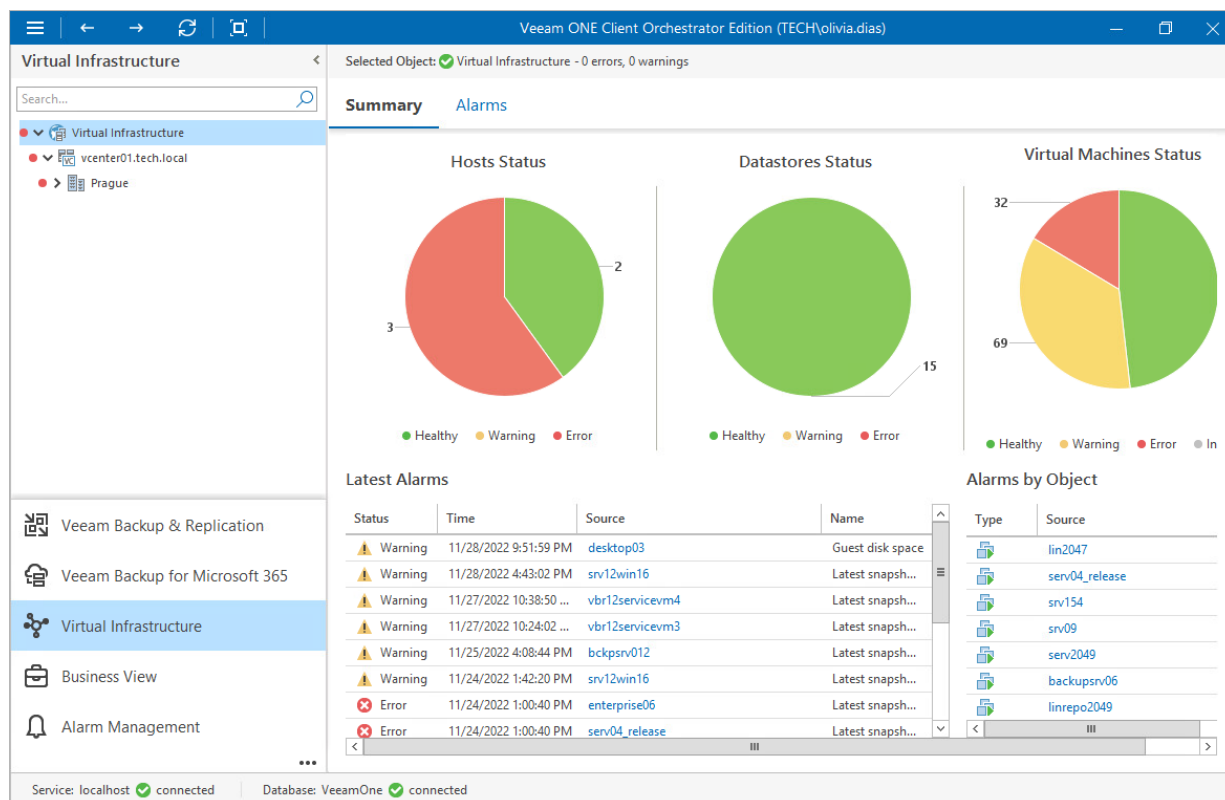
Categorization Model and Methods

To present the virtual or physical infrastructure, Veeam ONE Client uses the model that includes categories, groups and objects:

- **Category** is a logical division or a sector of the virtual or physical infrastructure. Each category includes one or more groups.

  Categories can be static or dynamic:

  - **Static** categories include a user-defined number of groups. You can manually create groups that Veeam ONE Client will populate each time data collection runs.

  - **Dynamic** categories can include one or more groups that Veeam ONE Client creates and populates automatically each time data collection runs.

> **NOTE**
>
> Veeam ONE Client comes with the predefined category named *B&R Job*. The category includes groups of VMs protected by Veeam backup jobs, Veeam replication jobs and Veeam CDP policies that are managed by Veeam Backup & Replication servers connected to Orchestrator. Note that vCenter Servers where these VMs belong must also be connected to Orchestrator to allow Veeam ONE Client to categorize the VMs.
>
> Do not rename or edit the *B&R Job* category — this may cause errors when trying to use inventory groups from the category in orchestration plans. You can delete this category if you no longer need it. To learn how to delete categories, see Deleting Categories.

- **Group** is a collection of virtual or physical infrastructure objects that share same characteristics or match same criteria. You can think of a group as a tag assigned to an object.

  Each group includes one or more objects.

- **Objects** are categorized elements of the virtual or physical infrastructure.

  There are five types of objects you can categorize in Veeam ONE Client: clusters, hosts, storage objects, virtual machines and Veeam agents.

The following picture illustrates an example of the Veeam ONE Client categorization model for virtual machines.
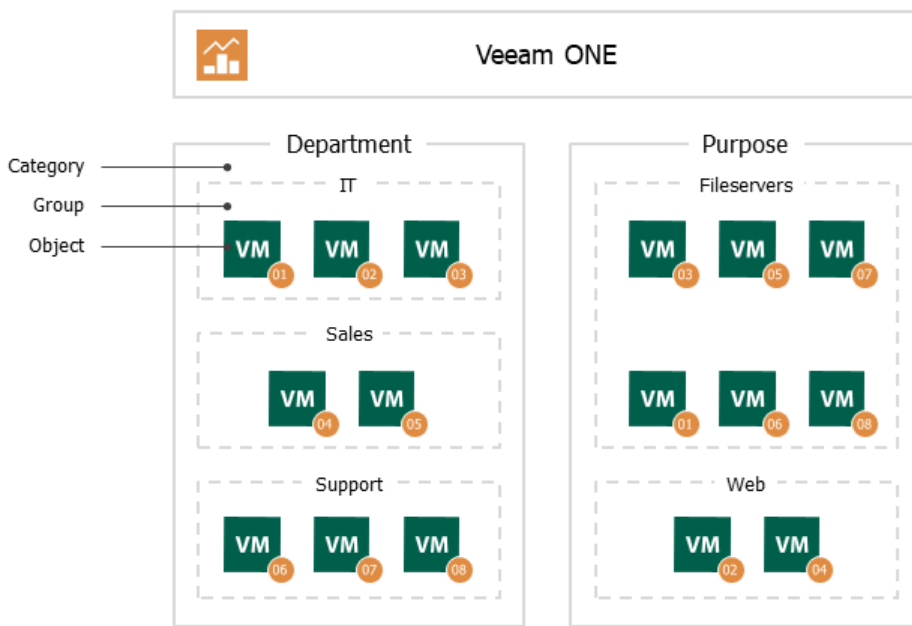
In the example above, the categorization model includes categories *Department* and *Purpose*.

- *Department* category includes groups *IT*, *Sales* and *Support*
- *Purpose* category includes groups *Fileservers* and *Web*

Virtual machines numbered 1-8 are included in groups within both categories.

Categorization Methods

To categorize infrastructure objects into groups, you can use the following methods:

- Tag-based categorization — the default method used by Veeam ONE Client that allows you to import an existing categorization model from the vCenter Server. Tag-based categorization is the only way to group datastore clusters.

