



# Veeam Report Library

Version 8.0

**User Guide**

December, 2016

**#1** for Virtualization™  
Management and Data Protection

**Microsoft Partner**  
Gold Application Development  
Gold Management and Virtualization



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# CONTENTS

<b>CONTACTING VEEAM SOFTWARE .....</b>	<b>5</b>
<b>ABOUT THIS DOCUMENT.....</b>	<b>6</b>
<b>WELCOME TO VEEAM REPORT LIBRARY .....</b>	<b>7</b>
PREREQUISITES.....	7
INSTALLING VEEAM REPORT LIBRARY .....	8
UPGRADING VEEAM REPORT LIBRARY .....	8
<b>VEEAM ALERT STATISTICS REPORT .....</b>	<b>9</b>
STEP 1. OPEN VEEAM ALERT STATISTICS REPORT .....	10
STEP 2. DEFINE TIME INTERVAL(S).....	10
STEP 3. CHOOSE REPORT MODE .....	11
STEP 4. CHOOSE REPORT SCOPE.....	11
STEP 5. CHOOSE MANAGEMENT PACKS.....	12
STEP 6. RUN THE REPORT .....	12
REPORT OUTPUT.....	12
<b>VEEAM ALERT HISTORY REPORT.....</b>	<b>14</b>
STEP 1. OPEN VEEAM ALERT HISTORY REPORT .....	14
STEP 2. DEFINE TIME INTERVALS .....	14
STEP 3. CHOOSE REPORT SCOPE.....	15
STEP 4. CHOOSE MANAGEMENT PACKS.....	15
STEP 5. CHOOSE ALERT SEVERITY AND PRIORITY .....	15
STEP 6. RUN THE REPORT .....	16
REPORT OUTPUT.....	16
<b>VEEAM PERFORMANCE REPORT .....</b>	<b>18</b>
STEP 1. OPEN VEEAM PERFORMANCE REPORT.....	19
STEP 2. CHOOSE DATA AGGREGATION LEVEL.....	19
STEP 3. DEFINE TIME INTERVALS .....	19
STEP 4. DEFINE CHART DISPLAY OPTIONS .....	20
STEP 5. CHOOSE VALUES TO SHOW ON CHART.....	20
STEP 6. ADD CHART AND DATA SERIES.....	21
STEP 7. CHOOSE REPORT SCOPE.....	21
STEP 8. CHOOSE COLLECTION RULE.....	22
STEP 9. CHOOSE CHART STYLE OPTIONS .....	22
STEP 10. RUN THE REPORT.....	22
REPORT OUTPUT.....	23
<b>VEEAM PERFORMANCE DETAILS REPORT.....</b>	<b>24</b>
STEP 1. OPEN VEEAM PERFORMANCE DETAILS REPORT .....	25
STEP 2. CHOOSE DATA AGGREGATION LEVEL.....	25
STEP 3. DEFINE TIME INTERVALS .....	25
STEP 4. CHOOSE HISTOGRAM TYPE.....	26
STEP 5. ADD DATA SERIES.....	26
STEP 6. CHOOSE REPORT SCOPE.....	26
STEP 7. CHOOSE COLLECTION RULE.....	27
STEP 8. RUN THE REPORT .....	27

REPORT OUTPUT.....	28
<b>VEEAM PERFORMANCE TOP (BOTTOM) N REPORT.....</b>	<b>29</b>
STEP 1. OPEN VEEAM PERFORMANCE TOP (BOTTOM) N REPORT.....	30
STEP 2. DEFINE TIME INTERVALS .....	30
STEP 3. CHOOSE REPORT ALGORITHM .....	31
STEP 4. DEFINE SORTING, GROUPING AND DISPLAY PARAMETERS .....	31
STEP 5. CHOOSE REPORT SCOPE .....	32
STEP 6. CHOOSE COLLECTION RULE.....	33
STEP 7. RUN THE REPORT .....	33
REPORT OUTPUT.....	34
<b>VEEAM RELATIONSHIP HISTORY.....</b>	<b>35</b>
STEP 1. OPEN VEEAM RELATIONSHIP HISTORY REPORT .....	35
STEP 2. DEFINE TIME INTERVALS .....	35
STEP 3. CHOOSE REPORT SCOPE .....	36
STEP 4. CHOOSE RELATIONSHIP TYPE .....	36
STEP 5. CHOOSE PERSPECTIVE OPTIONS .....	37
STEP 6. CHOOSE GROUPING OPTIONS .....	37
STEP 7. RUN THE REPORT .....	37
REPORT OUTPUT.....	38
<b>VEEAM STATE SUMMARY REPORT.....</b>	<b>39</b>
STEP 1. OPEN VEEAM STATE SUMMARY REPORT .....	39
STEP 2. CHOOSE DATA AGGREGATION LEVEL.....	39
STEP 3. DEFINE TIME INTERVALS .....	39
STEP 4. CHOOSE REPORT SCOPE .....	40
STEP 5. CHOOSE OBJECT TYPE.....	41
STEP 6. CHOOSE MONITOR .....	41
STEP 7. SPECIFY UNHEALTHY STATES.....	42
STEP 8. SPECIFY SERVICE LEVEL OBJECTIVE.....	42
STEP 9. CHOOSE SORTING OPTIONS .....	43
STEP 10. RUN THE REPORT .....	43
REPORT OUTPUT.....	43
<b>APPENDIX. KNOWN ISSUES .....</b>	<b>45</b>

