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Contacting Veeam Software

At Veeam Software we value the 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, please visit our Customer Center Portal at www.veeam.com/support.html 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 offices location, please visit www.veeam.com/contacts.html.

Online Support

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

- Full documentation set: www.veeam.com/documentation-guides-datasheets.html
- Community forum at forums.veeam.com
About This Document

This document describes the features included in the Management Pack for Veeam Backup & Replication. It also provides usage examples and gives step-by-step instructions that will help you better understand how to install the Management Pack and monitor your Veeam backup infrastructure, services and jobs in Microsoft System Center Operations Manager.

Document Revision History

<table>
<thead>
<tr>
<th>Revision #</th>
<th>Date</th>
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<tr>
<td>Revision 3</td>
<td>04/10/2019</td>
<td>Update for Veeam Management Pack 8.0 – Update 6 for System Center: System Requirements.</td>
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<tr>
<td>Revision 1</td>
<td>03/06/2018</td>
<td>Initial version of the document for Veeam Management Pack 8.0 – Update 5 for System Center.</td>
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Welcome to 
MP for Veeam Backup & Replication


Key Features and Licensing

The MP for Veeam Backup & Replication has two key feature sets, which are licensed differently:

- **Monitoring**: real-time alerts in the Ops Mgr console on the status of Veeam Backup & Replication jobs, and the health, performance and availability of the Veeam backup infrastructure — services, repositories, proxies, and WAN accelerators.

  Veeam MP 8.0 introduces new monitoring features for Veeam Backup & Replication infrastructure that allow you to track: job RPO compliance, failover transfer of VM disks, status of job transport mode, and versions of deployed backup infrastructure components. For more information, see Appendix A.

- **Reporting**: a set of sophisticated reports in the Ops Mgr data warehouse analyzing which virtual machines are protected by backups and replicas, tracking performance of backup proxies and repositories, using trending to forecast repository free space, viewing the history of restore operator activity, assessing VM configuration before backup and much more.

  Veeam MP 8.0 introduces new reports for Veeam Backup & Replication infrastructure: Job Configuration Change Tracking, Backup Infrastructure Assessment, VM Backup Status and Delegated Restore Permissions Overview. These reports help you track job modification changes, analyze configuration of your backup environment, review daily backup status for all protected VMs, and obtain a list of restore permissions configured in Veeam Backup Enterprise Manager. For more information, see section Reporting.

The real-time monitoring features of the MP for Veeam Backup & Replication are free-of-charge and will operate stand-alone.

A free 30-day trial license is available. For details please visit the Veeam MP page on veeam.com.

<table>
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<th>Features</th>
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<th>Without Veeam MP installed</th>
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</thead>
<tbody>
<tr>
<td>Veeam Backup monitoring</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Veeam Backup reporting</td>
<td>✓</td>
<td>×</td>
</tr>
</tbody>
</table>

Licensing

The MP for Veeam Backup & Replication is supplied as part of the Veeam MP for System Center package.

The real-time monitoring features of the MP for Veeam Backup & Replication are free-of-charge and will operate stand-alone with no license required.
Data Collection

To collect data for monitoring and reporting on the Veeam Backup & Replication infrastructure, the Ops Mgr agent must be deployed on the following servers:

- Veeam Backup & Replication server
- Veeam Backup Enterprise Manager server
- Any server running a Veeam Backup & Replication component: proxies, repositories, and WAN accelerators (optional, needed to gather performance data and service availability details)

For a complete list of the MP for Veeam Backup & Replication alerts and reports, refer to the MP for Veeam Backup & Replication Online Reference.

How to Get
MP for Veeam Backup & Replication

System Requirements

Before you install MP for Veeam Backup & Replication, check the following prerequisites.

NOTES:

1. Only English (US) Windows OS is fully QA tested for Veeam components. However, Veeam will support customers using any other-language OS, to reproduce problems and establish if root cause is a language-related issue.

2. Any system configuration which is not supported by the platform vendor (Microsoft, VMware) is also unsupported by Veeam.

Microsoft System Center Operations Manager

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
</tr>
</thead>
</table>
| Ops Mgr       | • Microsoft System Center Operations Manager 2019  
                 • Microsoft System Center Operations Manager 1807  
                 • Microsoft System Center Operations Manager 1801  
                 • Microsoft System Center Operations Manager 2016  
                 • Microsoft System Center Operations Manager 2012 R2  
                 • Microsoft System Center Operations Manager 2012 SP1  

**Note:** Make sure that the latest available updates for System Center Operations Manager are installed.

<table>
<thead>
<tr>
<th>Additional Software</th>
<th>Ops Mgr Reporting server and Data Warehouse (required for reporting).</th>
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Veeam Management Pack for System Center

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
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</thead>
<tbody>
<tr>
<td>Version</td>
<td>Veeam Management Pack 8.0 for System Center</td>
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</table>
## Veeam Backup & Replication

<table>
<thead>
<tr>
<th>Specification</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Version</strong></td>
<td>Veeam Backup &amp; Replication 7.0 Patch 2 (and later)</td>
</tr>
</tbody>
</table>
| **Editions**  | • Veeam Backup & Replication Standard  
• Veeam Backup & Replication Enterprise  
• Veeam Backup & Replication Enterprise Plus |
| **Note**: Monitoring and reporting for Veeam Backup Free Edition is not supported. |
| **Additional Software** | • Veeam Backup & Replication server that manages jobs must have the Veeam Backup & Replication PowerShell SDK component installed.  
• Ops Mgr agent must be installed on Veeam Backup & Replication servers, Veeam Backup Enterprise Manager server, backup proxies, backup repositories, WAN accelerators. |
| **Note**: For system requirements for Ops Mgr agents, please refer to the Ops Mgr documentation. |
Installing MP for Veeam Backup & Replication

Before you begin installation, make sure that your environment meets the prerequisite conditions described in section System Requirements.

To install the MP for Veeam Backup & Replication, follow these steps:

1. Install Veeam Management Pack for System Center.
2. Deploy Ops Mgr agents on any server running Veeam Backup & Replication components.
3. Configure the Ops Mgr agents on Veeam Backup & Replication servers and backup infrastructure components to allow Proxying.

Step 1. Install Veeam Management Pack for System Center

Install a set of discovery, monitoring and reporting Veeam management packs, as described in Veeam MP for VMware Installation Guide or Veeam MP for Hyper-V User Guide.

Step 2. Deploy Ops Mgr Agents

Install Ops Mgr agents on all servers that host any Veeam Backup & Replication infrastructure components:

- The server where Veeam Backup & Replication application is installed.
- The server where Veeam Backup Enterprise Manager is installed.
- Any server which runs Veeam Backup & Replication component — source Hyper-V hosts and offhost backup proxies, backup repositories, and WAN accelerators.

For details on installing Ops Mgr agents, see Microsoft technical documentation.
Step 3. Configure Agent Proxy Settings

The Ops Mgr agent running on machines that host Veeam Backup & Replication components must be granted the privilege to insert new objects into Ops Mgr as the Veeam Backup & Replication topology is discovered. This is known as *Proxying*. Note that Proxy should also be applied if any of the Veeam Backup & Replication components is running on the Ops Mgr Management server.

To grant this privilege, do the following.

Configure Proxy Settings for an Agent

1. Open the Ops Mgr console using the account with administrative rights.
2. Go to the **Administration** section.
3. Select the **Device Management > Agent Managed** node.
4. In the right pane, for each agent server where a Veeam Backup & Replication component runs, double-click to open **Agent Properties** dialog.
5. Go to the **Security** tab and make sure the **Allow this agent to act as a proxy and discover managed objects on other computers** check box is selected.
6. Click **OK**. Allow several minutes for the setting change to propagate through the system.
Configure Proxy Settings for a Management Server

Proxy should also be enabled for Management Servers, if any Veeam Backup & Replication component is installed there. To enable Proxy for a Management Server:

1. Open the Ops Mgr console using the account with administrative rights.
2. Go to the **Administration** section.
3. Select the **Device Management > Management Servers** node.
4. In the right pane, double-click on the Management Server to open the **Management Server Properties** dialog.
5. Go to the **Security** tab and make sure the **Allow this server to act as a proxy and discover managed objects on other computers** check box is selected:

   6. Click **OK**. Allow several minutes for the setting change to propagate through the system.
Tuning Veeam MPs

It is highly recommended to deploy these management packs together:

- **For VMware vSphere environment**: MP for Veeam Backup & Replication and the Veeam MP for VMware
- **For Microsoft Hyper-V environment**: MP for Veeam Backup & Replication and the Veeam MP for Hyper-V

Deploying MPs together provides a complete monitoring and reporting solution for both the virtual infrastructure, and the Veeam backup infrastructure which is protecting it. However when both MPs are present, there are interactions which require tuning.

Tuning Veeam MP for VMware

During normal operations Veeam Backup & Replication leverages temporary objects, such as VM snapshots during the backup process, or temporary datastores for the SureBackup recovery verification. Such temporary objects may have non-standard performance or status which may in turn cause unrequired alerts from the Veeam MP for VMware.

Therefore some tuning of the Veeam MP for VMware is required to ensure that alerts are triggered only for genuine issues:

1. Check and adjust overrides.
2. Adjust snapshot Age/Size thresholds for VM replicas.
3. Capture undeleted temporary snapshots.

Step 1. Check and Adjust Overrides

A pre-built MP of overrides is available to tune the Veeam MP for VMware when MP for Veeam Backup & Replication is present. The overrides MP is available on the installation media in the Veeam.Virt.Extensions.RequiredOverrides.xml file. After installation, it is recommended to review the overrides and adjust them if required.

A. Duplicate MAC Addresses for VM Replicas

The replica virtual machine created by a replication job will necessarily have the same MAC address(es) as the source VM. This is by design and has no impact in the environment (as the replica should never be running at the same time as the source); however, VMware vCenter Server will throw an error event for the duplicate MAC, and this in turn will cause an alert in the MP for VMware.

The Veeam Backup Overrides MP contains an override for the *Veeam VMware: Virtual Machine Error* alert rule. The event concerning duplicate MAC address is excluded for all VMs in the *Veeam Backup and Replication replica VMs (VMware)* group. This group has dynamic membership and includes all VMs that have the _replica suffix appended to the VM display name (this is the default suffix used in replication jobs). If you use a non-default suffix for your replicas, you can either modify the group membership rule to use your chosen suffix, or explicitly add your replica VMs to the group.

**NOTE:**

Group overrides will take precedence over class overrides. Therefore, if you wish to apply any other global overrides for VMs to the *Veeam VMware: Virtual Machine Error* event rule, do not forget to also apply the same override to the *Veeam Backup and Replication replica VMs (VMware)* group.
B. Discovery of VMs and datastores created by SureBackup jobs

During recovery verification, a SureBackup job creates temporary objects, such as NFS datastores and verified VMs that are run directly from the compressed deduplicated backup file.

Veeam Backup Overrides exclude these temporary objects from discovery:

- Temporary datastores whose name starts with "Veeambackup" are excluded from the Veeam Stage 2 – Datastore discovery.
- Temporary VMs created during verification process that reside on datastores whose name starts with "Veeambackup" are excluded from the Veeam Stage 2 – Virtual Machine discovery.

If you want to exclude other VMs or datastores from discovery, you can adjust override properties.

Step 2. Adjust Snapshot Age/Size Thresholds for VM Replicas

For VMware VM replicas created with replication jobs, Veeam Backup & Replication maintains a chain of snapshots, where each snapshot serves as a restore point. In case the chain includes large and/or old snapshots, the Veeam VMware: Virtual Machine Snapshot Usage Analysis monitor can trigger repetitive alerts for VMware VM replicas. To eliminate such alerts, the monitor is disabled by default for all VMs in the Veeam Backup and Replication replica VMs (VMware) group.

However, if necessary you can enable the Veeam VMware: Virtual Machine Snapshot Usage Analysis monitor for specific VM replicas.

Step 3. Capture Undeleted Temporary Snapshots

Sometimes vCenter Server may fail to remove a temporary VM snapshot created by Veeam Backup & Replication. For certain high-priority or production systems, you may want to maintain the virtual environment completely snapshot-free. In this case, you can adjust the age threshold of the Veeam VMware: Virtual Machine Snapshot Usage Analysis monitor so that it triggers an alert if any snapshot is left after the backup job completion.

1. In Ops Mgr, create a group that will include the necessary protected VMs.
2. Override the Veeam VMware: Virtual Machine Snapshot Usage Analysis snapshot age threshold for the VMs group.
Tuning Veeam MP for Hyper-V

During normal operations Veeam Backup & Replication leverages temporary objects, such as VM checkpoints or temporary VMs for the SureBackup recovery verification. Such temporary objects may have non-standard performance or status which may in turn cause unrequired alerts from the Veeam MP for Hyper-V.

Therefore some tuning of the Veeam MP for Hyper-V is required to ensure that alerts are triggered only for genuine issues:

1. Check and adjust overrides.
2. Adjust snapshot Age/Size thresholds.

Step 1. Check and Adjust Overrides

A pre-built MP of overrides is available to tune the Veeam MP for Hyper-V when MP for Veeam Backup & Replication is present. The Veeam Hyper-V Required Overrides MP is available on the installation media in the Veeam.Virt.Extensions.HyperV.Required Overrides.xml file.

After installation, it is recommended to review the overrides and adjust them if required.

Integration Services status for verified VMs

During SureBackup recovery verification, the Veeam HyperV: VM Integration Services Status monitor can trigger repetitive alerts for the proxy appliance, VMs in the application group and verified VMs.