- Import-based categorization — the method that allows you to import a categorization model using a CSV file. You can either synchronize Business View categorization data with categorization data from 3rd party software automatically, or categorize virtual or physical infrastructure objects outside Veeam ONE Client and import this categorization data manually.

- Single-parameter categorization — the method that allows you to configure dynamic categories. Veeam ONE Client will create groups automatically based on the values of a single property of an object.

- Multiple-condition categorization — the method that allows you to configure static categories and create groups manually by combining multiple object properties and logical operators.

- Categorization with grouping expressions — the method that allows you to configure dynamic categories. Veeam ONE Client will create groups automatically based on object properties, operators and methods included into expressions.

You can also manually assign the existing categorization values to your infrastructure objects as described in section Assigning Categorization Values Manually.

> **NOTE**
>
> Veeam ONE Client does not allow you to enable synchronization with both vCenter Server tags and a CSV file at the same time — when you switch between these options or select the **Do not import** option, Veeam ONE Client deletes all previously imported categories. However, you can combine either of these categorization models with custom categories and groups created using the single-parameter, multiple-condition and grouping expression categorization.

Tag-Based Categorization

[This section does not apply to machines protected by Veeam agents]

The embedded Veeam ONE server collects tags assigned to objects and tag categories available on the vCenter Server side. If you have vCenter Server tags assigned to virtual infrastructure objects, you can use these tags to categorize objects in Veeam ONE Client.

Veeam ONE Client uses tags as one of the default methods of categorization. As soon as you connect virtual infrastructure servers to Orchestrator, all created vSphere tags are imported into Veeam ONE Client. For more information on how to create tag categories and assign tags to infrastructure objects in the vSphere inventory, see VMware Docs.

Every time data collection runs, tag categories are imported as Veeam ONE Business View categories, and tag values are assigned to groups within these categories. Note that the tag synchronization process may take more than 3 hours to complete.

> **TIP**
>
> You can speed up the data synchronization process using Veeam ONE Reporter installed as part of the embedded Veeam ONE server. To do that:
>
> 1. In a web browser, navigate to the Veeam ONE Reporter web address.
>
>   The address consists of an FQDN of the Orchestrator server and the website port specified during installation (by default, **1239**). Note that Veeam ONE Reporter is available over HTTPS.
>
>    ```
>    https://hostname:1239/
>    ```
> 2. Navigate to **Data Collection**.
> 3. Click **Start**.

To import tags from the vCenter Server and System Center Virtual Machine Manager:

1. Open Veeam ONE Client.

2. On the toolbar, click **Settings** > **Server Settings**.

3. In the **Server Settings** window, switch to the **Business View** tab.

4. In the **Configure import settings to periodically synchronize Business View categorization model with external sources** section, select the **From vCenter Server and System Center Virtual Machine Manager** option.


IMPORTANT

Categories imported from the vCenter Server are read-only, you cannot edit or delete them. To remove such categories from the **Business View** tree, select the **Do not import** option. As soon as you disable import, all previously imported categories and groups will be deleted from Veeam ONE Client. All created custom categories and groups will remain unchanged.

By default, Veeam ONE Client imports all tags and custom properties available on the vCenter Server side. To select which tags and properties to import:

a. In the **Configure import settings to periodically synchronize Business View categorization model with external sources** section, click **Tags**.

b. In the **Tags Import** window, clear check boxes next to tags that you want to exclude from import.

To exclude all tags in a category, clear the check box next to the name of the category.

c. Click **OK** to save settings.
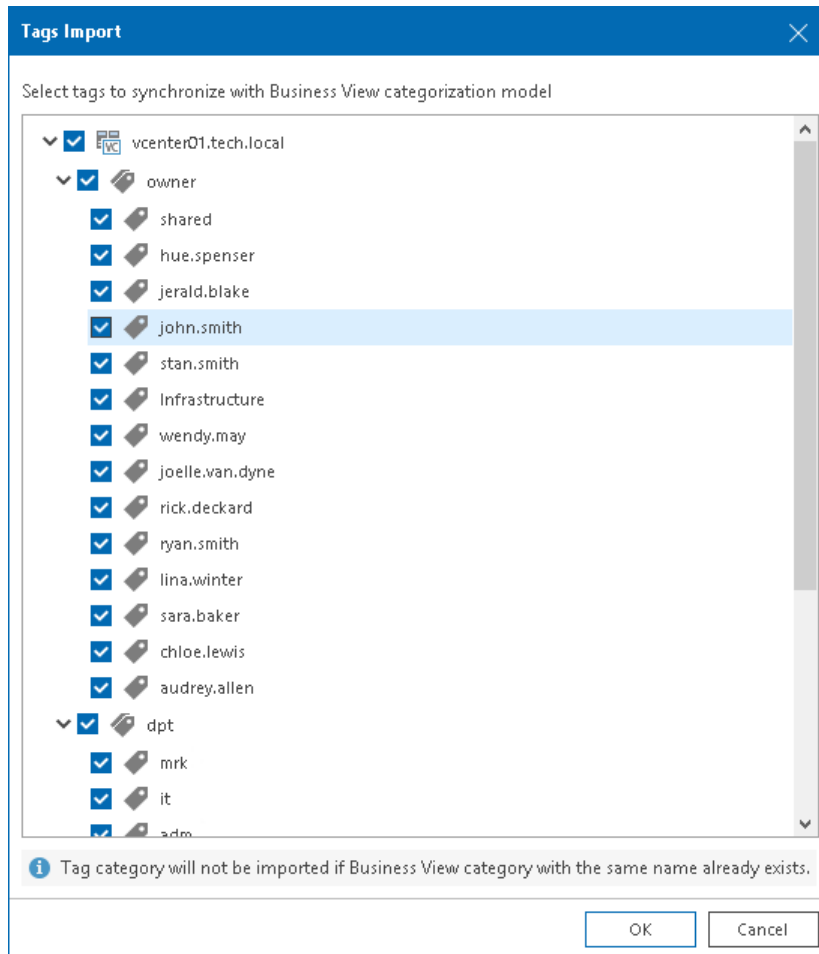
5. Click **OK** to close the **Server Settings** window.

> **NOTE**
>
> Consider the following:
>
> - If Veeam ONE Client detects tags and custom properties with names that are already assigned to categories in Business View, it will exclude such tags and properties from synchronization.
> - If Veeam ONE Client detects tag categories with the same name on multiple vCenter Servers, it will assign tag values from these categories to groups within a single Veeam ONE Business View category.

Import-Based Categorization

In Veeam ONE Client, you can import categorization model using a CSV file manually or automatically.

Importing Categorization Data Manually

If you have already categorized the objects outside Veeam ONE Client, you can describe categorization model using a CSV file and then import this file to Veeam ONE Client. When you import a CSV file manually, Veeam ONE Client creates categories and groups specified in the file and maps objects to these groups.

> **NOTE**
>
> To make sure that Veeam ONE Client will process the CSV file without errors, check the file structure. For more information on CSV file structure, see CSV File Structure.