# 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 product issue, suggestion or question, please visit our Customer Center Portal at [cp.veeam.com](http://cp.veeam.com) to open a case, search our knowledge base, reference documentation, manage your license or obtain the latest product release.

## Online Support

If you have any questions about the Veeam Report Library, you may use the following resources:

- Resources: [www.veeam.com/report-library-system-center.html](http://www.veeam.com/report-library-system-center.html)
- Online documentation: [www.veeam.com/documentation-guides-datasheets.html?prd=mp](http://www.veeam.com/documentation-guides-datasheets.html?prd=mp)
- Community forum: [forums.veeam.com](http://forums.veeam.com)

## Company Contacts

For the most up to date information about company contacts and offices location, please visit [www.veeam.com/contacts.html](http://www.veeam.com/contacts.html).

# ABOUT THIS DOCUMENT

This document describes advanced features of reports included in the Veeam Report Library. It also provides usage examples and gives step-by-step instructions that will help you better understand how to work with the reports.

## Document Revision History

Revision #	Date	Change Overview
Revision 1	8/9/2015	Initial version of the document for Veeam Generic Report Library 8.0.
Revision 2	24/2/2016	Updated the Prerequisites section to add support for SQL Server 2012 SP3.
Revision 3	9/12/2016	Updated the Prerequisites section to add support for Microsoft System Center 2016 Operations Manager.

# WELCOME TO VEEAM REPORT LIBRARY

The Veeam Report Library includes a comprehensive set of proprietary generic reports that extend functionality of the Microsoft Generic Report Library and offer a number of additional useful features. The reports included in the library can be used to analyze health and performance of any types of infrastructure objects and performance counter instances, both in the physical and virtual environments.

To use the Veeam Report Library, you should have the Operations Manager Reporting components installed; no additional software or Management Packs are required.

## How to Get It

The Veeam Report Library is available on the following page: [www.veeam.com/report-library-system-center.html](http://www.veeam.com/report-library-system-center.html).

## Prerequisites

Before you start working with the Veeam Report Library, check the following prerequisites.

### Supported Platforms

- Microsoft System Center 2016 Operations Manager
- Microsoft System Center 2012 R2 Operations Manager
- Microsoft System Center 2012 SP1 Operations Manager

### Operations Manager Components

- Operations Manager Reporting components properly installed and configured
- The Veeam Report Library supports Microsoft SQL Server 2008 SP3, SQL Server 2008 R2 SP2, SQL Server 2012 SP3, SQL Server 2014 and SQL Server 2016 Reporting Services

**Important!** Microsoft SQL Server 2005 Reporting Services is not supported.

For instructions on setting up Operations Manager Reporting, see the Operations Manager documentation.

### Usage Examples

This document illustrates how to use Veeam reports both for the physical and virtual infrastructures. Most examples described in this document reference classes, objects and rules available in the following management packs:

- SQL Server Monitoring Management Pack
- Veeam Management Pack for VMware

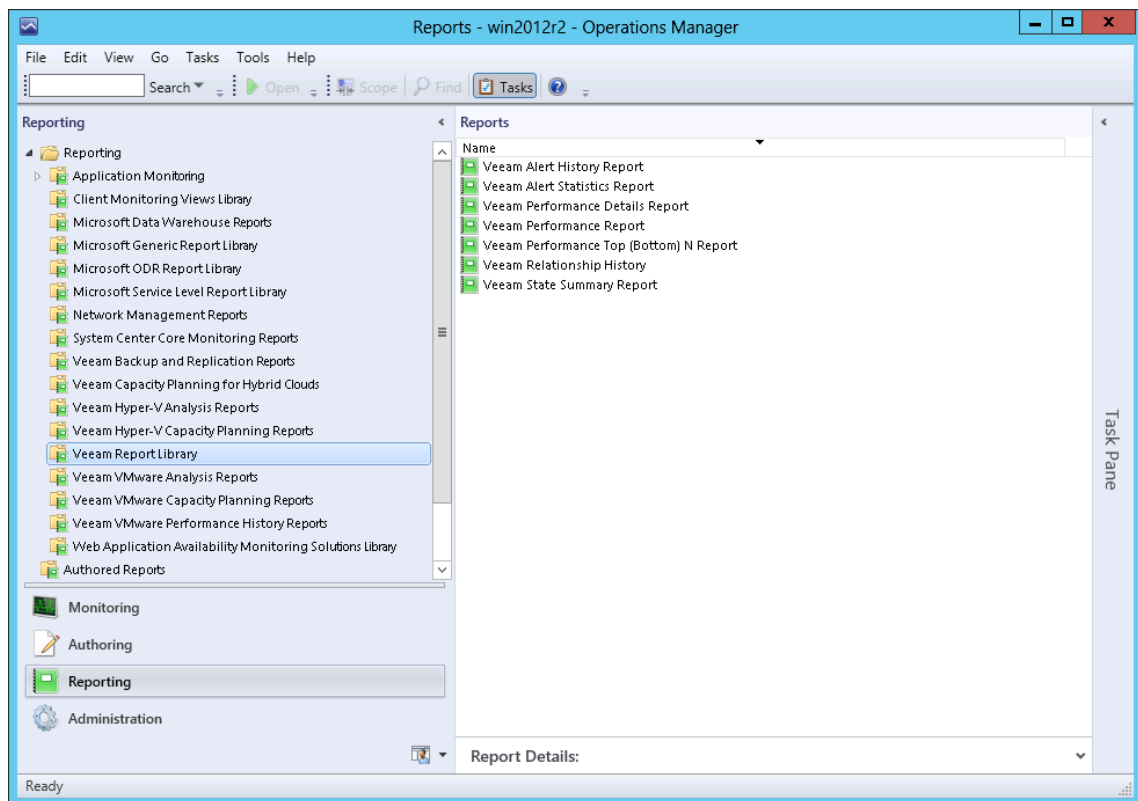
To follow the sample usage instructions, you must have these Management Packs installed.

# Installing Veeam Report Library

To install the Veeam Report Library, follow these steps:

1. Open the Operations Manager console and go to the **Administration** section.
2. Select the **Management Packs** node in the left pane and click **Import Management Packs** in the Actions Pane.
3. In the **Select Management Packs** window, click **Add** and then **Add from Disk**.
4. In the **Online Catalog Connection** window, click **No**.
5. Browse to the *Veeam.Report.Library.mp* file and click **Open**.
6. In the **Select Management Packs** window, click **Import**.

The **Veeam Report Library** folder will become available in the Reporting pane as shown below.



# Upgrading Veeam Report Library

If you already have Veeam Report Library 1.0, 6.x or 7.0 installed, you can upgrade it by importing the *Veeam.Report.Library.mp* file for Veeam Report Library 8.0.



# VEEAM ALERT STATISTICS REPORT

The **Veeam Alert Statistics Report** shows the alert statistics for given filter parameters. This report extends the functionality of the Microsoft Generic Report Library by adding a number of advanced possibilities for analyzing your environment from an alert perspective.

## Alert Statistics

The report allows analysis of alert statistics for the selected period in two modes — per-rule/monitor statistics (*Alert Statistics* mode) and per-object statistics (*Troublemakers* mode).

- The *Alert Statistics* mode helps you detect what rules or monitors trigger the vast majority of alerts in the managed environment. This mode is particularly useful if you have just installed new management packs or changed configuration of existing management packs. The report will help you reveal rules, monitors and MPs from which alerts originate and decide whether you need to reconfigure these rules and monitors to reduce the “noise”.
- The *Troublemakers* mode helps you identify infrastructure objects that cause alerts. A large number of alerts raised for a specific object may indicate a failure state of the object, or may signal that you need to adjust rules and monitors for the object to reduce the “noise”.

## Detail Levels

The report offers two levels of detail for every mode. The *Alert Statistics* mode shows per-rule/monitor statistics at the first level and itemizes the statistics by troublemaker at the details level. The *Troublemakers* mode shows statistics for troublemakers at the first level and itemizes the statistics by rule/monitor at the details level.