To eliminate such alerts, the Veeam HyperV: VM Integration Services Status monitor is disabled by default for all VMs in the Veeam Backup and Replication Virtual Labs (Hyper-V) group. This group has dynamic membership and includes all VMs connected to the isolated networks in the virtual lab. However, if necessary you can enable the Veeam HyperV: VM Integration Services Status monitor for specific VMs.

Checkpoint analysis for verified VMs

During SureBackup recovery verification, Veeam Backup & Replication automatically boots a VM from the backup in the isolated environment (virtual lab), initiates creation of a protective snapshot for the VM, performs tests against it, then powers the VM off and creates a report on the VM backup state.

The Veeam Hyper-V: VM Checkpoint Analysis monitor can trigger unwanted alerts for checkpoints produced during recovery verification process. To eliminate such alerts, the Veeam HyperV: VM Checkpoint Analysis monitor is disabled by default for all VMs in the Veeam Backup and Replication Virtual Labs (Hyper-V) group. However, if necessary you can enable the Veeam HyperV: VM Checkpoint Analysis monitor for specific VMs.
Step 2. Adjust Snapshot Age/Size Thresholds

For Hyper-V VM replicas created with replication jobs, Veeam Backup & Replication 8.0 produces a full replica and a chain of checkpoints. The Veeam Hyper-V: VM Checkpoint Analysis monitor was not designed to be triggered for checkpoints produced during replica creation, and will fire alerts for Hyper-V VM replicas.

To eliminate such alerts, the Veeam Hyper-V Required Overrides MP includes an override that allows you to disable the Veeam Hyper-V: VM Checkpoint Analysis monitor for the Veeam Backup and Replication replica VMs (Hyper-V) group. This group has dynamic membership and includes all VMs that have the _replica suffix appended to the VM display name (this is the default suffix used in replication jobs).

For VMs with a large number of disk writes, the checkpoints can grow large and also cause the Veeam Hyper-V: VM Checkpoint Analysis monitor to trigger repetitive alerts. To eliminate alerts for such VMs, you can disable the monitor for the Veeam Backup and Replication replica VMs (Hyper-V) group: use a non-default suffix for your replicas to either modify the group membership rule to use your chosen suffix, or explicitly add your replica VMs to the group.
Upgrading MP for Veeam Backup & Replication

To upgrade from MP 7.0 or 7.0 R2 for Veeam Backup & Replication to MP 8.0, import new Veeam management packs from the MP .zip archive, as described in the Veeam MP for VMware Installation Guide or Veeam MP for Hyper-V User Guide. For the full list of management packs included in the archive, see Veeam MP Release Notes.

Uninstalling MP for Veeam Backup & Replication

MP for Veeam Backup & Replication is uninstalled as a part of Veeam Management Pack for System Center.

For instructions on uninstalling Veeam Management Pack, see the Veeam MP for VMware Installation Guide or Veeam MP for Hyper-V User Guide.
Monitoring with MP for Veeam Backup & Replication

This section details the monitoring capabilities of MP for Veeam Backup & Replication, including:

- Topology Diagram Views
- State Views
- Performance View
- Monitors
- Alerts and Knowledge Base
- Tasks

Veeam Backup and Replication View Folder

The MP for Veeam Backup & Replication includes a comprehensive set of views available under the **Veeam Backup and Replication** folder in the Ops Mgr console **Monitoring** tree. The folder includes views for alerts, performance, state and diagrams. Subfolders allow drill-down into filtered views for backup servers and jobs.
Morning Coffee Dashboard

The **Morning Coffee Dashboard** is the first thing to see once you get to work. This dashboard provides at-a-glance real-time overview of your infrastructure.

The dashboard tracks the state of Veeam Backup Enterprise Manager servers (if present), Veeam Backup & Replication servers, Veeam scale-out backup repositories, backup repositories, backup proxies, all configured jobs, computers protected by Veeam Agent for Microsoft Windows (further referred to as Veeam backup agents), storage and the overall resource utilization, and immediately displays these changes in a single view. The **Morning Coffee Dashboard** is available in the root Veeam Backup and Replication folder.

The **Health Status** pane shows discovered groups of backup infrastructure objects and the total number of objects in each group. For each group, the pane also displays a colored bar whose cells represent current health state of objects in that group:

- Green: an object is in the ‘Healthy’ state;
- Yellow: an object is in the ‘Warning’ state;
- Red: an object is in the ‘Critical’ state.

The **Resource Usage** pane shows total amount of resources in the discovered backup infrastructure and displays current resource usage (in percentage) as colored pie charts. Colors on the charts depend on whether resource usage thresholds are breached.

The default configuration of the Morning Coffee widget can be customized. For details on changing widget settings, see section **Personalizing Morning Coffee Widget**.
Personalizing Morning Coffee Widget

To change the default settings for the Morning Coffee widget:

1. Open the Morning Coffee Dashboard.
2. Click the gear icon to the right of the widget name and select **Personalize**.
3. Specify values for the **CPU**, **RAM** and **Storage** thresholds.

**NOTE:**
Configured thresholds will apply only to the Resource Usage pane of the widget.

Click **Finish**.

As a result, the **Resource Usage** pie charts on the heatmap will be highlighted as follows:

- Chart slices that display free resources left will be highlighted with **Gray**.
- If a **Warning** resource usage threshold is breached, a chart slice will be highlighted with **Yellow**.
- If a **Critical** resource usage threshold is breached, a chart slice will be highlighted with **Red**.
- If none of thresholds is breached, a chart slice will be highlighted with **Green**.
To return back to the default widget settings, choose to personalize the widget and click **Revert**.
Topology Diagram Views

There are 2 pre-defined topology views available in the MP for Veeam Backup & Replication:

- **_Veeam Backup Enterprise Manager Topology_**
  - Veeam Backup Enterprise Manager
  - Veeam Backup & Replication servers
  - Veeam scale-out backup repositories
  - Veeam backup proxies
  - Veeam backup repositories
  - Veeam WAN accelerators
  - Veeam backup and replication jobs
  - Users who have specific portal roles in Veeam Backup Enterprise Manager

- **_Veeam Backup Infrastructure Services Topology_**
  - Veeam Backup Topology
  - Windows computers
  - Veeam Backup Enterprise Manager
  - Veeam Hyper-V Integration Service
  - Veeam Backup Proxy/Data Mover Service
  - Veeam Broker Service
  - Veeam Cloud Connect Service
  - Veeam Veeam Cloud Gateway Service
  - Veeam Mount Service
  - Veeam RESTful API Service
  - Veeam Tape Access Service
  - Veeam WAN Accelerator Service
  - Veeam vPower NFS Service
  - Veeam Installer Service
  - Veeam Guest Catalog Service

Screenshots illustrating these views are displayed in the following sections:

- **_Veeam Backup Enterprise Manager Topology_**
- **_Veeam Backup Infrastructure Services Topology_**
_Veeam Backup Enterprise Manager Topology_ shows the hierarchy of Veeam Backup & Replication infrastructure components, including Veeam Backup Enterprise Manager, Veeam Backup & Replication servers, scale-out backup repositories and their extents, backup proxies, repositories, WAN accelerators and all types of jobs. The topology also shows users who have _Portal Administrator, Restore Operator_ and _Portal User_ roles assigned in the Veeam Backup Enterprise Manager.

_Veeam Backup Infrastructure Services Topology_ shows the hierarchy of Veeam Backup & Replication services running on backup infrastructure machines (Windows computers).
State Views

A set of state views is available in view subfolders, showing the state and properties of discovered backup infrastructure components, including scale-out backup repositories and their extents, Veeam Backup & Replication services and jobs, and Veeam backup agents.

In addition, there are 8 grouped state views available, with group filtering using properties:

- **_All Backup Repositories as Extents by SOBR**
- **_All Jobs by Backup Server**
- **All Backup Jobs by Repository**
- **All Jobs by Type**
- **All Agents by Agent Version**
- **All Agents by Managed Application**
- **All Agent Jobs by Repository**
- **All Agent Jobs by Backup Job Target Type**
Example screenshot below shows all backup jobs, grouped by the backup server on which they were created.

Example screenshot below shows all Veeam backup agents grouped by the agent version.
Performance View

The **Backup Infrastructure Computers Performance** view allows you to track historical performance statistics for Windows computers that host any backup infrastructure components: Veeam Backup Enterprise Manager, backup server, backup proxy (VMware proxy, Hyper-V onhost and offhost proxy), backup repository or WAN accelerator.

The Backup Infrastructure Computers Performance view can help quickly detect performance bottlenecks in the course of backup data processing and transfer. All counters collected by the Ops Mgr agent will be available in this view.

Example screenshot below shows CPU and memory usage for a backup server.
Monitors

MP for Veeam Backup & Replication includes a set of availability and performance monitors to diagnose the state of Veeam Backup & Replication components and backup operations. Specifically, the MP for Veeam Backup & Replication monitors the following:

- Availability of core Veeam Backup & Replication services
- Network connection between backup infrastructure components
- Free space remaining on backup repositories
- Duration of backup jobs
- Success or failure of backup jobs
- Success of endpoint protection

For a complete list and description of MP for Veeam Backup & Replication monitors and thresholds, see Appendix A.

Alerts and Knowledge Base

The Alert views allow you to reveal issues and problems that can occur while protecting your virtual environment with Veeam Backup & Replication.

MP for Veeam Backup & Replication includes _All Active Alerts_ views under the Veeam Backup and Replication folder, Backup Servers, Jobs and Veeam Agents nodes of the monitoring tree, so that you can track issues and problems for various levels of your backup environment.
For each alert, you can view a knowledge base article that provides detailed information about the issue, possible cause description, resolution steps and links to external resources, such as community forums, Support Knowledge Base and documentation for Veeam Backup & Replication.

**Summary**
This monitors the status of the Veeam license installed on the Veeam Backup & Replication server. This license is defined as the total number of CPU sockets on physical vSphere and Hyper-V hosts that are backed up by Veeam Backup & Replication.

**Causes**
The license will expire soon. The MP for Veeam Backup & Replication will issue regular warnings as a countdown as soon as the expiry date approaches.

When the license expires, all backup and replication jobs will be disabled.

**Resolutions**
Contact your Veeam partner or sales representative to obtain an updated license file.

Use the *Alerts View* to see all current open issues for this object. Use the *Events View* to review any error and warning events for this object. Open a *Performance View* to see the performance metrics for this object and all contained objects. Open a *Diagram View* to analyze the relationships of this object to other components.

**External Knowledge Sources**
Check the Veeam Backup & Replication resources for more information, in particular:

- Community Forums
- Online Knowledge Base
- Technical Documentation
Tasks

MP for Veeam Backup & Replication includes tasks that allow you to restart Veeam Backup & Replication jobs from the Ops Mgr console. Tasks are targeted against the following types of jobs:

- Backup Job
- Replication Job
- SureBackup Job
- VM/File Copy Job

Tasks can be run in-context when a backup, replication, SureBackup or VM/File Copy job object is selected.

When you run a task against a job, MP for Veeam Backup & Replication triggers a PowerShell script on the Veeam Backup & Replication server that forces the job to restart. The result of the performed task can be viewed in the task output.
MP for Veeam Backup & Replication also includes tasks that allow you to start and end Maintenance Mode for a scale-out backup repository extent from the Ops Mgr console.

Tasks can be run in-context when a repository in the _All Backup Repositories as Extents by SOBR view is selected.
When you run a task against a scale-out backup repository extent, MP for Veeam Backup & Replication triggers a PowerShell script that forces the repository to enter or exit the Ops Mgr Maintenance Mode. The result of the performed task can be viewed in the task output.

### Requirements and Limitations

Before you run a task, check the following requirements and limitations:

- Veeam Backup & Replication server that manages jobs must have the Veeam Backup & Replication PowerShell SDK component installed.

- Run As account used to run the task must:
  - Have **sysadmin** privileges on the SQL Server that hosts the Veeam Backup & Replication database
  - Have the **Veeam Backup Operators** or **Veeam Backup Administrators** role assigned in Veeam Backup & Replication

  For details on roles and security levels in Veeam Backup & Replication, see section *Users and Roles* in the *Veeam Backup & Replication User Guide*.

- Tasks cannot be run against jobs with the continuous job schedule
Veeam Backup Reports

The Veeam Backup Reports management pack includes reports that help you monitor the overall state of your backup infrastructure and optimize backup protection of VMs.

This guide describes report sample usage only; if you want to get detailed report knowledge, including description of all report parameters, see MP for Veeam Backup & Replication Report Knowledge.

The Veeam Backup Reports management pack includes the following reports:

- Job Configuration Change Tracking
- Backup Infrastructure Assessment
- VM Backup Status
- Delegated Restore Permissions Overview
- Protected VMs
- Capacity Planning for Backup Repositories
- Backup and Replication Job Status
- Backup Copy Job Overview
- Restore Operator Activity
- Verified VMs
- Performance History Reports
- Top (Bottom) Reports
- vSphere VM Configuration Assessment Report
Job Configuration Change Tracking

Veeam Backup & Replication jobs can be configured in the Veeam Backup & Replication console, Veeam Backup Enterprise Manager web portal, using PowerShell or REST API. Veeam backup agent jobs can be configured in the Veeam Backup & Replication console, Veeam Backup Enterprise Manager web portal and Veeam Agent for Microsoft Windows Control Panel. In large environments with multiple backup administrators it is often hard to tell who changed job settings, when and what was changed.

The **Job Configuration Change Tracking** report helps you track job modification changes performed within the reporting period, identify who and when made changes to job configuration, and thus simplify troubleshooting.

**NOTE:**
The report allows you to track job configuration changes only for the **Standalone** and **Managed by agent** type of Veeam Backup & Replication servers.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **Job Configuration Change Tracking** report. Consider the following example:

> You need to show a list of job configuration changes that specific backup administrators made during this week.