To import categorization data from a CSV file:

1. Open Veeam ONE Client.

2. On the toolbar, click **Settings** > **Server Settings**.

3. In the **Server Settings** window, switch to the **Business View** tab.

4. In the **Configure import settings to periodically synchronize Business View categorization model with external sources** section, click the **Import categorization model from CSV file once** link.

5. In the **Categorization Import** window, specify the path to the CSV file with the categorization data you want to import.

6. Click **Import**.

7. Click **OK** to close the **Server Settings** window.
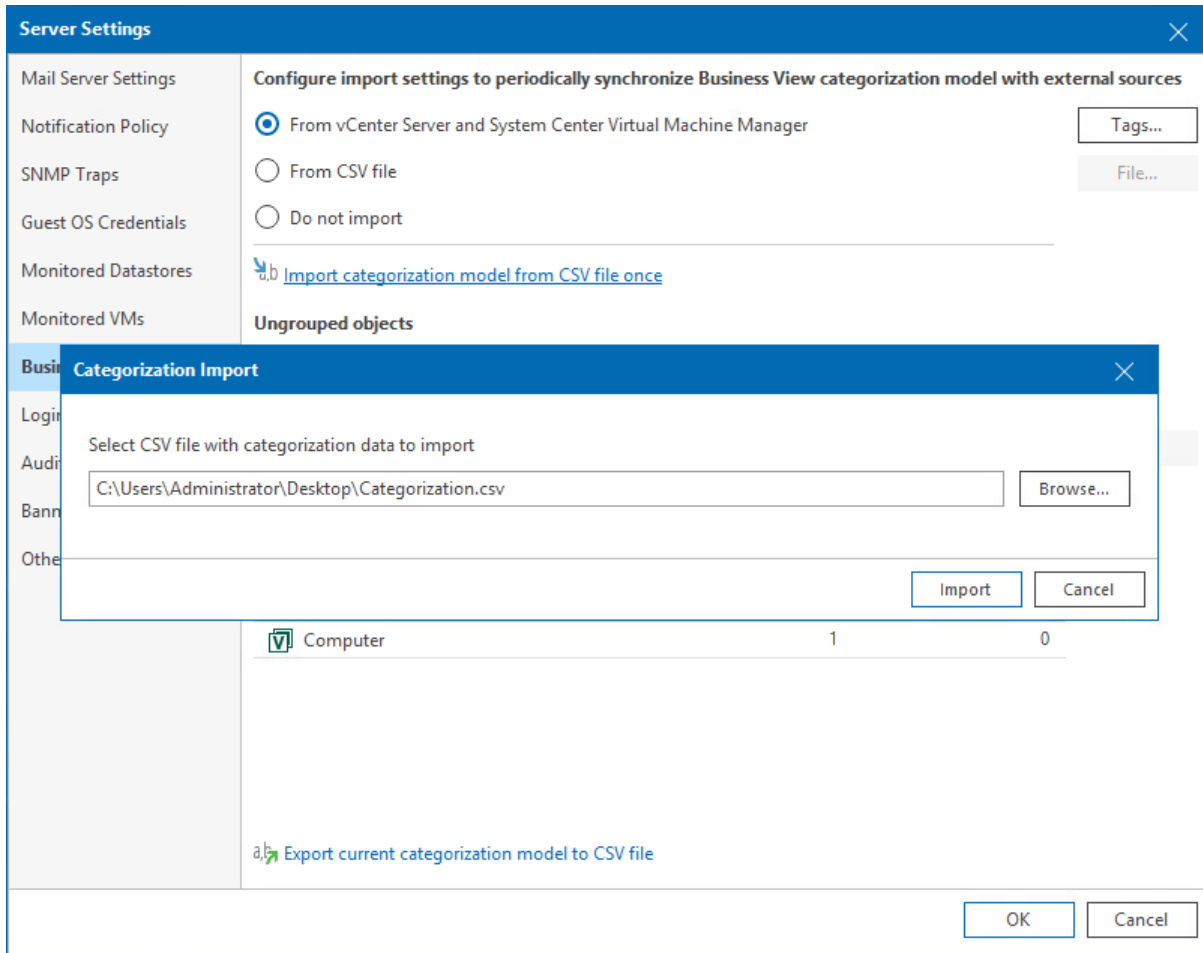
NOTE

If Veeam ONE Client detects in the imported CSV file categories and groups that already exist in Business View, it will map objects specified in the CSV file to existing groups.

Importing Categorization Data Automatically

You can synchronize categorization data between Veeam ONE Client and a 3rd party application every time data collection runs. To do this, you can specify a path to a CSV file with the categorization data exported from a 3rd party application. Veeam ONE Client will import data from this file during every data collection session.

Additionally, you can specify a path to a script that must be triggered before data from the CSV file is imported. This can be a script that creates the CSV file based on data from a 3rd party application or updates the file. For more information on structuring the file, see CSV File Structure.

> **IMPORTANT**
>
> Categories imported from CSV file automatically are read-only, you cannot edit or delete them. To remove such categories from Business View tree, select the **Do not import** option in the **Server Settings** window.
>
> As soon as you disable import, all previously imported categories and groups will be deleted from Veeam ONE Client. All created custom categories and groups will remain unchanged.

To configure periodic synchronization of categorization data between Veeam ONE Client and a 3rd party application:

1. Open Veeam ONE Client.

2. On the toolbar, click **Settings** > **Server Settings**.

3. In the **Server Settings** window, switch to the **Business View** tab.

4. In the **Configure import settings to periodically synchronize Business View categorization model with external sources** section, select **From CSV file**.

5. In the **Configure import settings to periodically synchronize Business View categorization model with external sources** section, click **File**.

6. In the **Categorization File** window, specify the path to the CSV file with the categorization data you want to synchronize.

7. If you want to trigger a custom script before data synchronization, select the **Execute this script before synchronizing with the CSV file** check box and specify a path to the script file.

> **NOTE**
>
> The CSV and script files must reside in a folder that is accessible by Veeam ONE Reporter Server service. The account under which the service runs must have read permissions on the files.