## Comparing Time Intervals

The Veeam Alert Statistics Report allows you to specify one or two time intervals in report parameters. You can choose one time interval to analyze alerting activity across a specific period. You can also choose two time intervals to check how alerting activity for one period has changed in comparison to another period.

## Management Pack Selection

The Veeam Alert Statistics Report allows you to choose management packs to include in the report. This type of report filtering helps you to narrow analysis scope and analyze only rules and monitors included in specific management packs.

## Interactive Table

To obtain a detailed performance statistics, you can drill down to the Veeam Alert History Report directly from the report page, by clicking a number in the **Count #1** and **Count #2** columns of the output table.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam Alert Statistics Report. Consider the following example:

*You tuned rules and monitors to reduce the alert “noise” that comes from Windows computers. You want to analyze how the changes affected the alert activity and decide whether further configuration of rules and monitors is necessary.*

The Veeam Alert Statistics Report can help you analyze alerting activity for two time intervals (before and after you made the changes) and answer the following questions:

- How has the number of alerts changed since you made changes?

- What rules and monitors are now triggering the majority of alerts? Specifically, what rules and monitors might need additional tuning?

## Step 1. Open Veeam Alert Statistics Report

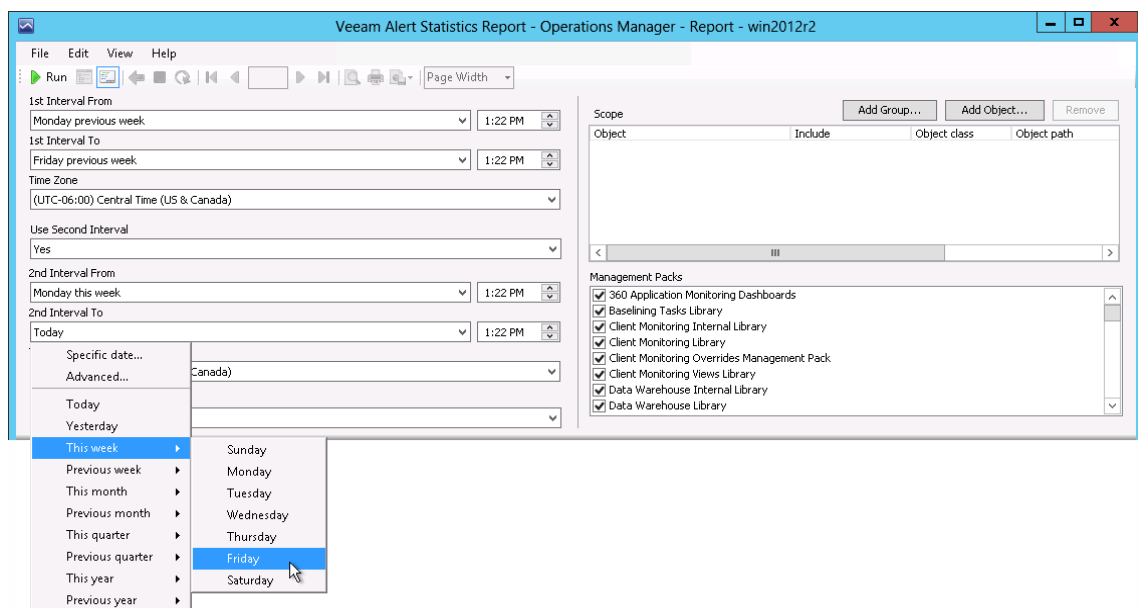
Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Alert Statistics Report**. Alternatively, right-click the **Veeam Alert Statistics Report** in the Reporting Pane and choose **Open**.

## Step 2. Define Time Interval(s)

Next, you need to define the time range for the report. You can set only one time interval to analyze the alerting activity for a specific time range, or define two time intervals to compare the alerting activity during two periods.

In our example, the report will analyze the alerting activity for the following intervals: a week before monitors and rules were changed (1st interval) and a week after the changes were made (2nd interval).

1. From the **1st Interval From** list, choose *Previous Week > Monday*. From the **1st Interval To** list, choose *Previous Week > Friday*.
2. From the **Use Second Interval** list, choose *Yes*.
3. From the **2nd Interval From** list, choose *This Week > Monday*. From the **2nd Interval To** list, choose *This Week > Friday*.