**Step 1. Open Job Configuration Change Tracking Report**

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Job Configuration Change Tracking** report. Alternatively, right-click the **Job Configuration Change Tracking** report in the Reporting Pane and choose **Open**.
Step 2. Define Time Intervals

Next, you need to choose the time range for the report.

1. From the From list, choose This week > Monday.
2. From the To list, choose This week > Friday.

Step 3. Select Job Types

Select types of jobs that will be analyzed in the report. To follow this example, leave the Job Type list without changes to include all types of jobs in the report.

Step 4. Choose Report Scope

Select backup servers to include in the report. By default, the Scope section contains the Veeam Backup Server Group and Veeam Agents Group. To follow this example, leave the Scope section without changes.
Step 5. Select Users

Define accounts of backup administrators whose activity should be analyzed: select check boxes next to backup administrators whose activity should be analyzed, and clear the other check boxes.

**NOTE:**
- The N/A user name includes all users that could not be identified by Veeam MP.
- The list of user names may be empty in case no changes were made since Veeam management packs were imported.

Step 6. Run the Report

When finished, click **Run** to view the report.
Report Output

The report will display information on changes that the chosen administrators made during this week.

The **Job Modifications by User** pie chart will show the number of changes that each backup administrator made. The **Modifications by Day** chart will show how many changes in total all backup administrators made on each day of this week.

---

**Job Configuration Change Tracking**

**Report description**

**Report parameters**

**Summary**

![Pie chart showing Job Modifications by User and Modifications by Day graphs](image-url)
The details table will show the following information for each job configuration change:

<table>
<thead>
<tr>
<th>Backup Server</th>
<th>Name</th>
<th>Type</th>
<th>Property</th>
<th>Previous Setting</th>
<th>New Setting</th>
<th>Modification Time</th>
<th>Modified By</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Backup Job</td>
<td>Backup Job</td>
<td>Options_SI_gratOptions_SI_gratOptions_SI_SnapapoSI_replicabackupsource</td>
<td>False</td>
<td>True</td>
<td>2/13/2018 7:19:23 PM</td>
<td>HY1</td>
</tr>
<tr>
<td></td>
<td>Backup Job</td>
<td>Backup Job</td>
<td>Options_SI_gratOptions_SI_gratOptions_SI_SnapapoSI_replicabackupsource</td>
<td>False</td>
<td>True</td>
<td>2/13/2018 7:19:23 PM</td>
<td>HY1</td>
</tr>
<tr>
<td></td>
<td>Backup Job</td>
<td>Backup Job</td>
<td>'2' objects has been created for Backup Job 4</td>
<td>False</td>
<td>True</td>
<td>2/13/2018 7:17:55 PM</td>
<td>HY1</td>
</tr>
<tr>
<td></td>
<td>Backup Job</td>
<td>Backup Job</td>
<td>Backup Job 4 has been created</td>
<td>False</td>
<td>True</td>
<td>2/13/2018 7:17:55 PM</td>
<td>HY1</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool4</td>
<td>Backup Copy Job</td>
<td>IsActive</td>
<td>False</td>
<td>True</td>
<td>2/9/2018 8:01:31 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool4</td>
<td>Backup Copy Job</td>
<td>IsRunning</td>
<td>True</td>
<td>False</td>
<td>2/8/2018 8:01:57 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool5</td>
<td>Backup Copy Job</td>
<td>IsActive</td>
<td>False</td>
<td>True</td>
<td>2/14/2018 8:00:53 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool5</td>
<td>Backup Copy Job</td>
<td>IsRunning</td>
<td>True</td>
<td>False</td>
<td>2/8/2018 8:20:28 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool8</td>
<td>Backup Copy Job</td>
<td>IsActive</td>
<td>False</td>
<td>True</td>
<td>2/14/2018 8:02:15 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool9</td>
<td>Backup Copy Job</td>
<td>IsActive</td>
<td>False</td>
<td>True</td>
<td>2/13/2018 8:02:16 AM</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>Backup Copy Job pool9</td>
<td>Backup Copy Job</td>
<td>IsRunning</td>
<td>True</td>
<td>False</td>
<td>2/12/2018 8:01:45 AM</td>
<td>N</td>
</tr>
</tbody>
</table>
## Backup Infrastructure Assessment

The **Backup Infrastructure Assessment** report analyzes configuration of your backup environment against a set of recommended baseline settings and implementations, identifies VMs that cannot be properly backed up due to configuration limitations, verifies problem areas and helps mitigate potential issues.

The report takes into account the following criteria when analyzing backup configuration:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Application-aware image processing for Windows Servers</strong></td>
<td>The report searches for jobs that do not have the <em>Enable application-aware image processing</em> option enabled. Veeam Backup &amp; Replication uses application-aware image processing to create a transactionally consistent backup of a VM running VSS-aware applications (such as Active Directory, Microsoft SQL, Microsoft Exchange, SharePoint), without shutting the VM down. This technology ensures proper recovery of applications and application data.</td>
</tr>
<tr>
<td><strong>VMware Tools Quiescence for Linux/Unix VMs</strong></td>
<td>The report searches for jobs that do not have the <em>Enable VMware Tools quiescence</em> option enabled. When this option is enabled, VMware Tools will quiesce the file system of a running VM to ensure integrity of on-disk data during backup.</td>
</tr>
<tr>
<td><strong>VM VMware Tools status</strong></td>
<td>The report searches for VMs that do not have VMware Tools installed, running or up-to-date. To enable backup with application-aware image processing, it is required that guest OSes have VMware Tools installed and running.</td>
</tr>
<tr>
<td><strong>VMs Verification</strong></td>
<td>The report searches for VMs that are not included in SureBackup jobs. SureBackup and SureReplica technologies automate and simplify the recovery verification process - one of the most crucial parts of data management and protection. These technologies allow you to verify the recoverability of every VM backup and replica, without additional hardware or administrative time and effort.</td>
</tr>
<tr>
<td><strong>VMs failed over to network processing mode</strong></td>
<td>The report searches for VMs that caused a backup proxy to fail over to the Network Processing mode. The Network Processing mode can be used with any infrastructure configuration. However, when an alternative transport mode is applicable, the Network mode is not recommended because of the lowest data retrieval speed.</td>
</tr>
<tr>
<td><strong>Backup server protection</strong></td>
<td>The report searches for backup servers that do not run configuration backups on their database. If a Veeam Backup &amp; Replication server fails, you can re-deploy the server, restore configuration data from the backup and apply it to the re-built server. Alternatively, you can apply configuration data to any other Veeam Backup &amp; Replication server in your backup infrastructure. In terms of configuration, you can get a replica of the Veeam Backup &amp; Replication server you had, without additional adjustments and fine-tuning.</td>
</tr>
<tr>
<td><strong>SQL Server optimization</strong></td>
<td>The report searches for backup servers that run outdated versions of Microsoft SQL Server.</td>
</tr>
<tr>
<td><strong>Repository free space</strong></td>
<td>The report searches for repositories that have run out of free space.</td>
</tr>
<tr>
<td>Criterion</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Direct SAN access iSCSI</td>
<td>The report searches for backup proxies configured to use the Direct SAN Access mode working with iSCSI storage. To optimize performance of such backup proxies, you can tune Windows TCP settings as described in the report recommendations.</td>
</tr>
</tbody>
</table>

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **Backup Infrastructure Assessment** report. Consider the following example:

*You need to assess backup configuration and show recommendations for a specific backup server.*

Step 1. Open Backup Infrastructure Assessment Report

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Backup Infrastructure Assessment** report. Alternatively, right-click the **Backup Infrastructure Assessment** report in the Reporting Pane and choose **Open**.

Step 2. Choose Report Scope

Define the backup server to include in the report.

1. By default, the **Scope** section contains the **Veeam Backup Server Group**. Select the group and click **Remove**.

2. Click **Add Object**. In the **Add Object** window, click **Options**. In the **Options** window, click **Add**. In the **Class Name** search box, type **backup server** and click **Search**. Select the **Veeam Backup Server** class in the list of search results, click **Add** and click **OK**. In the **Options** windows, click **OK** to apply the filter. In the **Add Object** window, click **Search**. The search will return a list of objects that belong to the **Veeam Backup Server** class. Select the necessary server, click **Add** and click **OK**.

Step 3. Run the Report

When finished, click **Run** to view the report.
Report Output

The **Summary** pie chart will show the breakdown of assessment criteria statuses: the share of criteria that do not apply to your backup environment, passed criteria and criteria that require your attention.

![Summary pie chart showing categories: Failed, Not Required, Passed, Warning]

**Backup Infrastructure Assessment**

- **Report description**

- **Report parameters**

**Summary**

The details table will show the list of all criteria analyzed in the report and the verification status for each criterion.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Verification Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application-aware VM processing</td>
<td>Warning</td>
</tr>
<tr>
<td>Application-aware image processing for Windows Servers</td>
<td>Warning</td>
</tr>
<tr>
<td>VMware Tools Quiescence for Linux/Unix VMs</td>
<td>Failed</td>
</tr>
<tr>
<td>VMs VMware Tools status</td>
<td>Warning</td>
</tr>
<tr>
<td>VMs Verification</td>
<td>Warning</td>
</tr>
</tbody>
</table>

**Backup infrastructure configuration**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Verification Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMs failed over to network processing mode</td>
<td>Passed</td>
</tr>
<tr>
<td>Backup server protection</td>
<td>Passed</td>
</tr>
<tr>
<td>SQL Server optimization</td>
<td>Passed</td>
</tr>
<tr>
<td>Repository free space</td>
<td>Failed</td>
</tr>
<tr>
<td>Direct SAN access iSCSI performance</td>
<td>Not Required</td>
</tr>
</tbody>
</table>

You can click a criterion to jump to detailed recommendations on configuration improvement.
VM Backup Status

The **VM Backup Status** report provides daily backup status for all VMs protected with Veeam Backup & Replication.

**NOTE:**
To make the report work properly, you will need to connect VMM with Operations Manager. For more information on setting up VMM integration with Ops Mgr, see [this Microsoft KB article](#).

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **VM Backup Status** report. Consider the following example:

*You need to show the status of VM backup and replication tasks for the previous week.*

**Step 1. Open VM Backup Status Report**

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **VM Backup Status** report. Alternatively, right-click the **VM Backup Status** report in the Reporting Pane and choose **Open**.

**Step 2. Define Time Intervals**

Next, you need to choose the time range for the report.

1. From the **From** list, choose *Previous week > Monday*.
2. From the **To** list, choose *Previous week > Saturday*.
Step 3. Choose How to Display Report Charts

Define the type of values shown on the x-axis of the chart (weekdays, weeks or months). To hide the report chart, choose No.

Step 4. Choose Report Scope

By default, the Scope section contains the VMware vCenter Group, Veeam Hyper-V Virtual Machines Group and Veeam Backup Sever Group. To follow this example, leave the scope without changes.

Step 5. Choose Grouping Options

Define whether data in the report will be grouped by Job or Location.

Step 6. Run the Report

When finished, click Run to view the report.
Report Output

The report will display information on the status of backup and replication tasks for the previous week.

The **VM Backup Status** chart will display how many times backup and replication tasks completed successfully, ended with warnings or failed on each day of the previous week.

In this example, the report shows that during the previous week there were created 405 backups in total; 304 tasks completed successfully and 101 — with warnings.

---

### VM Backup Status

#### Report description

#### Report parameters

---

![VM Backup Status Chart](image)

---

The report table will provide a list of protected VMs and display daily backup or replication results. If backup or replication tasks for the same VM were performed several times a day, the report will show the best completion status.

<table>
<thead>
<tr>
<th>Job Name</th>
<th>VMs</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>VM 001</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 002</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 003</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 004</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 005</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 006</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 007</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 008</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 009</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
<tr>
<td>VM 010</td>
<td>Success</td>
<td>Warning</td>
<td>-</td>
<td>-</td>
<td>Success</td>
<td>Success</td>
<td></td>
</tr>
</tbody>
</table>
Delegated Restore Permissions Overview

The Delegated Restore Permissions Overview report analyzes restore permissions configured in Veeam Backup Enterprise Manager. It returns a list of users and groups who can restore entire VMs, guest OS files and application items in Veeam Backup Enterprise Manager, and shows what type of data these users can restore according to assigned permissions.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Delegated Restore Permissions Overview report. Consider the following example:

You need to show what restore permissions are assigned for a specific Veeam Backup Enterprise Manager server.

Step 1. Open Delegated Restore Permissions Overview Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Delegated Restore Permissions Overview report. Alternatively, right-click the Delegated Restore Permissions Overview report in the Reporting Pane and choose Open.

Step 2. Choose Report Scope

Define the Enterprise Manager server to include in the report.

1. By default, the Scope section contains the Veeam Backup Enterprise Manager Group. Select the group and click Remove.

2. Click Add Object. In the Add Object window, click Options. In the Options window, click Add. In the Class Name search box, type enterprise manager and click Search. Select the Veeam Backup Enterprise Manager class in the list of search results, click Add and click OK. In the Options windows, click OK to apply the filter. In the Add Object window, click Search. The search will return a list of objects that belong to the Veeam Backup Enterprise Manager class. Select the necessary Enterprise Manager server, click Add and click OK.
Step 3. Run the Report

When finished, click Run to view the report.

Report Output

The report will display a list of users and groups with restore permissions assigned in Veeam Backup Enterprise Manager.