8. Click **Save**.

9. Click **OK** to close the **Server Settings** window.
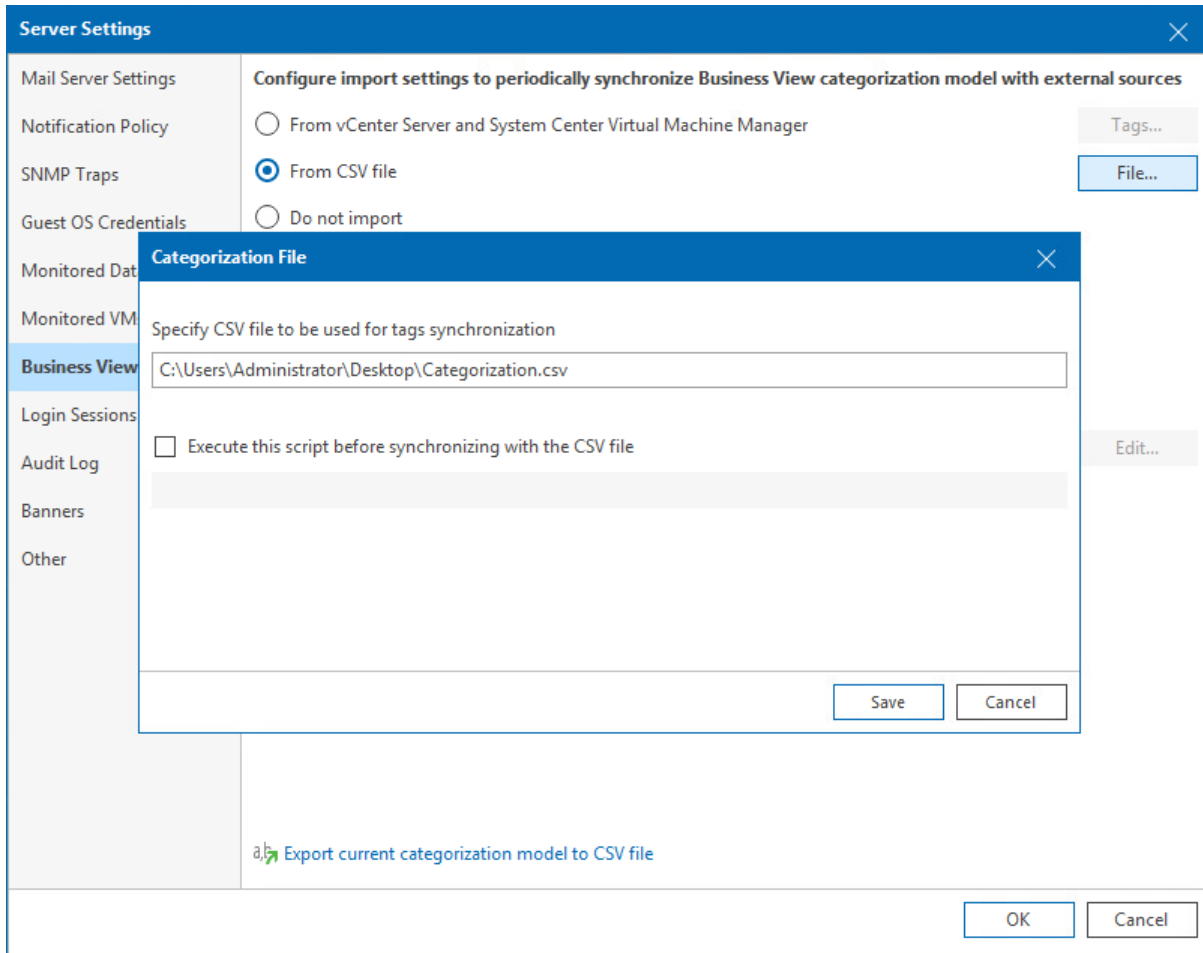
NOTE

If Veeam ONE Client detects tags and custom properties with names that are already assigned to categories in Business View, it will exclude such tags and properties from synchronization.

CSV File Structure

You can create a CSV file with categorization data from scratch. Every new record (row) in the file must describe an infrastructure object and its categorization data.

The following columns are mandatory for every record:

- **Server** — name of the managed virtual infrastructure or backup server to which the object belongs.

- **ObjectType** — type of the object (possible values are *VirtualMachine*, *HostSystem*, *Storage*, *ClusterComputerResource*, *VeeamBpAgent*).

- **MoRef** — reference number of the object (for VMware vSphere), UUID or ID of the object (for Microsoft Hyper-V).

Other columns in the CSV file must be named as Business View categories. Category fields accept the following types of values:

- Name of a group within the category to which the infrastructure object belongs.

- Empty field — if the object does not belong to any group within the category.

- *Excluded* — if the object must be excluded from categorization.

The following table shown as example of a CSV file for VMware vSphere VMs.

Server	ObjectType	MoRef	Category1
server.local	VirtualMachine	vm-01	Group1
server.local	VirtualMachine	vm-02	Excluded

Single-Parameter Categorization

Single-parameter categorization is based on infrastructure object properties specified within a hypervisor. When you select a property as a categorization condition, Veeam ONE Client automatically creates groups for each unique value of the selected property. All objects with the same property value will fall into one group.
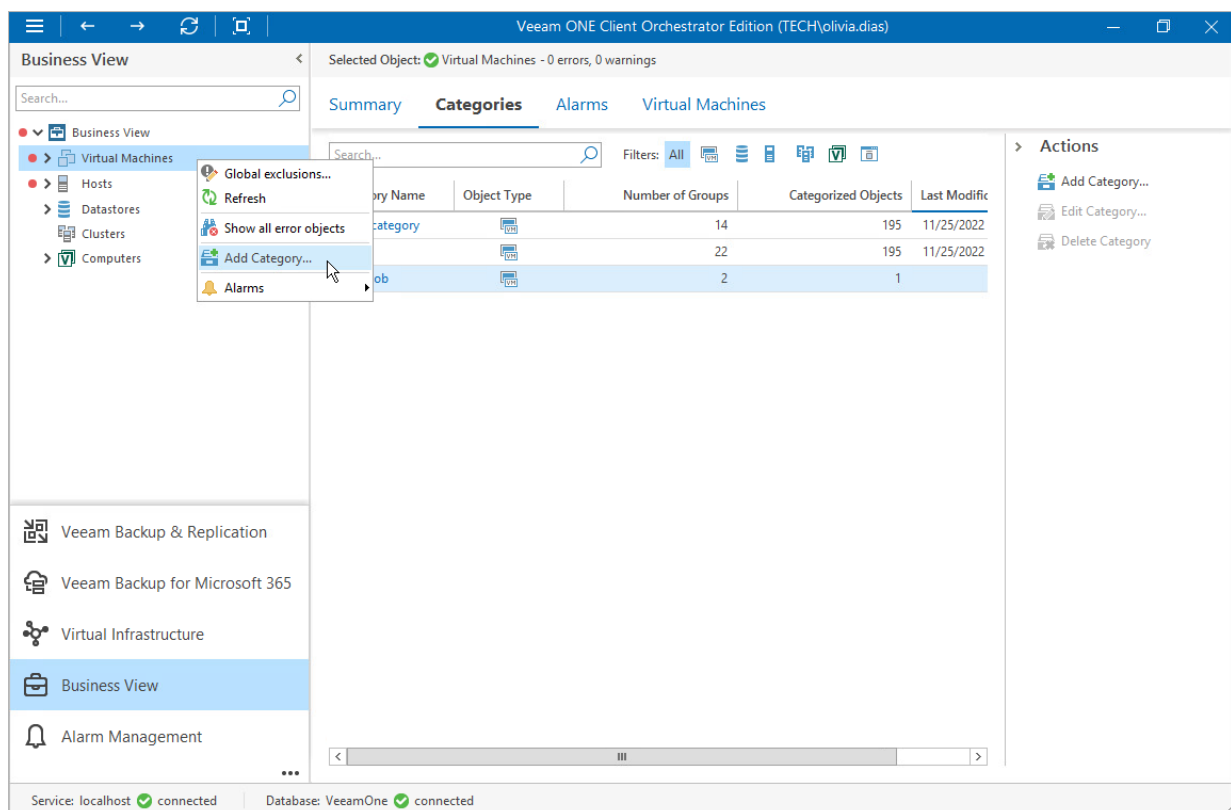
Groups created using the single property method have dynamic membership. If the property value changes, the objects can be moved into another group or excluded from categorization when the next data collection runs.