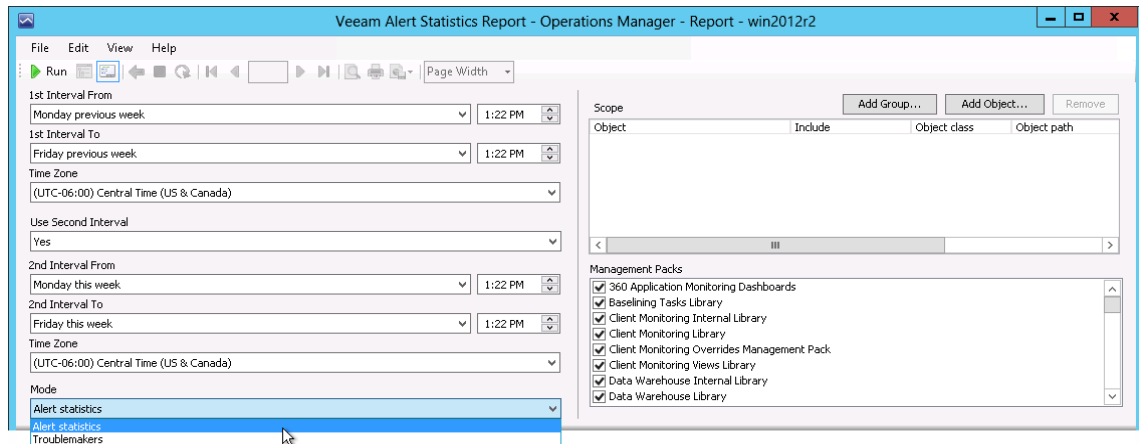
### Note

If you want to create a report for one time range, choose *No* from the **Use Second Interval** list. In this case, you will still need to select the beginning and the end of the second interval (these can be any values). This is by design of Microsoft; the behavior of report parameter controls cannot be changed.

## Step 3. Choose Report Mode

Next, choose the necessary report mode from the **Mode** list — *Alert statistics* or *Troublemakers*.

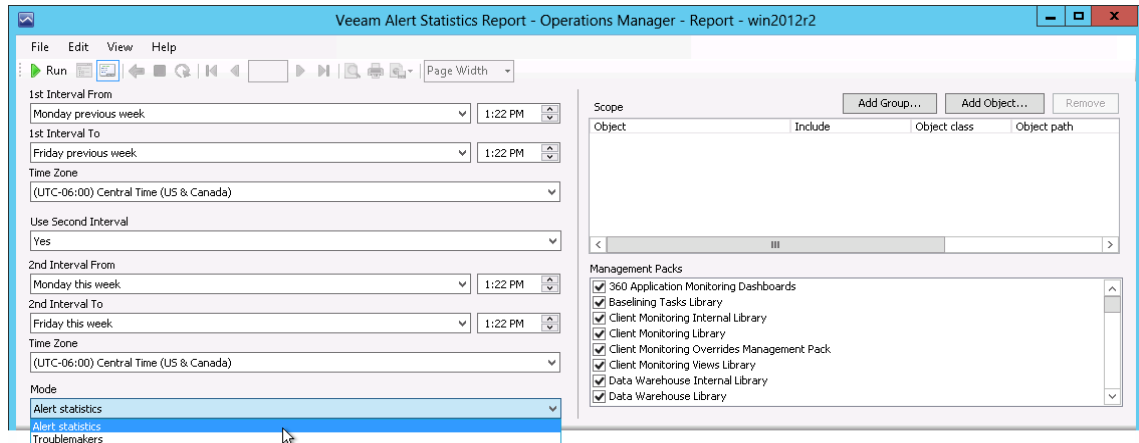
As we need to report on rules and monitors from which alerts originate, we will choose *Alert statistics*.



## Step 4. Choose Report Scope

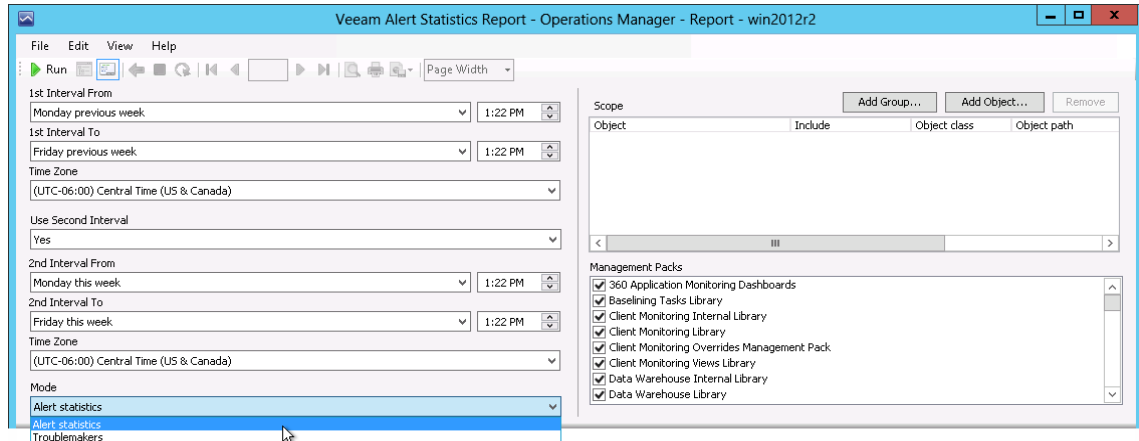
Define a list of groups or objects for which alert statistics will be analyzed. In our example, we will analyze alerting activity for managed computers included in the All Windows Computers group.