Delegated Restore Permissions Overview

- **Report description**

- **Report parameters**

<table>
<thead>
<tr>
<th>Account</th>
<th>Type</th>
<th>Role</th>
<th>Restore Scope</th>
<th>Allowed Restore Type</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="#">2-hyper2012r2.n.Local</a></td>
<td>User</td>
<td>Portal User</td>
<td>Any Host</td>
<td>Exchange Items Guest Files (restricted)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Extensions only SQL Items VMs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All VMs</td>
<td></td>
</tr>
<tr>
<td>BUILTIN Administrators</td>
<td>Group</td>
<td>Portal Administrator</td>
<td>Any Host</td>
<td>Exchange Items Guest Files</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SQL Items VMs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All VMs</td>
<td></td>
</tr>
<tr>
<td>NAdmin</td>
<td>User</td>
<td>Portal Administrator</td>
<td>Any Host</td>
<td>Exchange Items Guest Files</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SQL Items VMs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All VMs</td>
<td></td>
</tr>
<tr>
<td>NT AUTHORITY SYSTEM</td>
<td>User</td>
<td>Portal Administrator</td>
<td>Any Host</td>
<td>Exchange Items Guest Files</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SQL Items VMs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All VMs</td>
<td></td>
</tr>
</tbody>
</table>
Protected VMs

The Protected VMs report analyzes backup protection of VMs in your virtual environment. The report examines whether VMs have valid backup or replica restore points created within the specified time range (RPO period), shows the total number of restore points available for each protected VM, and provides information on the completion status of recent backup and replication job sessions.

The Protected VMs report helps you identify which VMs in your environment function without proper protection and make sure the existing backups and replicas meet the established RPO requirements.

To create the report, Veeam MP retrieves data from the following sources:

- Historical data on backup and replication job sessions for the specified RPO period (gathered from Veeam Backup & Replication servers by MP for Veeam Backup & Replication)
- List of VMs in the virtual environment (gathered from VMware vSphere and Microsoft Hyper-V management servers by Veeam VMware MP and Veeam Hyper-V MP)

Make sure that the same virtual management servers are both connected to Veeam Backup & Replication console and displayed in the Veeam Virtualization Extensions UI under the same unique address, either DNS name or IP. Otherwise, the report output will show all VMs as unprotected.

NOTE:
To make the report work properly, you will need to connect VMM with Operations Manager. For more information on setting up VMM integration with Ops Mgr, see this Microsoft KB article.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Protected VMs report. Consider the following example:

You need to obtain the list of protected and unprotected VMs in your environment, assuming that your disaster recovery policy demands that VMs should have backups not older than a month.

Step 1. Open Protected VMs Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Protected VMs report. Alternatively, right-click the Protected VMs report in the Reporting Pane and choose Open.
Step 2. Choose Report Scope

Define the backup server to include in the report.

1. By default, the Scope section contains the VMware vCenter Group, Veeam Hyper-V Virtual Machines Group and Veeam Backup Sever Group. Select all groups and click Remove.

2. Click Add Group. In the Add Group window, click Options. In the Options window, click Add. In the Class Name search box, type “backup server” and click Search. Select the Veeam Backup Server class in the list of search results, click Add and click OK. In the Options windows, click OK to apply the filter. In the Add Group window, click Search. The search will return a list of objects that belong to the Veeam Backup Server class. Select the necessary backup server, click Add and click OK.

Step 3. Choose RPO Value

The RPO parameter defines a period during which you may accept to lose data. Basically, RPO stands for the age of the latest backup or replica files required to resume normal operation if system failure occurs.

To follow this example, type 1 in the RPO field.
Step 4. Choose RPO Unit

The **RPO Unit** defines the measurement unit for the **RPO** parameter. For example, if **RPO** is set to 1 and **RPO Unit** is set to **Day**, then backup of the system is to be done once a day, every day.

To follow this example, select **Month** from the **RPO Unit** list.

Step 5. Define Job Type

Define the type of backup job to be analyzed in the report. In this example, the report will analyze **Backup jobs only**.

Step 6. Run the Report

When finished, click **Run** to view the report.
Report Output

The report will display a list of virtual machines that are protected by up-to-date backups and a list of VMs that lack backup protection. A VM is considered to be Protected if there is at least one valid restore point not older than 1 month. A VM is considered to be Unprotected if it has no restore points or if it has restore points older than 1 month.

The Summary doughnut charts will show the total number of protected/unprotected VMs, latest state of backup job sessions and total number of VMs that have valid restore points within/older than the selected RPO.

In this example, the report shows that:

- 3 VMs are considered to be Protected
- For protected VMs, 1 backup job session completed successfully, 1 backup job session completed with warnings and 1 backup job session failed
- 24 VMs are considered to be Unprotected (do not have restore points at all, or the restore points do not meet the required RPO)
The details table will show the name of the host on which the VM runs, name of the cluster where the VM resides, name and type of the job that is used to protect the VM, date and result of the latest backup job session, the number of restore points created for the VM within the selected RPO and total number of restore points available for the VM.

### Protected VMs

<table>
<thead>
<tr>
<th>VM</th>
<th>Location</th>
<th>Cluster</th>
<th>Last Backup</th>
<th>Available Restore Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>sql2008r2</td>
<td>host01</td>
<td>clu01</td>
<td>SQL Backup, Backup Job</td>
<td>1 (Failed)</td>
</tr>
<tr>
<td>win2012</td>
<td>host02</td>
<td>clu02</td>
<td>CRM Backup, Backup Job</td>
<td>1 (Success)</td>
</tr>
<tr>
<td>win2012</td>
<td>host02</td>
<td>clu02</td>
<td>Other Backup, Backup Job</td>
<td>1 (Warning)</td>
</tr>
</tbody>
</table>

### Unprotected VMs

<table>
<thead>
<tr>
<th>VM</th>
<th>Location</th>
<th>Cluster</th>
<th>Last Backup</th>
<th>Available Restore Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oracle</td>
<td>host01</td>
<td>clu01</td>
<td>Virtual Lab Backup, Backup Job</td>
<td>0 (Failed)</td>
</tr>
<tr>
<td>Srvr12</td>
<td>host02</td>
<td>clu01</td>
<td>Microsoft Backup, Backup Job</td>
<td>3 (Success)</td>
</tr>
<tr>
<td>win2008</td>
<td>host01</td>
<td>clu01</td>
<td>ConfigDB Backup, Backup Job</td>
<td>2 (Failed)</td>
</tr>
</tbody>
</table>

For example, the sql2008r2 virtual machine:

- Is running on the host01 in the clu01 cluster
- Is protected with the SQL Backup job; latest session on the 9th of June ended with the Failed state
- Has 1 available restore points which meets the specified RPO
Capacity Planning for Backup Repositories

The Capacity Planning for Backup Repositories report forecasts free space utilization for backup repositories.

The Capacity Planning for Backup Repositories report estimates the amount of free space available on backup repository(ies) and forecasts how many days remain before the repository will run out of free space.

To calculate future space usage, the report analyzes the amount of free space for the specified period in the past, calculates the free space utilization trend and applies this trend to the forecast horizon. For better forecast accuracy, along with the performance trend the report provides trend’s confidence interval that represent the best- and worst-case scenarios. This allows you to estimate various possible outcomes and helps you rationally plan your resources.

If the specified free space threshold is breached within the forecast interval, the report marks the repository as problematic. The report also provides recommendations on how to adjust repository storage resources to meet future capacity demands: it calculates the amount of additional space that needs to be provisioned to accommodate backup files in future.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Capacity Planning for Backup Repositories report. Consider the following example:

You need to forecast the number of days left before the amount of free space on the selected backup repositories decreases to 30%. Use the historical performance data for the previous month to calculate the free space utilization trend.

Step 1. Open Capacity Planning for Backup Repositories Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Capacity Planning for Backup Repositories report. Alternatively, right-click the Capacity Planning for Backup Repositories report in the Reporting Pane and choose Open.
Step 2. Define Time Intervals

The **Performance Data From** parameter defines a date in the past starting from which historical performance data will be used to calculate the free space utilization trend. The report analyzes historical performance data starting from this date to the current date (data collection period).

**NOTE:**
To make a forecast, the report must use historical performance data for at least 72 hours.

To follow this example, choose *Previous month > First day* from the **Performance Data From** list.

The **Forecast Horizon** parameter defines the forecast period. The calculated performance utilization trend is applied to the time interval that starts from the current date to the forecast horizon date.

**NOTE:**
The date in the **Forecast Horizon** field must be a date in future.

To follow this example, choose a date in future (30 days from today) from the **Forecast Horizon** list.

Step 3. Choose Report Scope

Define a list of backup repositories to include in the report.

1. By default, the **Scope** section contains the **Veeam Backup Repository Group**. Select the group and click **Remove**.

2. Click **Add Object**. In the **Add Object** window, click **Search**. By default, the filter options are configured to include objects of the **Veeam Backup Repository** class. Select the necessary repositories, click **Add** and click **OK**.
Step 4. Choose Threshold Value

The **Threshold: Repository Free Space (%)** parameter defines the free space threshold as a percentage of total repository space.

In this example, type **30** in the **Threshold: Repository Free Space (%)** field.

Step 5. Choose How to Display Report Charts

Use the **Show details** list to define whether you want the report to show expanded or collapsed charts.

Step 6. Run the Report

When finished, click **Run** to view the report.
Report Output

The **Infrastructure Described** table will provide an overview for all repositories included in the report scope: total capacity, amount of free space (in GB) and number of VMs.

### Capacity Planning for Backup Repositories

#### Report description

#### Report parameters

<table>
<thead>
<tr>
<th>Summary</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Infrastructure Described</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Backup Repositories overview</strong></td>
<td></td>
</tr>
<tr>
<td>Repositories</td>
<td>2</td>
</tr>
<tr>
<td>Total Capacity (GB)</td>
<td>239.04</td>
</tr>
<tr>
<td>Free Space (GB)</td>
<td>177.39</td>
</tr>
<tr>
<td>Number of VMs</td>
<td>24</td>
</tr>
</tbody>
</table>

(*) Some numbers are based on recent hourly averaged measurements, so fractional numbers may appear even when only integers seem to be an appropriate value.

The **Performance Forecast Analysis and Recommendations** table will provide analysis results (*Passed* or *Failed*), number of days left before the free space threshold is breached and recommendations for free space (in case the specified threshold will be or has already been breached within the forecast period):

<table>
<thead>
<tr>
<th><strong>Performance Forecast Analysis and Recommendations</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
<td><strong>Analysis Result</strong></td>
</tr>
<tr>
<td>Default Backup Repository (VM00182064.0a.local)</td>
<td>Failed</td>
</tr>
<tr>
<td>Backups Vol1 (vm0030922-vseers.local)</td>
<td>Passed</td>
</tr>
<tr>
<td>Secondary Repository (vm0030922-vseers.local)</td>
<td>Passed</td>
</tr>
</tbody>
</table>

(*) Recommendations are based on a worst-case scenario.

In this example, the report shows that the amount of free space on the **Default Backup Repository** is already less than the threshold of 30% (because the number of **Days Left** is 0). It is recommended to increase free space by 6.09 GB for the repository.

The report also forecasts that the free space threshold will be breached in approximately 10 years for the **Backups Vol1** and will not be breached for the **Secondary Repository**. There is no need to increase the amount of free space for these repositories.
The Overall Recommendations table will provide recommendations on free space allocation for all repositories included in the report scope.

<table>
<thead>
<tr>
<th>Overall recommendations (*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendations for all objects of type 'Veeam Backup Repository':</td>
</tr>
<tr>
<td>Increase free space by 6.05 GB</td>
</tr>
</tbody>
</table>

(*) Recommendations are based on a worst-case scenario.

Report details will provide in-depth forecast information for every repository included in the report scope. The Overview table will provide an overview for the repository: total capacity and amount of free space (in GB). The Performance Forecast section will show a chart and a details table for the analyzed repository free space resource.

The Performance Forecast table reveals whether the specified thresholds will be breached and details the following forecasted values (all values are provided for both the best-case and the worst-case scenarios):

- **Days Left**: number of days after which the free space threshold will be breached
- **Metric Forecast**: predicted metric value at the end of the forecast period
- **Available resources**: amount of resources that will remain unused on the forecast horizon date (available resources, calculated as the difference between the threshold and the predicted resource usage)

### Veeam Backup Repository: Default Backup Repository (W2K8R2X64.m.local)

**Overview (*)**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Total Capacity (GB)</th>
<th>Type</th>
<th>Free Space (GB)</th>
<th>Number of VMs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>46.9</td>
<td>Windows</td>
<td>13.39</td>
<td>18</td>
</tr>
</tbody>
</table>

(*) Some numbers are based on recent hourly averaged measurements, so fractional numbers may appear even when only integers seem to be an appropriate value.

**Performance Forecast**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Threshold</th>
<th>Days Left</th>
<th>Metric Forecast</th>
<th>Available resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Space (GB)</td>
<td>14.07</td>
<td>0</td>
<td>0</td>
<td>-5.97</td>
</tr>
</tbody>
</table>

The chart provides a visual representation of the free space capacity over time, with trend lines and deviation to illustrate the predicted forecast.
Backup and Replication Job Status

The **Backup and Replication Job Status** report provides information on the results of backup and replication job sessions within the selected time range. The report reveals whether the latest job sessions ended up with errors and warnings or completed successfully.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **Backup and Replication Job Status** report. Consider the following example:

> You need to report on all backup and replication jobs performed across the selected backup server during this week.

Step 1. Open Backup and Replication Job Status Report

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Backup and Replication Job Status** report. Alternatively, right-click the **Backup and Replication Job Status** report in the Reporting Pane and choose **Open**.

Step 2. Define Time Intervals

Next, you need to choose the time range for the report.

1. From the **From** list, choose **This week > Monday**.
2. From the **To** list, choose **This week > Friday**.

![Backup and Replication Job Status - Operations Manager - Report - greenhorse.mg](image)
Step 3. Choose Report Scope

Select the backup server to include in the report.