For example, you can categorize VMs based on their power state to include only powered on VMs into a plan. After data collection, Veeam ONE Client will create three groups: **Powered On**, **Powered Off** and **Suspended**. If a VM power state changes, this VM will be moved into another group next time data collection runs.

To categorize objects using a single property:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. Launch the **Add Category** wizard:

    a. In the information pane, switch to the **Categories** tab.

    b. In the **Actions** pane, click **Add Category**.

    Alternatively, in the **Business View** tree, right-click the main node and select **Add Category**.

4. At the **Name and Object Type** step of the wizard, enter a category name and an object type.

5. At the **Categorization Method** step of the wizard, select the **Single parameter** option.

6. At the **Grouping Criteria** step of the wizard, select an object property.

7. Click **Save**.

Veeam ONE Client will create an individual group for each unique value of the selected property.

Multiple-Condition Categorization

Multiple-condition categorization allows you to combine multiple conditions that evaluate infrastructure object properties for creating groups. This method makes categories highly customizable, as each group within a category can have its own condition. Conditions can be based on different object properties and logical operators. For one group, you can specify one or more conditions and link them with the **AND** or **OR** operator.

Groups created with the multiple-condition method have dynamic membership. If the property value changes, the objects can be moved into another group or excluded from categorization when the next data collection runs.

For example, you can categorize VMs based on their power state, datacenter name and guest OS at the same time. If any of these properties change, the VM will be moved into another group or excluded from categorization.

To create groups using multiple conditions:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. Launch the **Add Category** wizard:

   a. In the information pane, switch to the **Categories** tab.

   b. In the **Actions** pane, click **Add Category**.

   Alternatively, in the **Business View** tree, right-click the main node and select **Add Category**.

4. At the **Name and Object Type** step of the wizard, enter a category name and an object type.

5. At the **Categorization Method** step of the wizard, select the **Multiple conditions** option.

6. At the **Grouping Criteria** step of the wizard, click **Add** to create groups based on multiple conditions. The **Add Group** wizard will open.

7. At the **Group Name** step of the **Add Group** wizard, enter a group name and description.

8. At the **Grouping Conditions** step of the **Add Group** wizard, set up categorization conditions:

   o From the **Property** drop-down list, select an object property.

   The list contains all infrastructure object properties that Veeam ONE collects from a hypervisor.

o   From the **Operator** drop-down list, select a conditional operator.

The list contains the following operators: *Equals, Does not equal, Starts with, Ends with, Contains, and so on.*

o   In the **Value** field, specify a value that will be checked in the condition.

The condition will be evaluated against discovered objects. To add another condition, click **Add Condition**.

By default, conditions are linked by the **AND** operator. That is, an object falls into a group when all specified conditions are met. You can change this behavior by linking conditions with the **OR** operator. In this case, an object will fall into a group when a condition for any of the linked rules is met.

For example, you can create a group which will include VMs based on their power state, datacenter name and guest OS. If you want the group to include all powered on VMs that reside in the datacenter *Atlanta* or run Linux as their guest OS, you must link these conditions. The second and the third conditions will be linked to each other with the **OR** operator. The first condition will be linked to them with the **AND** operator.

> **NOTE**
>
> Linking supports 3 levels of nesting.

To link conditions:

a. Select check boxes next to the necessary conditions and click **Link**.

b. In the **Rule condition** window, select a link operator and click **OK**.

9. The **Notifications** step of the **Add Group** wizard does not apply to the categorization process in Orchestrator. Click **Save** to save the group configuration.

Group settings will appear in the **Add Category** wizard.

10. Repeat steps **6-9** for each group you want to configure in the category, and click **Save**.

Categorization with Grouping Expressions

Grouping expressions are used to find infrastructure objects that share common properties. When you configure categorization with grouping expression, Veeam ONE Client creates a set of groups, and includes objects with matching attributes into these groups.

Groups created using the grouping expression method have dynamic membership. If the property value changes, the objects can be moved into another group or excluded from categorization when the next data collection runs.

For example, you can categorize VMs based on their memory value using the following expression:

```
CASE
WHEN Memory >= "2048"
THEN "More than 2GB"
ELSE "Less than 2GB"
END
```

Veeam ONE Client will create two groups: **More than 2GB**, and **Less than 2GB**. If the amount of memory allocated to a VM changes, this VM will be moved into another group next time data collection runs.

To categorize infrastructure objects using a grouping expression:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. Launch the **Add Category** wizard:

    a. In the information pane, switch to the **Categories** tab.

b. In the **Actions** pane, click **Add Category**.

Alternatively, in the **Business View** tree, right-click the main node and select **Add Category**.
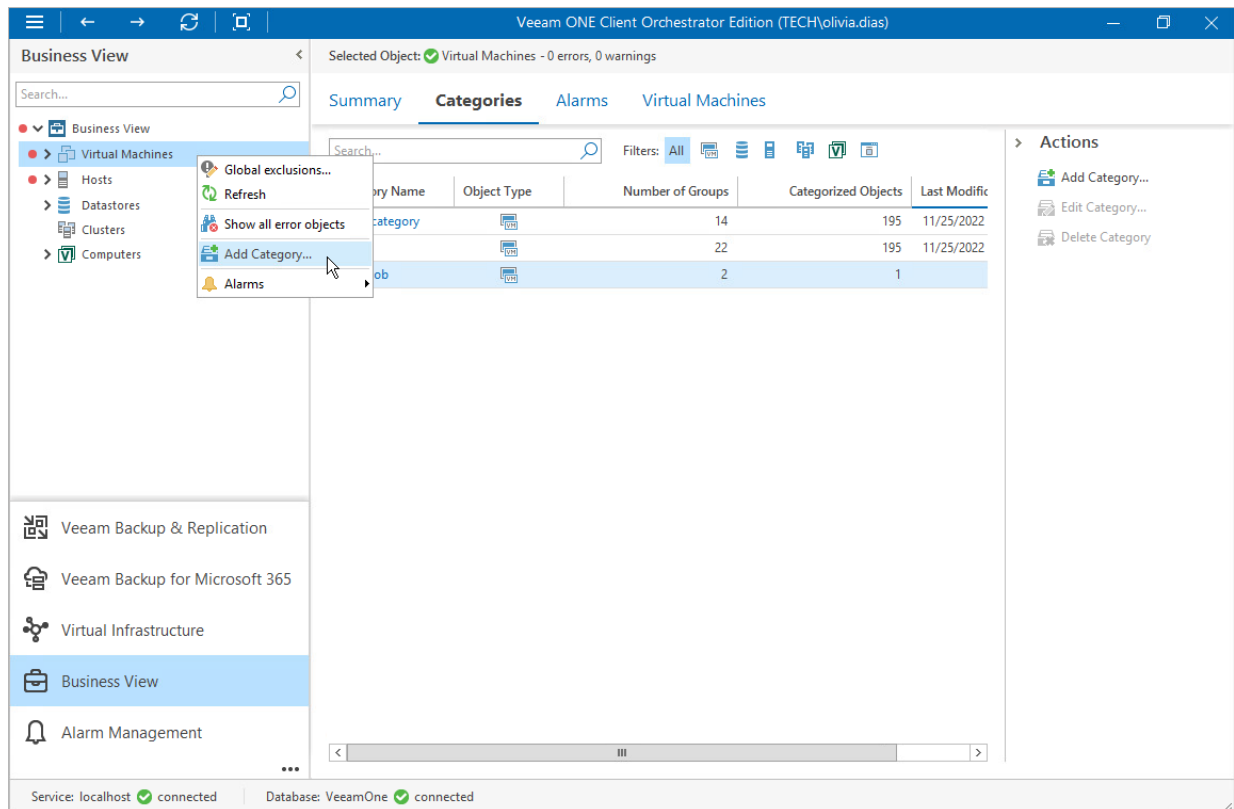
4. At the **Name and Object Type** step of the wizard, enter a category name and an object type.