1. In the **Scope** section, click *Add Group*.
2. In the **Object Name** search box, type "*all windows computers*" and click **Search**. Select the *All Windows Computers* group, click **Add** and click **OK**.



## Step 5. Choose Management Packs

In the **Management Packs** section, select management packs that will be included in the report. By default, all installed MPs are selected.



## Step 6. Run the Report

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

## Report Output

The report will show rules and monitors that triggered alerts and compare the alerting activity for selected time intervals. You can expand table rows to view objects that caused the alerts and the alerting activity for every object.



### Alert Statistics

Report description:

Report parameters:

Report interval #1: 10/14/2013 1:22 PM - 10/18/2013 1:22 PM  
 Report interval #2: 10/21/2013 1:22 PM - 10/25/2013 1:22 PM  
 Time zone: (UTC-06:00) Central Time (US & Canada)  
 Report time: 10/25/2013 4:38 AM  
 Management Group: win2012r2  
 Selected scope: 1 objects selected  
 Selected management packs: 10 management packs selected  
 Mode: Alert statistics

Management pack	Monitor/Rule	Alert	Count #1	% of Total #1	Count #2	% of Total #2
<input type="checkbox"/> Data Warehouse Internal Library	M: Data Warehouse Event Data Collection Writer Periodic Data Maintenance Recovery State	Data Warehouse event data writer process failed to perform maintenance operation	19	40.43 %	27	87.10 %
<b>Top Level Entity</b>	<b>Path</b>	<b>Source</b>	<b>Count #1</b>	<b>% of Total #1</b>	<b>Count #2</b>	<b>% of Total #2</b>
x8r2.veeam.local	x8r2.veeam.local	x8r2.veeam.local	19	100.00 %	27	100.00 %
<input type="checkbox"/> System Center Core Monitoring	M: Web Console Watcher Monitor	Operations Manager Web Console Unavailable	2	4.26 %	1	3.23 %
<b>Top Level Entity</b>	<b>Path</b>	<b>Source</b>	<b>Count #1</b>	<b>% of Total #1</b>	<b>Count #2</b>	<b>% of Total #2</b>
x8r2.veeam.local	x8r2.veeam.local	Web Console Watcher(x8r2.veeam.local)	2	100.00 %	1	100.00 %
<input type="checkbox"/> Data Warehouse Internal Library	M: Data Warehouse Performance Data Collection Writer Periodic Data Maintenance Recovery State	Data Warehouse performance data writer process failed to perform maintenance operation	1	2.13 %	1	3.23 %
<input type="checkbox"/> nworks VMware VEM MP	M: nworks: EMServers: Collector Heartbeat Monitor	nworks: EMServers: Collector is unreachable	2	4.26 %	1	3.23 %

The following table describes report data in detail.

Column	Description
<b>Top Level</b>	
Management Pack	Management pack from which alerts originate.
Monitor/Rule	Name of a monitor or rule that triggered alerts.
Alert	Name of the alert.
Count #1	Number of times the alert was raised for the first time interval.
% of Total #1	Alert share for the first time interval (relative to the number of all alerts included in the report).
Count #2	Number of times the alert was raised for the second time interval. The arrows show if the alert quantity (Count) has decreased (green arrow), increased (red arrow) or stayed the same (blue equality symbol) during the second interval in comparison with the first one.
% of Total #2	Alert share for the second time interval (relative to the number of all alerts included in the report).
<b>Details Level</b>	
Top Level Entity	Parent entity of the object that caused the alerts.
Path	Path to the object that caused alerts.
Source	Name of the object that caused alerts.
Count #1	Number of alerts raised for the object for the first time interval.
% of Total #1	Alert share for the first time interval (relative to all alerts included into report).
Count #2	Number of alerts raised for the object for the second time interval. The arrows show if the alert quantity (Count) has decreased (green arrow) or increased (red arrow) during the second interval in comparison with the first interval.
% of Total #2	Alert share for the second time interval (relative to all alerts included into report).