1. By default, the **Scope** section contains the **Veeam Backup Server Group**. Select the group and click **Remove**.

2. Click **Add Group**. In the **Add Group** window, click **Options**. In the **Options** window, click **Add**. In the **Class Name** search box, type “backup server” and click **Search**. Select the **Veeam Backup Server** class in the list of search results, click **Add** and click **OK**. In the **Options** windows, click **OK** to apply the filter. In the **Add Group** window, click **Search**. The search will return a list of objects that belong to the **Veeam Backup Server** class. Select the server, click **Add** and click **OK**.

Step 4. Run the Report

When finished, click **Run** to view the report.
Report Output

The Summary doughnut chart will show results of the latest sessions for jobs:

- Total number of jobs that completed with the Success status
- Total number of jobs that ended up with the Warning status
- Total number of jobs that ended up with the Failed status

In this example, the report shows equal number (1) of Success, Warning and Failed jobs.
The details table will display a list of performed backup and replication jobs. For all VM processing tasks that failed during the last session, the **Failed backup tasks** table will display a list of failed attempts to process a VM. The details of a failed task will include the following information: the date and time of the failed attempt and the VM that has been processed.

### Backup Server: W2K8R2k61n.local

<table>
<thead>
<tr>
<th>Job</th>
<th>Avg. duration (minutes)</th>
<th>Transferred (GB)</th>
<th>Session statistics</th>
<th>Last run</th>
<th>Last status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Success Warning Failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alta Lab Backup (Backup Job)</td>
<td>3</td>
<td>1.41</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Medicserv Backup (Backup Job)</td>
<td>6</td>
<td>4.23</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Database Backup (Backup Job)</td>
<td>4</td>
<td>0.00</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Failed backup tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Start Time</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>6/9/2014 5:20 PM</td>
</tr>
<tr>
<td>6/9/2014 6:20 PM</td>
</tr>
<tr>
<td>6/9/2014 6:20 PM</td>
</tr>
</tbody>
</table>
Backup Copy Job Overview

The **Backup Copy Job Overview** report analyzes the amount of traffic transmitted to target repository by backup copy jobs, evaluates the efficiency of backup data transfer through WAN accelerators and estimates the amount of network traffic savings.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **Backup Copy Job Overview** report. Consider the following example:

> You have configured backup copy jobs to use a specific pair of WAN accelerators; you need to report on the amount of data transmitted between the accelerators and find out how much traffic has been saved during this week.

**Step 1. Open Backup Copy Job Overview Report**

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Backup Copy Job Overview** report. Alternatively, right-click the **Backup Copy Job Overview** report in the Reporting Pane and choose **Open**.

**Step 2. Define Time Intervals**

Choose the time range for the report:

1. From the **From** list, choose **This week > Monday**.
2. From the **To** list, choose **This week > Friday**.
Step 3. Choose Report Scope

Select the backup server to include in the report.

1. By default, the **Scope** section contains the **Veeam Backup Server Group**. Select the group and click **Remove**.

2. Click **Add Group**. In the **Add Group** window, click **Options**. In the **Options** window, click **Add**. In the **Class Name** search box, type “backup server” and click **Search**. Select the **Veeam Backup Server** class in the list of search results, click **Add** and click **OK**. In the **Options** windows, click **OK** to apply the filter. In the **Add Group** window, click **Search**. The search will return a list of objects that belong to the **Veeam Backup Server** class. Select the server, click **Add** and click **OK**.

Step 4. Choose Backup Copy Jobs

Define a list of backup copy jobs to include in the report.
Step 5. Choose Accelerators

Choose the pair of source-to-target WAN accelerators to include in the report.

**NOTE:**

If you want to include in the report backup copy jobs without accelerators, select the *Without Accelerators* option.

Step 6. Choose Job Status

Define whether the report will analyze job sessions that completed with the *Success*, *Failed* and/or *Warning* status.
Step 7. Choose Aggregation Type

Define whether the data in the report will be aggregated *Hourly, Daily* or *Weekly.*

Step 8. Run the Report

When finished, click **Run** to view the report.
Report Output

The **Summary** charts will display total day-by-day traffic usage history:

- The **Traffic Efficiency (GB)** chart will show the actual amount of traffic read from the source repository and the amount of traffic transmitted over the network to the target repository.

- The **Traffic Savings by Day (GB)** chart will show the amount of traffic saved on each day of the reporting interval (that is, the difference between the amount of read traffic and the amount of transferred traffic).

---

**Backup Copy Job Overview**

- Report description

- Report parameters

---

**Summary**

![Traffic Efficiency (GB) chart](chart1.png)

![Traffic Savings (GB) chart](chart2.png)
The **Accelerator Details** table will provide the following information for each pair of WAN accelerators used by backup copy jobs.

<table>
<thead>
<tr>
<th>Source WAN Accelerator</th>
<th>Target WAN Accelerator</th>
<th>Backup Copy Job</th>
<th>Restore Points Transferred</th>
<th>Backup Size (GB)</th>
<th>Transferred Data (GB)</th>
<th>Traffic Savings (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>win2012</td>
<td>win2008sp264</td>
<td>Backup Copy Job 1</td>
<td>6</td>
<td>11.52</td>
<td>7.90</td>
<td>23.34</td>
</tr>
</tbody>
</table>

In this example, the report shows that during this week there were 6 restore points transferred, total amount of transferred data was 7.9 GB and traffic savings ran up to 23.34 GB.

The **Job Details** table will provide detailed information on job sessions, restore points transferred by the pair of WAN accelerators, original backup file sizes (in GB), actual amount of data transferred (in GB) and the amount of saved traffic (in GB).

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Session</th>
<th>Restore Points Transferred</th>
<th>Source Size (GB)</th>
<th>Transferred Data (GB)</th>
<th>Traffic Savings (GB)</th>
<th>WAN Accelerator Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Backup Copy Job 1</td>
<td></td>
<td>6</td>
<td>61.24</td>
<td>7.90</td>
<td>23.34</td>
<td>true</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session Start Time</th>
<th>Status</th>
<th>Restore Points Transferred</th>
<th>Source Size (GB)</th>
<th>Transferred Data (GB)</th>
<th>Traffic Savings (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/12/2013 3:26 AM</td>
<td>Success</td>
<td>1</td>
<td>15.32</td>
<td>6.60</td>
<td>12.72</td>
</tr>
<tr>
<td>10/12/2013 4:43 AM</td>
<td>Success</td>
<td>1</td>
<td>1.61</td>
<td>0.04</td>
<td>1.57</td>
</tr>
<tr>
<td>10/12/2013 11:40 AM</td>
<td>Warning</td>
<td>1</td>
<td>2.28</td>
<td>0.24</td>
<td>2.04</td>
</tr>
<tr>
<td>10/12/2013 6:43 PM</td>
<td>Warning</td>
<td>1</td>
<td>2.50</td>
<td>0.01</td>
<td>2.19</td>
</tr>
<tr>
<td>10/12/2013 8:44 AM</td>
<td>Warning</td>
<td>1</td>
<td>3.40</td>
<td>0.46</td>
<td>2.94</td>
</tr>
<tr>
<td>10/12/2013 3:44 PM</td>
<td>Warning</td>
<td>1</td>
<td>2.18</td>
<td>0.26</td>
<td>1.92</td>
</tr>
</tbody>
</table>
Restore Operator Activity

The **Restore Operator Activity** report can be used to trace user activity performed across the selected Veeam Backup & Replication servers:

- Application item restore (including replica failover, VM files restore, Instant VM Recovery and VM virtual disks restore)
- Full VM restore
- Guest files restore

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the **Restore Operator Activity** report. Consider the following example:

> You need to find out what users restored full VMs and guest files during this week.

**Step 1. Open Restore Operator Activity Report**

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Restore Operator Activity** report. Alternatively, right-click the **Restore Operator Activity** report in the Reporting Pane and choose **Open**.

**Step 2. Define Time Intervals**

Choose the time range for the report:

1. From the **From** list, choose **This week > Monday**.
2. From the **To** list, choose **This week > Friday**.
Step 3. Choose Report Scope

Select backup servers to include in the report. By default, the **Scope** section contains the **Veeam Backup Server Group**. To follow this example, leave the scope without changes.

Step 4. Select Users

Select backup administrators or restore operators whose restore activity needs to be analyzed.

**NOTE:**
The list of users may be empty in case no changes were made since Veeam management packs were imported.
Step 5. Choose Restore Type

Choose the type of restore to include in the report.

To follow this example, we will select *Full VM Restore* and *Guest Files.*
Step 6. Choose Aggregation Type

Define whether the data in the report will be aggregated *Hourly, Daily* or *Weekly.*

Step 7. Run the Report

When finished, click **Run** to view the report.
Report Output

The report will provide information on Full VM Restore and Guest Files restores for the specified users. The Summary doughnut chart will display total number of restore operations performed by each user during the past week. The Restore Statistics chart shows the number of Full VM Restore and Guest Files restores performed on week days.

In this example, the report shows that during the week Operator1 performed 1 restore, Operator2 — 2 restores, and Operator3 — 4 restores.
The details table will provide information on names of restored VMs and files, restore points to which the VMs and files were restored, restore destination paths, date and time when restore operations were performed and statuses of the completed restore operations.

<table>
<thead>
<tr>
<th>Restore Type</th>
<th>Initiator</th>
<th>VM Name</th>
<th>Restore Point</th>
<th>Restored Item</th>
<th>Destination</th>
<th>Start Time</th>
<th>Status</th>
</tr>
</thead>
</table>
Verified VMs

The Verified VMs report provides information on SureBackup jobs performed by Veeam Backup & Replication and displays the status of VMs verification tests.

The patent-pending SureBackup technology allows you to validate recoverability of created backups in an isolated test environment. The Verified VMs report helps you to quickly review the results of completed SureBackup jobs and confirm that the created backups are recoverable and error-free.

Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Verified VMs report. Consider the following example:

You need to report on all SureBackup jobs performed across the selected backup server during this week.

Step 1. Open Verified VMs Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Verified VMs report. Alternatively, right-click the Verified VMs report in the Reporting Pane and choose Open.

Step 2. Define Time Intervals

Choose the time range for the report.

1. From the From list, choose This week > Monday.
2. From the To list, choose This week > Friday.
Step 3. Choose Report Scope

Select the backup server to include in the report.

1. By default, the Scope section contains the Veeam Backup Server Group. Select the group and click Remove.

2. Click Add Group. In the Add Group window, click Options. In the Options window, click Add. In the Class Name search box, type “backup server” and click Search. Select the Veeam Backup Server class in the list of search results, click Add and click OK. In the Options windows, click OK to apply the filter. In the Add Group window, click Search. The search will return a list of objects that belong to the Veeam Backup Server class. Select the server, click Add and click OK.

Step 4. Run the Report

When finished, click Run to view the report.
Report Output

The report will display historical data on SureBackup job sessions for the specified reporting period.

The **Summary** section will provide the following information:

- Number of protected and verified VMs
- Latest state of SureBackup job sessions (total number of VMs for which the latest SureBackup session completed successfully, total number of VMs for which the latest SureBackup session completed with warnings and total number of VMs for which the latest SureBackup session failed)
- Number of produced and verified restore points

---

### Verified VMs

- **Report description**

- **Report parameters**

---

#### Summary

<table>
<thead>
<tr>
<th>VMs Overview</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protected VMs</td>
<td>22</td>
</tr>
<tr>
<td>VMs for verification</td>
<td>5</td>
</tr>
</tbody>
</table>

**Verified VMs status:**

| Passed | 0 |
| Passed with warnings | 3 |
| Failed | 1 |

<table>
<thead>
<tr>
<th>Restore Points Overview</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Produced restore points</td>
<td>181</td>
</tr>
<tr>
<td>Verified restore points</td>
<td>22</td>
</tr>
</tbody>
</table>

The **Verification Rate** chart will show how the number of successfully verified VMs was changing during the reporting period.

In this example, the report shows that there on 23.06.2014 there were 4 verified VMs, 3 VMs for which verification tests failed and 1 VM which verification test passed with warnings. On 24.06.2014, there were 2 verified VMs in total and verification test for all of them passed with warnings. On 25.06.2014, there was 1 verified VM in total and verification tests for it also passed with warnings. The number of produced restore points during this week was 181, and 12 of them were verified.
The details table will provide for each VM the result of verification tests run for the VM (in the 'failed/passed' format), the date of the last verified restore point and the result of the latest SureBackup job session.

<table>
<thead>
<tr>
<th>VM Name</th>
<th>Failed/Passed Verifications</th>
<th>Last Verified Restore Point</th>
<th>Last Verification Status</th>
<th>Ping Test</th>
<th>Heartbeat Test</th>
<th>Script Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reservenv5</td>
<td>1/1</td>
<td>6/23/2014 12:00 AM</td>
<td>PASSED with warnings</td>
<td>Not run</td>
<td>Not run</td>
<td>Disabled</td>
</tr>
<tr>
<td>Reservenv6</td>
<td>0/0</td>
<td>6/23/2014 3:04 AM</td>
<td>NotRunning</td>
<td>Not run</td>
<td>Not run</td>
<td>Disabled</td>
</tr>
<tr>
<td>marketing02</td>
<td>0/0</td>
<td>6/23/2014 1:04 AM</td>
<td>NotRunning</td>
<td>Not run</td>
<td>Not run</td>
<td>Not run</td>
</tr>
<tr>
<td>medsvv</td>
<td>1/0</td>
<td>6/23/2014 2:05 AM</td>
<td>FAILED</td>
<td>Not run</td>
<td>Not run</td>
<td>Disabled</td>
</tr>
<tr>
<td>oracle</td>
<td>0/1</td>
<td>6/23/2014 2:05 AM</td>
<td>PASSED with warnings</td>
<td>Not run</td>
<td>Not run</td>
<td>Disabled</td>
</tr>
<tr>
<td>Roles: DNS Server</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sharepoint</td>
<td>1/1</td>
<td>6/23/2014 7:09 PM</td>
<td>PASSED with warnings</td>
<td>Not run</td>
<td>Not run</td>
<td>Warning</td>
</tr>
<tr>
<td>Roles: Mail Server</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ws200982</td>
<td>0/1</td>
<td>6/23/2014 7:09 PM</td>
<td>PASSED with warnings</td>
<td>Not run</td>
<td>Not run</td>
<td>Warning</td>
</tr>
</tbody>
</table>
Performance History Reports

These reports aggregate historical data and show performance statistics across a time range.
Performance history reports feature predefined lists of different performance counters and allow you to report on:

- Concurrent tasks, memory and CPU — for backup proxies
- Concurrent tasks, free space and stored VMs — for backup repositories
- Free space — for scale-out backup repositories
- Memory and CPU — for Veeam backup agents

Sample Usage

This section provides step-by-step instructions that will help you understand how to create a performance history report.