5. At the **Categorization Method** step of the wizard, select the **Grouping expression** option.

6. At the **Grouping Criteria** step of the wizard, specify an expression that Veeam ONE must use to create groups and distribute infrastructure objects in these groups.

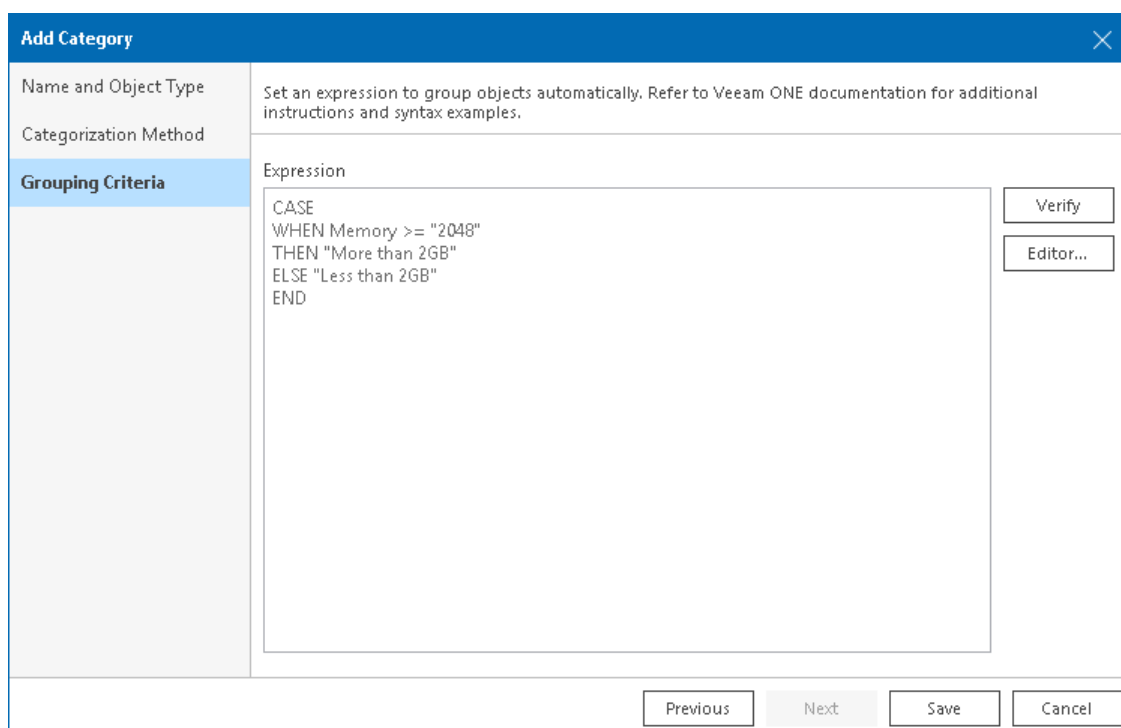   a. Click **Editor** to open the **Grouping Expression Editor**.

b. In the menu of the **Grouping Expression Editor**, double-click an item to add it to the **Expression** field.
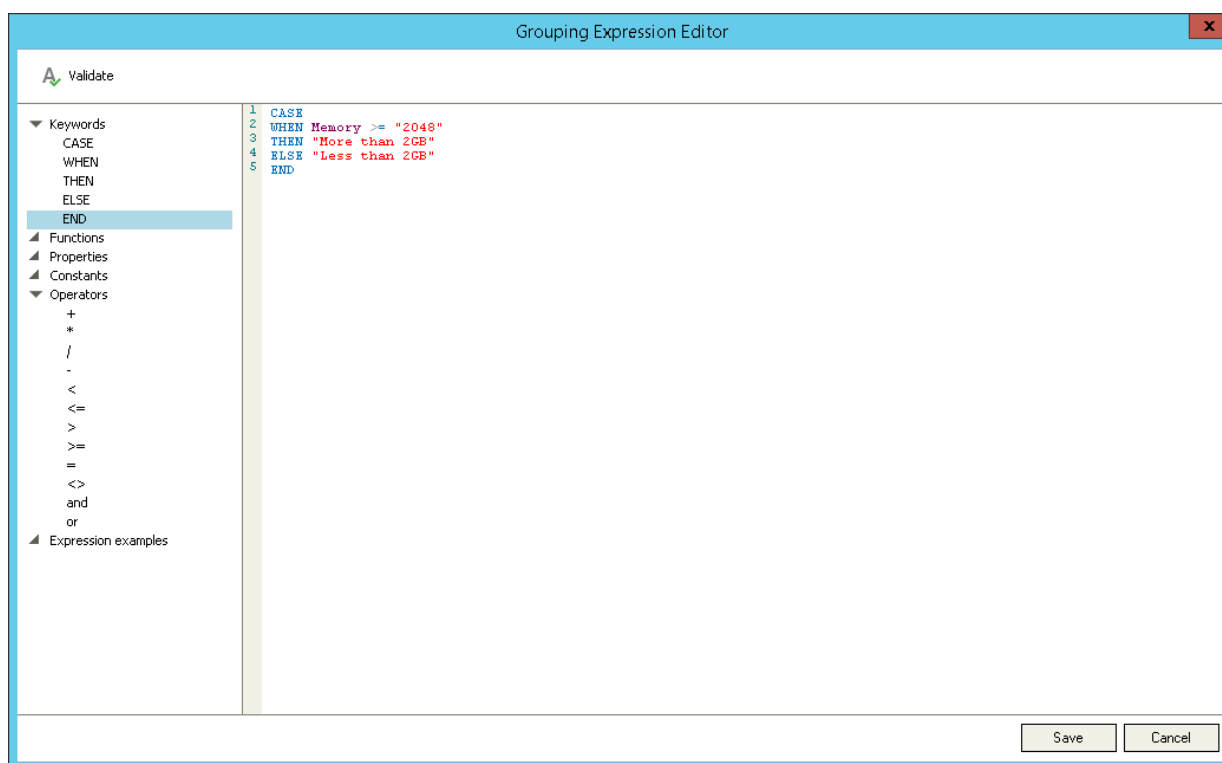
c. Click **Save** to save the expression and exit the editor.