You can also click a number in the **Count #1** and **Count #2** columns of the output table to drill down to the [Veeam Alert History Report](#).

# VEEAM ALERT HISTORY REPORT

The **Veeam Alert History Report** shows information on alerts raised for infrastructure objects across a time range. It provides a detailed alerting history and helps to identify the most affected infrastructure objects.

The report helps you to review the health state of the environment for the specified time range in the past. It details how many alerts with different severity and priority levels were raised on each day of the reporting period.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam Alert History Report. Consider the following example:

*You need to obtain a list of critical and warning alerts that were recorded for Windows computers during this month. You want to analyze what the high priority alerts were raised and how the number of alerts was changing.*

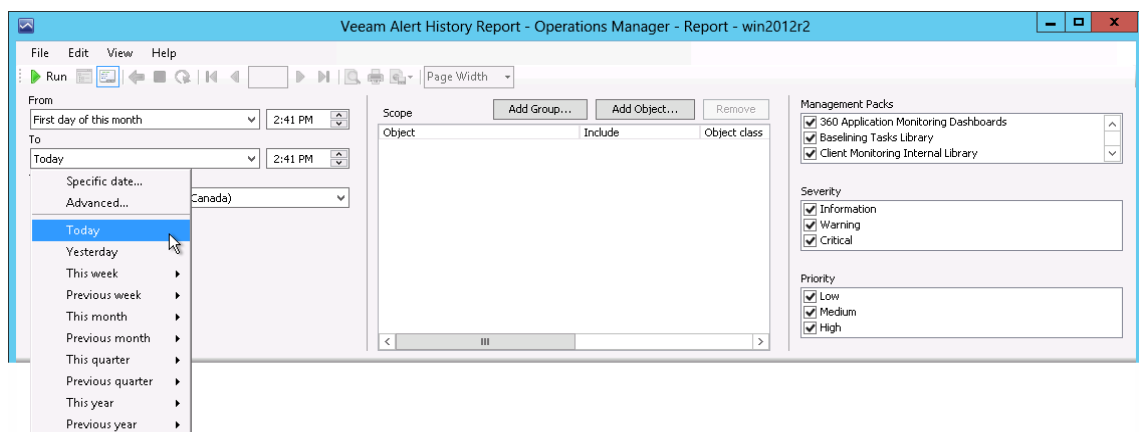
## Step 1. Open Veeam Alert History Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Alert History Report**. Alternatively, right-click the **Veeam Alert History Report** in the Reporting Pane and choose **Open**.

## Step 2. Define Time Intervals

Next, you need to define the time range for the report. In this example, the report will analyze the alerting history for the current month.

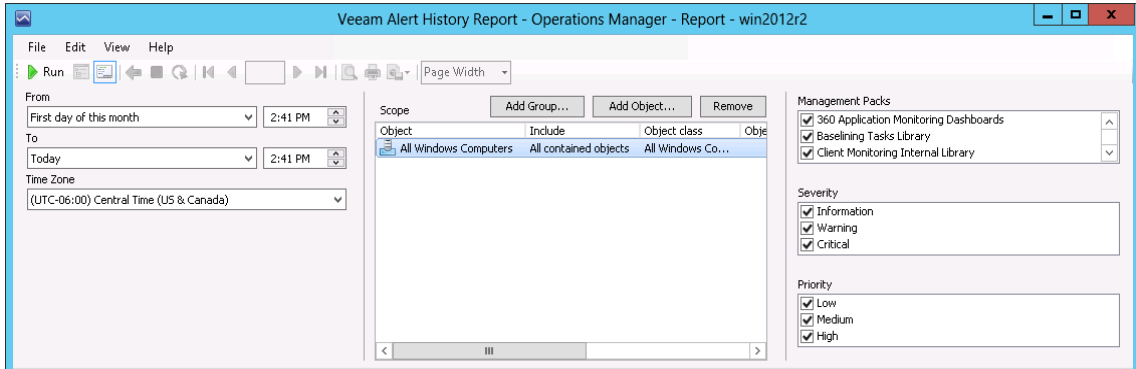
1. From the **From** list, choose *This Month > First Day*.
2. From the **To** list, choose *Today*.