Performance History for Repositories

Consider the following example:

>You need to report on the amount of free space left on all backup repositories in your virtual environment during this week.

Step 1. Open Performance History for Repositories Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Performance History for Repositories report. Alternatively, right-click the Performance History for Repositories report in the Reporting Pane and choose Open.

Step 2. Choose Data Aggregation Period

Define whether the data in the report will be aggregated Hourly or Daily.
Step 3. Define Time Intervals

Choose the time range for the report.

1. From the From list, choose This week > Monday.
2. From the To list, choose This week > Friday.

Step 4. Choose Type of Values to Display

Define whether the report chart will display values Weekly by weekdays, Monthly by days, Yearly by months or none of these.
Step 5. Choose Splitting Method

Define the way the report sections will be splitted: by Windows Computer, Selected Group/Object or Counter.

Step 6. Choose Chart Options

Define the type of an object for which a separate chart will be displayed. The list of available options depends on the Split into sections by value.
Step 7. Choose Report Scope

Select a list of backup repositories to include in the report. By default, the Scope section contains the Veeam Backup Repository Group. To follow this example, leave the scope without changes.

Step 8. Select Performance Counters

To follow this example, in the Counters list, select the Veeam Backup Repository\Free Space % (Veeam Backup Repository FreeSpace Pct) counter.

Step 9. Run the Report

When finished, click Run to view the report.
Report Output

The report will show how the amount of free space left on the selected repositories has been changing during the week.

Performance History for Repositories

Report description:

Report parameters:

SQL2008 qa-veeam.local (Windows Computer)

This function has been used to aggregate data and draw respective charts for rules below: Min
The details table will provide daily values for the amount of free space left on each repository (sample count, average, minimum, maximum and standard deviation values).

<table>
<thead>
<tr>
<th>Role</th>
<th>Object</th>
<th>Instance</th>
<th>Scale</th>
<th>Sample Count</th>
<th>Min Value</th>
<th>Max Value</th>
<th>Average Value</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup Repository</td>
<td>Free Space %</td>
<td>(Veeam Backup Repository FreeSpace %) (Percent)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management group wnt2012r2</td>
<td>Paths: SQL-2008-r2-veeaml.local</td>
<td>Name: Default Backup Repository</td>
<td>Type: Veeam Backup Repository</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Instance</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/15/2015 2:00 PM</td>
<td>268</td>
</tr>
<tr>
<td>8/16/2015 2:00 PM</td>
<td>268</td>
</tr>
<tr>
<td>8/17/2015 2:00 PM</td>
<td>268</td>
</tr>
<tr>
<td>8/18/2015 2:00 PM</td>
<td>268</td>
</tr>
<tr>
<td>8/19/2015 2:00 PM</td>
<td>268</td>
</tr>
</tbody>
</table>

In this example, the report shows that the amount of free space left on the Default Backup Repository has been constantly decreasing since Monday.

**Performance History for Veeam Agents**

Consider the following example:

*To evaluate the amount of resources required to process backup jobs, you need to obtain details on memory usage for all Veeam backup agents for this week.*

**Step 1. Open Performance History for Veeam Agents Report**

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Performance History for Veeam Agents** report. Alternatively, right-click the **Performance History for Veeam Agents** report in the Reporting Pane and choose **Open**.

**Step 2. Choose Data Aggregation Period**

Define whether the data in the report will be aggregated **Hourly** or **Daily**.
Step 3. Define Time Intervals

Choose the time range for the report.

1. From the From list, choose This week > Monday.
2. From the To list, choose This week > Friday.

Step 4. Choose Type of Values to Display

Define whether the report chart will display values Weekly by weekdays, Monthly by days, Yearly by months or none of these.
Step 5. Choose Splitting Method

Define the way the report sections will be splitted: by *Windows Computer*, *Selected Group/Object* or *Counter*.

![Image of Performance History for Veeam Agents - Operations Manager - Report - win2012r2]

Step 6. Choose Chart Options

Define the type of an object for which a separate chart will be displayed. The list of available options depends on the *Split into sections by* value.

![Image of Performance History for Veeam Agents - Operations Manager - Report - win2012r2]
Step 7. Choose Report Scope

Select a list of Veeam backup agents to include in the report. By default, the Scope section contains the Veeam Agents Group. To follow this example, leave the scope without changes.

Step 8. Select Performance Counters

To follow this example, in the Counters list, select the Veeam Agents\Memory Used % and Veeam Agents\Memory Used MB counters.

Step 9. Run the Report

When finished, click Run to view the report.
Report Output

The report will show how the memory usage level has been changing for the selected Veeam backup agents during the week.

Performance History for Agents

Report description:

Report parameters:

DE_BRCLIENT.n.local (Windows Computer)

This function has been used to aggregate data and draw respective charts for rules below: Max
The details table will provide daily values for memory usage (sample count, average, minimum, maximum and standard deviation values).

<table>
<thead>
<tr>
<th>Rule, Object, Instance</th>
<th>Scale</th>
<th>Sample Count</th>
<th>Min Value</th>
<th>Max Value</th>
<th>Average Value</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Agent</td>
<td>Memory Used % (Veeam Agent Memory Used %) [Percent]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management group apex16cc</td>
<td>Paths: DE_BRC1TB\tlocal</td>
<td>Names: Veeam Agent for Microsoft Windows</td>
<td>Types: Veeam Agent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instance average values</td>
<td>1</td>
<td>1436</td>
<td>3.09</td>
<td>12.51</td>
<td>3.56</td>
<td>0.71</td>
</tr>
<tr>
<td>2/5/2018 3:00 AM</td>
<td>286</td>
<td>3.67</td>
<td>12.51</td>
<td>4.02</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>2/6/2018 3:00 AM</td>
<td>288</td>
<td>3.10</td>
<td>12.02</td>
<td>3.74</td>
<td>0.89</td>
<td></td>
</tr>
<tr>
<td>2/7/2018 3:00 AM</td>
<td>290</td>
<td>3.09</td>
<td>9.25</td>
<td>3.26</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>2/8/2018 3:00 AM</td>
<td>287</td>
<td>3.15</td>
<td>8.18</td>
<td>3.34</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>2/9/2018 3:00 AM</td>
<td>285</td>
<td>3.15</td>
<td>7.92</td>
<td>3.34</td>
<td>0.52</td>
<td></td>
</tr>
</tbody>
</table>

In this example, the report shows that the memory usage on the Veeam backup agent has been constantly decreasing since Monday.
Top (Bottom) Reports

These reports show top or bottom objects for a specific performance counter across a time range.

Performance history reports feature predefined lists of different performance counters and allow you to report on:

- Concurrent tasks, memory and CPU — for backup proxies
- Concurrent tasks, free space and stored VMs — for backup repositories
- Memory and CPU — for Veeam backup agents

Sample Usage

This section provides step-by-step instructions that will help you understand how to create a Top (Bottom) report.

Top (Bottom) Backup Repositories

Consider the following example:

_You need to report on top 3 repositories that had the largest amount of free space during this week._

Step 1. Open Top (Bottom) Backup Repositories Report

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **Top (Bottom) Backup Repositories** report. Alternatively, right-click the **Top (Bottom) Backup Repositories** report in the Reporting Pane and choose **Open**.

Step 2. Define Time Intervals

Choose the time range for the report.

1. From the **From** list, choose _This week > Monday._
2. From the **To** list, choose _This week > Friday._
Step 3. Choose Sorting Algorithm
To follow this example, from the Algorithm list, choose Top.

Step 4. Choose Number of Repositories to Display
To follow this example, in the Count field, type 3.

Step 5. Choose Grouping Options
Define how data will be grouped in the report: by Object, Counter Instance or Object and Counter Instance.
Step 6. Choose Report Scope

Select a list of backup proxies to include in the report. By default, the Scope section contains the Veeam Backup Repository Group. To follow this example, leave the scope without changes.

Step 7. Select Performance Counter

To follow this example, in the Counter list, select the Veeam Backup Repository\Free Space % (Veeam Backup Repository FreeSpace Pct) counter.

Step 8. Run the Report

When finished, click Run to view the report.
Report Output

The report will show 3 repositories with the largest amount of free space. The chart will display the following details for every repository: average free space usage and the minimum-to-maximum free space usage range for the selected period.

Top/Bottom Backup Repositories

Report description:

Report parameters:

Veeam Backup Repository\Free Space % (Veeam Backup Repository Freespace Pct)

The table will display additional details for every repository: name, sample count, minimum, maximum and average free space usage values and standard deviation.

<table>
<thead>
<tr>
<th>Object</th>
<th>Counter Instance</th>
<th>Sample Count</th>
<th>Min Value</th>
<th>Max Value</th>
<th>Average Value</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type: Veeam Backup Repository Path: 2012\BT\Veeam\Local Names: \VMFS.heartbeat</td>
<td><em>Total</em></td>
<td>726</td>
<td>0.09</td>
<td>0.13</td>
<td>0.10</td>
</tr>
<tr>
<td>2</td>
<td>Type: Veeam Backup Repository Path: 2012\BT\Veeam\Local Names: CIFS share</td>
<td><em>Total</em></td>
<td>726</td>
<td>26.32</td>
<td>26.62</td>
<td>26.42</td>
</tr>
<tr>
<td>3</td>
<td>Type: Veeam Backup Repository Path: 2012\BT\Veeam\Local Names: Default Backup Repository</td>
<td><em>Total</em></td>
<td>750</td>
<td>0.65</td>
<td>64.53</td>
<td>19.29</td>
</tr>
</tbody>
</table>
Top (Bottom) Veeam Agents

Consider the following example:

You need to report on top 3 Veeam backup agents that had the highest CPU usage during this week.

Step 1. Open Top (Bottom) Veeam Agents Report

Open the Reporting Pane, select Veeam Backup and Replication Reports and double-click the Top (Bottom) Veeam Agents report. Alternatively, right-click the Top (Bottom) Veeam Agents report in the Reporting Pane and choose Open.

Step 2. Define Time Intervals

Choose the time range for the report.

1. From the From list, choose This week > Monday.
2. From the To list, choose This week > Friday.
Step 3. Choose Sorting Algorithm

To follow this example, from the **Algorithm** list, choose **Top**.

Step 4. Choose Number of Veeam Agents to Display

To follow this example, in the **Count** field, type **3**.
Step 5. Choose Grouping Options

Define how data will be grouped in the report: by *Object, Counter Instance* or *Object and Counter Instance*.

Step 6. Choose Report Scope

Select a list of backup proxies to include in the report. By default, the *Scope* section contains the *Veeam Agents Group*. To follow this example, leave the scope without changes.
Step 7. Select Performance Counter

To follow this example, in the **Counter** list, select the *Veeam Agent\CPU Used % (Veeam Agent CPU Used %)* counter.

![Image of Performance Counter Selection](image)

Step 8. Run the Report

When finished, click **Run** to view the report.
Report Output

The report will show 3 Veeam backup agents with the greatest CPU usage level. The chart will display the following details for every Veeam backup agent: average CPU usage and the minimum-to-maximum CPU usage range for the selected period.

Top/Bottom Veeam Agents

- **Report description:**

- **Report parameters:**

![Chart showing CPU usage](image)

The table will display additional details for every Veeam backup agent: name, sample count, minimum, maximum and average CPU usage values and standard deviation.

<table>
<thead>
<tr>
<th>Object</th>
<th>Counter instance</th>
<th>Sample Count</th>
<th>Min Value</th>
<th>Max Value</th>
<th>Average Value</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Typename Veeam Agent Path: DE_KUNDENTIADIGIN Local Name: Veeam Agent for Microsoft Windows</td>
<td>4028</td>
<td>0.00</td>
<td>54.50</td>
<td>1.06</td>
<td>2.72</td>
</tr>
<tr>
<td>2</td>
<td>Typename Veeam Agent Path: db-BigWIT Local Name: Veeam Agent for Microsoft Windows</td>
<td>4024</td>
<td>0.00</td>
<td>33.33</td>
<td>0.10</td>
<td>1.38</td>
</tr>
<tr>
<td>3</td>
<td>Typename Veeam Agent Path: cluvr20110410 Local Name: Veeam Agent for Microsoft Windows</td>
<td>4032</td>
<td>0.00</td>
<td>26.50</td>
<td>0.82</td>
<td>1.23</td>
</tr>
</tbody>
</table>
vSphere VM Configuration Assessment Report

The vSphere VM Configuration Assessment Report report helps you assess VMs readiness for performing backup with Veeam Backup & Replication. It analyzes configuration of VMs in your virtual environment and identifies VMs that cannot be properly backed up due to configuration limitations.