The expression will appear in the **Expression** field at the **Grouping Criteria** step of the **Add Category** wizard.

For details on the syntax of grouping expressions and examples, see the Veeam ONE Monitoring Guide, section Appendix B. Grouping Expressions Syntax and Examples.

7. Click **Verify** to validate the expression. Click **OK** to acknowledge the verification.

8. Click **Save**.

Veeam ONE Client will run the expression and create groups based on the specified properties.
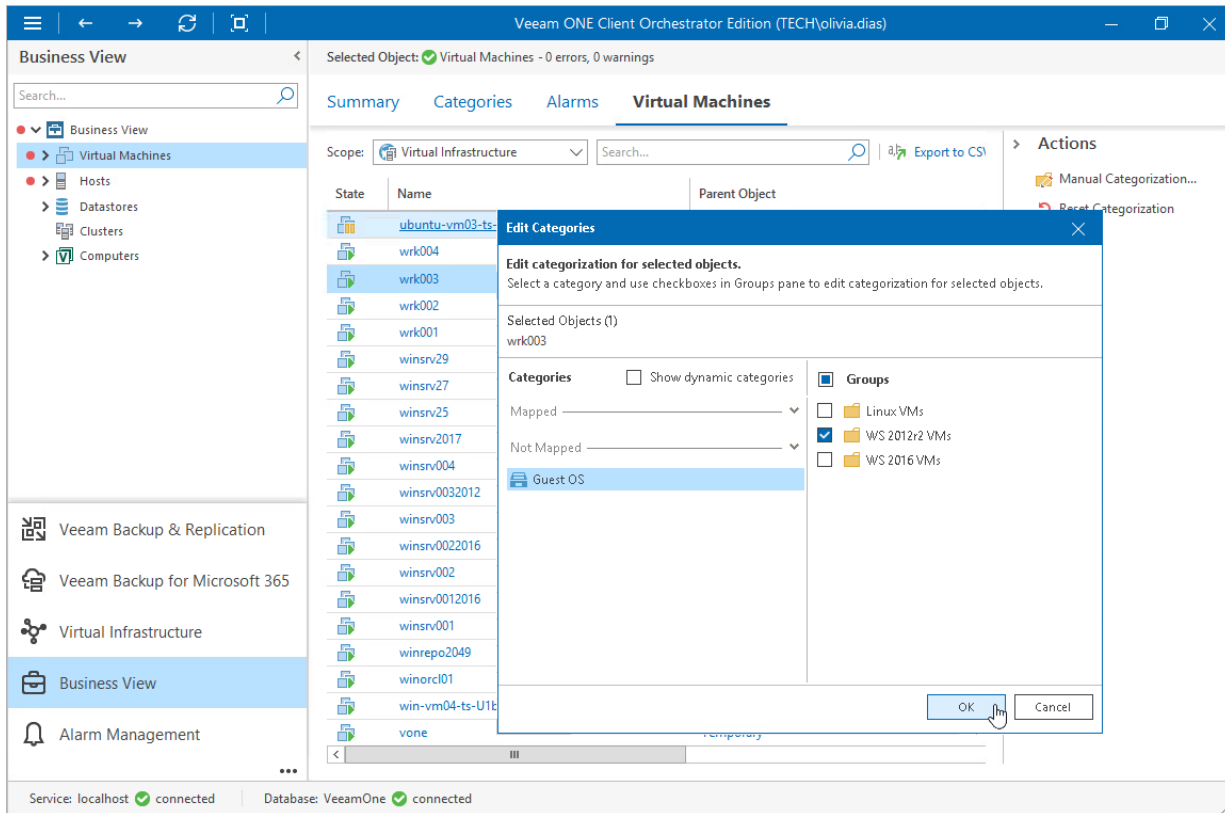
Assigning Categorization Values Manually

You can manually include one or more virtual or physical infrastructure objects to groups in static categories — categories created with multiple-condition method and imported manually from a CSV file. When you map an object to a group, Veeam ONE Monitor adds the **Manual selection** condition to the group configuration. The name of an object acts as condition value. Mapped objects have static group membership, that is, they remain in the group until you manually reset categorization values.

Assigning Group Values

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. In the **Business View** tree, select the necessary object type — Virtual Machines, Hosts, Datastores, Clusters or Computers.

4. Switch to the tab with the name of the object: *Virtual Machines*, *Hosts*, *Datastores*, *Clusters*, *Computers*.

5. Select objects that you want to add to a group.

   To find the necessary objects, you can use the scope drop-down list and search field at the top of the objects list.

6. In the **Actions** pane, click **Manual Categorization**.

   Alternatively, right-click the category and select **Manual categorization** from the shortcut menu.

7. In the **Edit Categories** window, select a category and groups to which you want to add objects.

8. The **Categories** section lists static categories to which you can add objects. To display all categories for the selected object type, select the **Show Dynamic Categories** check box.

9. Click **OK** to save the settings.

Resetting Categorization Values

You can remove objects from categories and groups to which you manually added these objects:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. In the **Business View** tree, select the necessary object type — Virtual Machines, Hosts, Datastores, Clusters or Computers.

4. Switch to the tab with the name of the object: *Virtual Machines*, *Hosts*, *Datastores*, *Clusters*, *Computers*.

5. Select objects that you want to add to a group.

   To find the necessary objects, you can use the scope drop-down list and search field at the top of the objects list.

6. In the **Actions** pane, click **Reset Categorization**.

   Alternatively, right-click the category and select **Reset categorization** from the shortcut menu.

7. In the **Manual categorization reset** window, click **OK** to confirm object removal.

> **IMPORTANT**
>
> If you reset manual categorization for an object that has been manually added to a group included in a plan, this object will be removed from the plan as soon as the plan will acquire the *DISABLED* mode.

Editing Categories

You can edit categories created in Veeam ONE Client as well as predefined categories and categories imported manually from a CSV file.

To edit a category:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. In the information pane, switch to the **Categories** tab.

4. Select a category that you want to edit.

   To find the necessary category, you can use filters and the search field at the top of the categories list.