**NOTE:**
This report is available for VMware vSphere environments only.

The report takes into account the following criteria when analyzing VM configuration:

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application-Aware Image Processing</td>
<td></td>
</tr>
<tr>
<td>VM Guest OS</td>
<td>The report checks guest OS to detect VMs with Windows Server 2000 guest OS.</td>
</tr>
<tr>
<td></td>
<td>To create a transactionally consistent backup of VMs running VSS-aware applications, Veeam Backup &amp; Replication uses application-aware image processing. To enable application-aware image processing, it is required that Windows Server 2003 or later OS version is installed inside VMs.</td>
</tr>
<tr>
<td>VMware Tools</td>
<td>The report analyzes your virtual infrastructure to find VMs that do not have VMware Tools installed or running.</td>
</tr>
<tr>
<td></td>
<td>To enable backup with application-aware image processing, it is required that guest OS running inside your VMs have VMware Tools installed and running.</td>
</tr>
<tr>
<td>Configuration Issues</td>
<td></td>
</tr>
<tr>
<td>VM Names</td>
<td>The report analyzes your virtual infrastructure to find VMs with @ \ / &lt; &gt; symbols in display names.</td>
</tr>
<tr>
<td></td>
<td>Processing of VMs with @ \ / &lt; &gt; symbols in VM name is not supported for vCenter 5.1 and earlier. For more information on special characters used in display names, see this VMware KB article.</td>
</tr>
<tr>
<td>Datastore Names</td>
<td>The report analyzes your virtual infrastructure to find VMs on datastores with @ symbols in display names.</td>
</tr>
<tr>
<td></td>
<td>Processing of VMs on datastores with @ symbols in datastore name is not supported. For more information on special characters used in display names, see this VMware KB article.</td>
</tr>
<tr>
<td>Fault-Tolerant VMs</td>
<td>The report analyzes your virtual infrastructure to find fault-tolerant VMs.</td>
</tr>
<tr>
<td></td>
<td>Veeam Backup &amp; Replication cannot create snapshots for fault-tolerant VMs for vSphere 5.x or earlier. If you want to back up fault-tolerant VMs, you must upgrade them to the new vSphere 6.0 format.</td>
</tr>
<tr>
<td>Datastore Free Space</td>
<td></td>
</tr>
<tr>
<td>Criterion</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Datastore Free Space</td>
<td>The report analyzes your virtual infrastructure to find datastores that have less than 10% of free space.</td>
</tr>
<tr>
<td></td>
<td>When Veeam Backup &amp; Replication backs up a VM, it triggers a VMware snapshot that is normally stored next to VM files on the source datastore. To eliminate the problem of datastores running low on free space during backup, it is required that the free space is more than 10%.</td>
</tr>
<tr>
<td>Virtual Disks</td>
<td></td>
</tr>
<tr>
<td>Disks Engaged in SCSI Bus Sharing</td>
<td>The report analyzes your virtual infrastructure to find VMs with disks engaged in SCSI bus-sharing.</td>
</tr>
<tr>
<td></td>
<td>Snapshots are not supported on disks connected to controllers configured for bus-sharing configuration. For more information, see this VMware KB article.</td>
</tr>
<tr>
<td>Independent Disks</td>
<td>The report analyzes your virtual infrastructure to find VMs with Independent disks.</td>
</tr>
<tr>
<td></td>
<td>Snapshots are not supported on virtual machines with Independent disks. For more information, see this VMware KB article.</td>
</tr>
<tr>
<td>RDM Virtual Disks</td>
<td>The report analyzes your virtual infrastructure to find VMs with RDM virtual disks in the physical mode.</td>
</tr>
<tr>
<td></td>
<td>Veeam Backup &amp; Replication does not support RDM virtual disks in the physical mode and independent disks (these disks are skipped from processing automatically). To backup VMs with pRDM disks, you should convert these disks to vRDMs. For more information on how to switch a raw data mapping between physical and virtual compatibility modes, see VMware KB article.</td>
</tr>
<tr>
<td>VMware CBT</td>
<td></td>
</tr>
<tr>
<td>Existing Snapshots</td>
<td>The report analyzes your virtual infrastructure to find VMs with existing snapshots.</td>
</tr>
<tr>
<td></td>
<td>To use VMware Changed Block Tracking for incremental backup, all existing snapshots should be removed.</td>
</tr>
<tr>
<td>Hardware Version</td>
<td>The report analyzes your virtual infrastructure to find VMs with hardware version 4 or earlier.</td>
</tr>
<tr>
<td></td>
<td>To use VMware Changed Block Tracking for incremental backup, hardware version of VMs should be 7 or later.</td>
</tr>
</tbody>
</table>

### Sample Usage

This section provides step-by-step instructions that will help you understand how to create a VM configuration assessment report. Consider the following example:

*You plan to back up VMs running on a VMware vSphere host. Before adding these VMs to backup jobs, you want to run the configuration assessment report and make sure that the VMs are ready for flawless backup processing.*
Step 1. Open vSphere VM Configuration Assessment Report

Open the Reporting Pane, select **Veeam Backup and Replication Reports** and double-click the **vSphere VM Configuration Assessment** report. Alternatively, right-click the **vSphere VM Configuration Assessment** report in the Reporting Pane and choose **Open**.

Step 2. Choose Report Scope

Select a host that runs VMs you plan to back up.

1. By default, the **Scope** section contains the **VMware Virtual Machine Group**. Select the group and click **Remove**.

2. Click **Add Group**. In the **Add Group** window, click **Options**. In the **Options** window, click **Add**. In the **Class Name** search box, type “vsphere host” and click **Search**. Select the **VMware vsphere Host** class in the list of search results, click **Add** and click **OK**. In the **Options** windows, click **OK** to apply the filter. In the **Add Group** window, click **Search**. The search will return a list of objects that belong to the **VMware vsphere Host**. Select the necessary host, click **Add** and click **OK**.

Step 3. Choose to Skip Replicas

The **Skip Backup Replicas** parameter defines whether you want to assess VM replicas in the report. Choose **True** from the **Skip Backup Replicas** list to exclude VM replicas.
Step 4. Run the Report

When finished, click Run to view the report.

Report Output

In the Summary pie charts will show the following information:

- The **Virtual Machines Overview** chart will display total number of VMs with potential issues and total number of VMs ready for backup.

- The **Potential Issues** chart will display the number of VMs with Application-Aware Image Processing, Datastore Free Space, Virtual Disks, VMware CBT and Configuration issues described in the Summary section.

![Summary pie charts](image)

**vSphere VM Configuration Assessment Report**

- Report description

- Report parameters

---

**Summary**

![Summary pie charts](image)
The details table will provide details and recommendations for each VM issue.

<table>
<thead>
<tr>
<th>Category</th>
<th>Potential Issue</th>
<th>VMs</th>
<th>Host</th>
<th>Datastore</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application-Aware Image Processing</td>
<td>VMs with Windows Server 2003 Guest OS</td>
<td>720</td>
<td></td>
<td>second</td>
<td>Upgrade Guest OS to at least Windows Server 2003 to use Veeam AAP.</td>
</tr>
<tr>
<td>Configuration Issues</td>
<td>VMware Tools Not Running</td>
<td>52F</td>
<td></td>
<td>second, local</td>
<td>Make sure VMware Tools are up and running on these VMs.</td>
</tr>
<tr>
<td>Processing of VMs on Datastore with @ in the name is not supported</td>
<td>2</td>
<td></td>
<td></td>
<td>second, local</td>
<td>Recommendation is to use such symbols according to [link].</td>
</tr>
<tr>
<td>Processing of VMs with @/, /s, symbols in VM name is not supported for vCenter 5.1 and earlier</td>
<td>5</td>
<td></td>
<td></td>
<td>second, local</td>
<td>Recommendation is to use such symbols according to [link].</td>
</tr>
<tr>
<td>Processing of vSphere Fault-Tolerant (FT) VMs is not supported</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Processing of Fault-Tolerant VMs created on vSphere versions prior to vSphere 6 is not supported.</td>
</tr>
<tr>
<td>Datastore Free Space</td>
<td>VMs on datastores with 10% of free space</td>
<td>20%</td>
<td></td>
<td></td>
<td>Ensure you have more than 10% of free space on datastores where you backing up VMs there.</td>
</tr>
<tr>
<td>Virtual Disks</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMware CBT</td>
<td></td>
<td>190</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix A.  
MP for Veeam Backup & Replication Monitors

The advanced MP for Veeam Backup & Replication monitors are listed below, with default thresholds and alert descriptions:

- Veeam Backup Services
- Veeam Backup Server
- Veeam Backup Repository
- Veeam Backup Proxy
- Veeam WAN Accelerator
- Veeam B&R Job
- Veeam Backup Agent

Veeam Backup Service

Veeam Broker Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target Service</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Broker Service Status | Availability | Veeam Broker Service Status | Red: Service is not running  
Green: Service is running | The Veeam Broker Service is not running.

Veeam Cloud Connect Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target Service</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Cloud Connect Service Status | Availability | Veeam Cloud Connect Service Status | Red: Service is not running  
Green: Service is running | The Veeam Cloud Connect Service is not running.
## Veeam Cloud Gateway Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Cloud Gateway Service Status</td>
<td>Veeam Cloud Gateway Service</td>
<td>Availability</td>
<td><strong>Red</strong>: Service is not running&lt;br&gt;<strong>Green</strong>: Service is running</td>
<td>The Veeam Cloud Gateway Service is not running.</td>
</tr>
</tbody>
</table>

## Veeam Mount Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Mount Service Status</td>
<td>Veeam Mount Service</td>
<td>Availability</td>
<td><strong>Red</strong>: Service is not running&lt;br&gt;<strong>Green</strong>: Service is running</td>
<td>The Veeam Mount Service is not running.</td>
</tr>
</tbody>
</table>

## Veeam Tape Access Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Tape Access Service Status</td>
<td>Veeam Tape Access Service</td>
<td>Availability</td>
<td><strong>Red</strong>: Service is not running&lt;br&gt;<strong>Green</strong>: Service is running</td>
<td>The Veeam Tape Access Service is not running.</td>
</tr>
</tbody>
</table>

## Veeam RESTful API Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: RESTful API Service Status</td>
<td>Veeam RESTful API Service</td>
<td>Availability</td>
<td><strong>Red</strong>: Service is not running&lt;br&gt;<strong>Green</strong>: Service is running</td>
<td>The Veeam RESTful API Service is not running.</td>
</tr>
</tbody>
</table>
### Veeam Backup Enterprise Manager Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Enterprise Manager Service Status | Veeam Backup Enterprise Manager | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam Backup Enterprise Manager Service is not running. |

### Veeam Backup Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Backup Service Status | Veeam Backup Server | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam Backup Service is not running. |

### Veeam Proxy/Data Mover Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Proxy/Data Mover Service Status | Veeam Backup Proxy Service  
-and-  
Veeam Data Mover Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam Proxy/Data Mover Service is not running. |

### Veeam WAN Accelerator Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: WAN Accelerator Service Status | Veeam WAN Accelerator Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam WAN Accelerator Service is not running. |
### Veeam vPower NFS Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: vPower NFS Service Status | Veeam Backup vPower NFS Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam Backup vPower NFS Service is not running. |

### Veeam Guest Catalog Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Guest Catalog Service Status | Veeam Backup Catalog Data Service  
-and-  
Veeam Guest Catalog Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Catalog Service is not running. |

### Veeam Installer Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Installer Service Status | Veeam Installer Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Veeam Installer Service is not running. |

### Veeam Hyper-V Integration Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Hyper-V Integration Service Status | Veeam Backup Hyper-V Integration Service  
-and-  
Veeam Hyper-V Integration Service | Availability | **Red:** Service is not running  
**Green:** Service is running | The Integration Service is not running. |
Veeam Backup Server

License Expiration

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup:      | Veeam Backup    | Availability  | Yellow: days before expiry – 28, 21, 14, 7, 6, 5, 4, 3, 2, 1  
                    | License Alert   |                | Red: on expiry                                | **Warning:** The Veeam Backup & Replication license will expire on [date]. All backup jobs will stop working on this date. Please contact Veeam for license renewal.  
                    | Veeam Backup    |                |                                               | **Error:** The Veeam Backup & Replication license has EXPIRED. All backup jobs are blocked. Please contact Veeam for license renewal! |
|                    | Server          |                |                                               |                                                                                   |

License Expiration (per-VM)

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup:      | Veeam Backup    | Availability  | Yellow: Per-VM license exceeded               | Your per-VM Veeam Backup & Replication license exceeded.  
                    | License Alert   |                | Green: Per-VM license is OK                    | After the total number of active VMs exceeds the total number of VMs in the license, the license is put to the Grace state.  
                    | Veeam Backup    |                |                                               | **If the license Grace period is not over yet, the backup server will still be able to perform backup of VMs during this period.** |
|                    | Server          |                |                                               |                                                                                   |
**Veeam Backup Repository**

### Repository Version

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Repository version is out of date | Veeam Backup Repository | Configuration | **Red:** Version is out of date  
**Green:** Version is up to date | Veeam Backup Repository version \[repository_version\] does not match the version of Veeam Backup & Replication server \[backup_version\]. Backup server will not be able to perform operations with this Repository while its software is outdated. |

### Repository Free Space Analysis

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Repository Free Disk Space Analysis | Veeam Backup Repository | Availability | freeSpaceGB  
< 10GB (warning)  
< 5GB (error)  
freeSpace%  
< 10 (warning)  
< 5 (error)  
Overall state = worst state of any metric | Backup Repository free space dropped below the configured threshold. Repository is currently \[number\]% used, with \[number\]GB space remaining from total capacity of \[capacity\]GB. |

### Backup Server Lost Connection to the Repository

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: Repository Connection Status | Veeam Backup Repository | Availability | **Red:** Repository is not accessible from the Backup Server  
**Green:** Repository is accessible | Backup server \[servername\] lost connection to the backup repository \[repositoryname\] hosted on \[repository host name\].  
*Failure Message:*  
[Failed Service1]:[Failure Message1]  
[Failed Service2]:[Failure Message2] |
# Veeam Scale-out Backup Repository

## SOBR Health State

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: SOBR Health State</td>
<td>Scale-Out Backup Repository (SOBR)</td>
<td>Availability</td>
<td>Red: Backup server reports SOBR status as critical</td>
<td><strong>Warning:</strong> Scale-out Backup Repository %NAME% reported issues with some of its extents. Use the diagram view to check which extents are in critical state. Some jobs may fail to perform backup operations with this SOBR or its extents.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Yellow: Backup server reports SOBR status as warning</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Green: Backup server reports SOBR status as healthy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Error:</strong> Scale-out Backup Repository %NAME% reported issues with all of its extent repositories. Backup jobs will not be able to use this SOBR as a target.</td>
<td></td>
</tr>
</tbody>
</table>

## Veeam Backup Proxy

### Proxy Version

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Proxy version is out of date</td>
<td>Veeam Backup Proxy</td>
<td>Configuration</td>
<td>Red: Version is out of date</td>
<td>Veeam Backup Proxy version [proxy_version] does not match the version of Veeam Backup &amp; Replication server [backup_version]. Backup server will not be able to perform operations with this Proxy while its software is outdated.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Green: Version is up to date</td>
<td></td>
</tr>
</tbody>
</table>

## Backup Server Lost Connection to Proxy

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Proxy Connection Status</td>
<td>Veeam Backup Proxy</td>
<td>Availability</td>
<td>Red: Proxy is not accessible from the Backup Server</td>
<td>Backup server [servername] lost connection to the backup proxy [proxynname] hosted on server [servername]. Failure Message: [Failed Service1]:[Failure Message1] [Failed Service2]:[Failure Message2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Green: Proxy is accessible</td>
<td></td>
</tr>
</tbody>
</table>
## Veeam WAN Accelerator

### WAN Accelerator Version

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: WAN Accelerator version is out of date    | Veeam WAN Accelerator     | Configuration | **Red:** Version is out of date  
**Green:** Version is up to date | Veeam Backup WAN Accelerator version [accelerator_version] does not match the version of Veeam Backup & Replication server [backup_version].  
Backup server will not be able to perform operations with this WAN Accelerator while its software is outdated. |

### Backup Server Lost Connection to WAN Accelerator

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
</table>
| Veeam Backup: WAN Accelerator Connection Status         | Veeam WAN Accelerator     | Availability   | **Red:** WAN Accelerator is not accessible from the Backup Server  
**Green:** WAN Accelerator is accessible | Backup server [servername] lost connection to the WAN Accelerator [acceleratorname] hosted on server [wan server name].  
Failure Message: [Failed Service1]:[Failure Message1]  
[Failed Service2]:[Failure Message2] |
### Veeam B&R Job

#### Veeam B&R Job Status

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: SQL Transaction Log Job Status</td>
<td>Veeam SQL Transaction Log Backup Job</td>
<td>Availability</td>
<td><strong>Red:</strong> Job failed event  &lt;br&gt; <strong>Yellow:</strong> Job warning event  &lt;br&gt; <strong>Green:</strong> Successful job event</td>
<td><strong>Red:</strong> The [jobname] Job has completed with error.  &lt;br&gt; <strong>Yellow:</strong> The [jobname] Job has completed with warning.</td>
</tr>
<tr>
<td>Veeam Backup: Job Status</td>
<td>Veeam B&amp;R Job</td>
<td>Availability</td>
<td><strong>Red:</strong> Job failed event  &lt;br&gt; <strong>Yellow:</strong> Job warning event  &lt;br&gt; <strong>Green:</strong> Successful job event</td>
<td><strong>Red:</strong> The [job type] Job [jobname] has finished with issues. Error reason specified by Veeam Backup server: [reason]  &lt;br&gt; <strong>Yellow:</strong> No alert</td>
</tr>
</tbody>
</table>

#### Veeam B&R Job Compliance

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Job RPO Compliance</td>
<td>Veeam B&amp;R Job</td>
<td>Configuration</td>
<td><strong>Red:</strong> No successful job completion event within [RPO_window]  &lt;br&gt; <strong>Yellow:</strong> Job schedule will produce next restore point outside of [RPO_window]  &lt;br&gt; <strong>Green:</strong> There is a successfully finished event, and job is configured to create next restore point within RPO window</td>
<td><strong>Red:</strong> The Veeam Backup &amp; Replication Job is not compliant with the assigned RPO threshold. Check job schedule and configuration, the job could be disabled or unable to perform a backup.  &lt;br&gt; Current RPO for this job is set to [RPO_threshold_parameter]  &lt;br&gt; The following objects don’t have a valid restore point: [objects_list]  &lt;br&gt; <strong>Yellow:</strong> The Veeam Backup &amp; Replication Job may not be compliant with the assigned RPO threshold, because the configured schedule does not meet the requirement.  &lt;br&gt; Current RPO for this job is set to [RPO_threshold_parameter]  &lt;br&gt; Last successful restore point is [last restore point timestamp].  &lt;br&gt; Next run for the Job is [Job next run].  &lt;br&gt; With current Job configuration you will have RPO violation for [N] hours.</td>
</tr>
</tbody>
</table>
### Veeam B&R Job Transport Mode

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Backup: Job transport mode status</td>
<td>Veeam B&amp;R Job</td>
<td>Availability</td>
<td><strong>Red:</strong></td>
<td>Some VM disks failed to be transferred by a preferred transport mode (when job is configured to SAN or ad-hoc and failed to network mode) and Job finished with Warning/Healthy state</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Yellow:</strong></td>
<td>Some VM disks failed to be transferred by a preferred transport mode (when job is configured to SAN or ad-hoc and failed to network mode)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Green:</strong></td>
<td>All VM disks have been backed up using SAN, ad-hoc or network mode (when network is preferred)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>The Job was unable to perform the backup operation via preferred transport mode. One or more disks for the following VMs failed-over to the Network mode transfer: [VM names]</td>
</tr>
</tbody>
</table>

### Veeam Backup Agent

#### Veeam Agent Service

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Agent: Service Status</td>
<td>Veeam Agent</td>
<td>Availability</td>
<td><strong>Red:</strong> Service is not running</td>
<td>The Veeam Agent for Microsoft Windows service is not running.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Green:</strong> Service is running</td>
<td></td>
</tr>
</tbody>
</table>

### License Expiration

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Agent: License Issue</td>
<td>Veeam Agent</td>
<td>Configuration</td>
<td><strong>Red:</strong> License expired</td>
<td>Veeam Agent License Issue: {0}. {0} — Expired/Expiring in [N] days -or- Support Expired/Expiring in [N] days</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Yellow:</strong> License expiring</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Green:</strong> License installed</td>
<td></td>
</tr>
</tbody>
</table>
# Veeam Agent Job Status

<table>
<thead>
<tr>
<th>Monitor/Alert Name</th>
<th>Target</th>
<th>Parent Monitor</th>
<th>Threshold(s)/Event(s)</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veeam Agent: Backup Job Status</td>
<td>Veeam Agent Backup Job</td>
<td>Availability</td>
<td><strong>Red</strong>: Event 190</td>
<td>Job finished with <em>Error</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Yellow</strong>: Event 190</td>
<td>Job finished with <em>Warning</em></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Event 191 Job finished with <em>Error</em>, but a <em>Retry</em> will be performed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Green</strong>: Event 190</td>
<td>Successful Job</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Red</strong>: The Job <em>jobname</em> has finished with {0} Status. Failure message: {1}</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>Yellow</strong>: {2} — Error/Warning</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>{2} — <em>Job will be rertied</em></td>
</tr>
</tbody>
</table>
Appendix B. Importing Veeam MP in System Center Service Manager

When importing Veeam MP libraries into System Center 2016 Service Manager or System Center 2012 R2 Service Manager (SCSM), in order to configure SCSM – Ops Mgr synchronization, you should import the following Veeam Library MPs:

- Veeam.Backup.BaseDiscovery.mp
- Veeam.Backup.Library.mp

All above MPs can be found in the Veeam MP ISO, in the \SCOM 2012 MPs folder.

Additionally, the following two Microsoft MPs are a required dependency — these MPs can be found on the Operations Manager 2012 R2 DVD, in the \Management Packs folder:

- Microsoft.SystemCenter.2007.mp
- Microsoft.SystemCenter.DataWarehouse.Library.mp

Note that import of the Veeam MPs using the SCSM console import GUI may fail with an error concerning dependencies. There is no known workaround for this. In this case, use Service Manager Shell powershell interface and the Import-SCSMManagementPack cmdlet as follows:

```
Import-SCSMManagementPack .\Veeam.Backup.BaseDiscovery.mp
Import-SCSMManagementPack .\Veeam.Backup.Library.mp
```
Appendix C. Troubleshooting Dataset Workflow Issues

If you encounter issues when submitting data collected by Veeam Management Pack into the Operations Manager Data Warehouse, check the exact error message received by the Ops Mgr:

- **Login errors and/or exceptions** could mean that Veeam MP dataset rules are trying to use the Default Action Account to submit data into the Ops Mgr DW DB.
- **Timeouts and other SQL-related errors** could indicate potential SQL performance issues.

**Troubleshooting Login Errors**

In case of login errors and/or exceptions, make sure that:

1. The Data Warehouse Run As profile is configured to access the Ops Mgr DW DB. To do that:
   a. Open the Ops Mgr console using the account with administrative rights.
   b. Go to the **Administration** section.
   c. Expand the **Run As Configuration** node and select **Profiles**.
   d. In the list of profiles, double-click the *inbuilt Data Warehouse Account*.
   e. In the **Run As Profile Wizard**, click **Next** to skip to the **Run As Accounts** step.
      
      Click **Add**. The **Add a Run As Account** window will be displayed.
      
      From the **Run As account** list, Select the *Data Warehouse Report Deployment Account*. From the **This Run As Account will be used to manage the following objects** list, select *A selected class, group or object* and click **Select > Class**.
      
      In the **Class Search** window, search for the *Data Set* item. This is a class of objects that includes the *Veeam.Backup.DataSet* and *Veeam.Virt.Extensions.VMware.Report.DWDataSet* used by the Veeam MP for VMware and MP for Veeam Backup & Replication to keep data in the Ops Mgr DW DB. Add this item as a target for the *Data Warehouse Report Deployment Account*.
      
      Click **Save**.

2. The account specified for this profile is allowed to be distributed on machines running Veeam Collectors and Veeam Backup & Replication servers. To do that:
   a. Open the Ops Mgr console using the account with administrative rights. Go to the **Administration** section.
   b. Expand the **Run As Configuration** node and select **Accounts**.
   c. Double-click the *Data Warehouse Report Deployment Account*.
   d. In the **Run As Account Properties** window, open the **Distribution** tab.
      
      Click **Add**, search and add Veeam Collectors and Veeam Backup & Replication servers.
      
      If you installed Veeam MP using the Veeam MP Auto-Deployment feature, you can add the All Management Servers Resource Pool to detect all Veeam Collectors automatically.
Troubleshooting Timeouts

Under rare circumstances, due to the heavy load, Ops Mgr may be unable to process dataset data in time. This, in turn, may create a congestion in dataset staging tables on the SQL server.

To resolve the issue, make sure that the SQL server has enough resources to process all incoming Ops Mgr data. These errors are most likely to self-resolve once the Ops Mgr completes the operation when the load is decreased.

If you still get timeouts and SQL-related errors, you will need to manually clean up staging tables on the SQL server. To do that, disable the standard built-in maintenance procedure and run it manually:

1. Use the **Instance name** field of the [31552](#) event description to locate the dataset that is causing the timeout — that would be either **VeeamMP** or **VeeamBackupMP**.

2. Configure an override to disable the maintenance procedure for the dataset:
   a. Open the Ops Mgr console using the account with administrative rights. Go to the **Authoring** section.
   b. Navigate to **Rules**.
   c. On the console toolbar, double-click the **Scope** button.
      In the **Scope Management Pack Objects** window, search and add **Standard Data Set**.
   d. Right-click the **Standard Data Warehouse Data Set** maintenance rule and select **Overrides > Override the Rule > For a specific object of class: Standard Data Set**.
      In the **Select Object** window, search and select the dataset that you located at step 1.
      In the **Override Properties** window, select the check box next to the **Enabled** parameter, change the **Override Value** to **False**, and click **Apply** to save changes.
      This will prevent dataset maintenance from running automatically for the given dataset type.

3. Restart the **System Center Management service** on the RMS to disable all running maintenance procedures.

4. Wait 10 minutes, then connect to the SQL server that hosts the Ops Mgr DW DB and open SQL Server Management Studio.
   Run the following query using the dataset name obtained at step 1:

```sql
USE [OperationsManagerDW]
DECLARE @DataSet uniqueidentifier
SET @DataSet = (SELECT DatasetId FROM StandardDataset WHERE SchemaName = 'dataset_name')
EXEC StandardDatasetMaintenance @DataSet
```

The query could take several hours to complete depending on how much data has been flooded to the warehouse. Do not stop the query until it completes.

5. Once the query completes, delete the override configured at step 2.

Ops Mgr DB DW keeps data for a specified length of time, depending on the data and aggregation type. By default, the database is set up to delete older data — this process is called ‘grooming’.

You can configure grooming settings for different types of data using Microsoft SQL Server Management Studio. Please note that Veeam MP is designed to use raw data aggregation type only, so hourly and daily aggregation settings must be ignored. To learn how to configure grooming settings for the Ops Mgr Reporting Data Warehouse Database, see this Microsoft article.