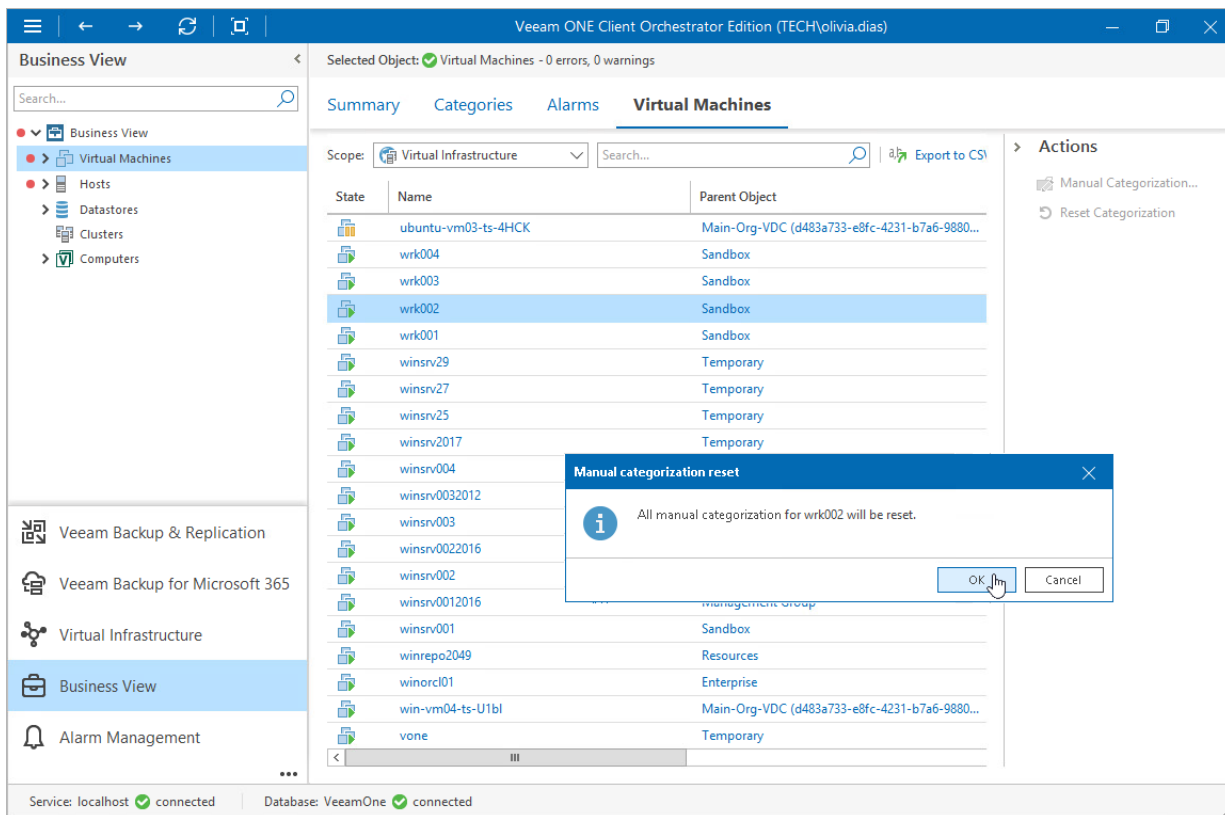5. In the **Actions** pane, click **Edit Category**.

   Alternatively, right-click the category and select **Edit Category** from the shortcut menu.

6. Change the category settings. To learn how to configure category settings, see Categorization Model and Methods.

> **IMPORTANT**
>
> If you delete a group included in a plan, this group of objects will be removed from the plan as soon as the plan will acquire the *DISABLED* mode.
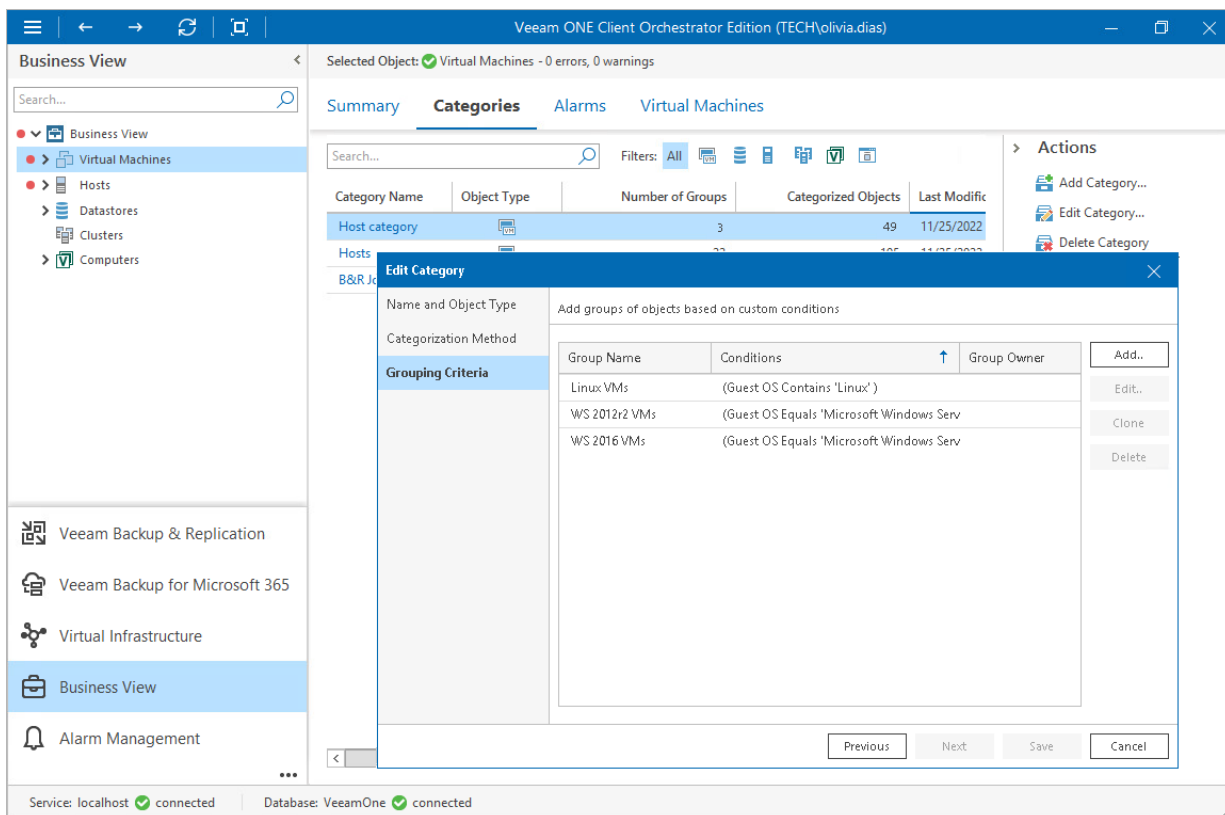
Deleting Categories

You can delete categories created in Veeam ONE Client as well as predefined categories and categories imported manually from a CSV file. When you delete a category, objects from this category remain in your infrastructure.

To delete a category:

1. Open Veeam ONE Client.

2. In the inventory pane, navigate to the **Business View** node.

3. In the information pane, switch to the **Categories** tab.

4. Select a category that you want to delete.

   To find the necessary category, you can use filters and the search field at the top of the categories list.

> **IMPORTANT**
>
> If you delete a category that contains groups included in a plan, these groups of objects will be removed from the plan as soon as the plan will acquire the *DISABLED* mode.

5. In the **Actions** pane, click **Delete Category**.

   Alternatively, right-click the category and select **Delete Category** from the shortcut menu.