## Step 3. Choose Report Scope

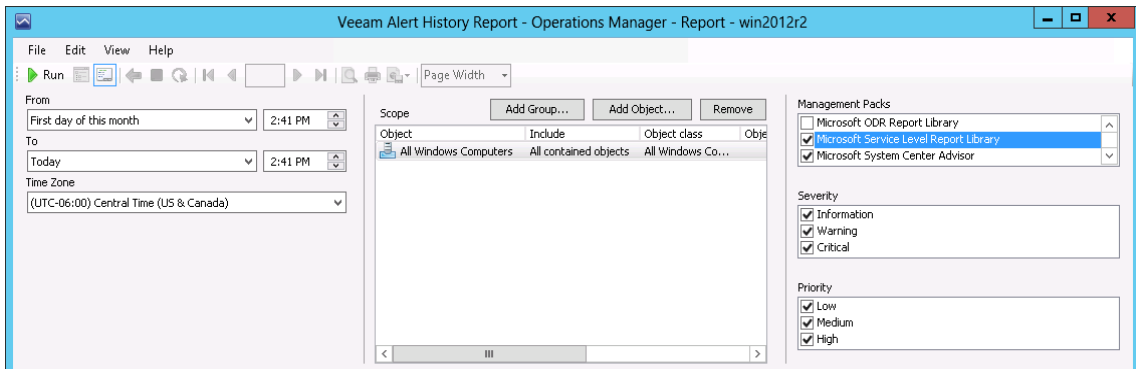
Define a list of groups or objects for which alert history will be analyzed. In this example, we will analyze alerting history for managed computers included in the All Windows Computers group.

1. In the **Scope** section, click *Add Group*.
2. In the **Object Name** search box, type *"all windows computers"* and click **Search**. Select the *All Windows Computers* group, click **Add** and click **OK**.



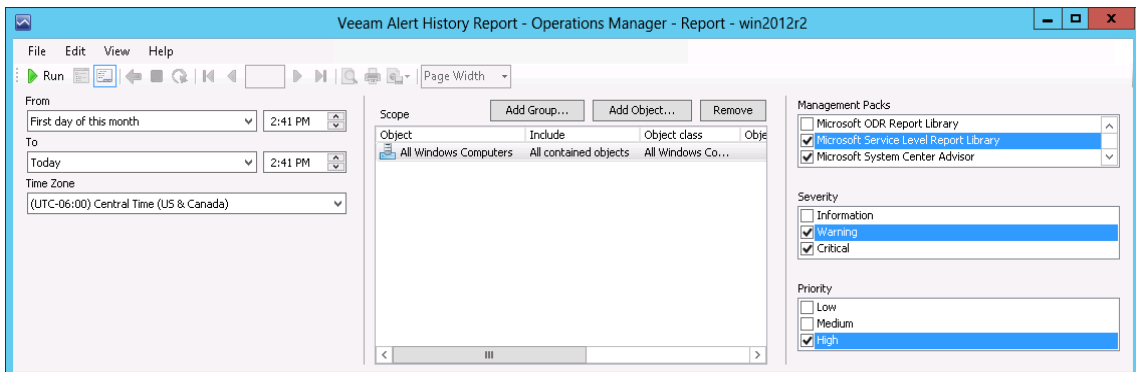
## Step 4. Choose Management Packs

In the **Management Packs** section, select management packs that will be included in the report. By default, all installed MPs are selected.



## Step 5. Choose Alert Severity and Priority

In the **Severity** and **Priority** sections, select severity level and priority for the alerts that will be included in the report. In this example, we will choose critical and warning alerts of high priority.



# Step 6. Run the Report

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

## Report Output

The **Alerts by Severity per Day** chart will show the number of alerts raised for each day of the week. The chart bars will illustrate how many *Warning* and *Critical* alerts were raised.

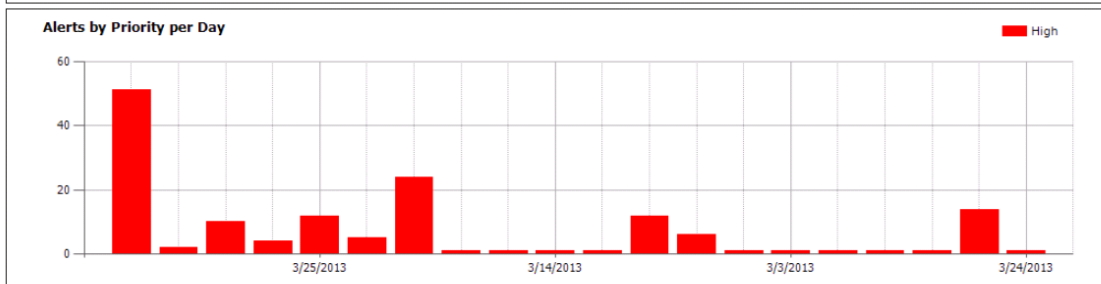
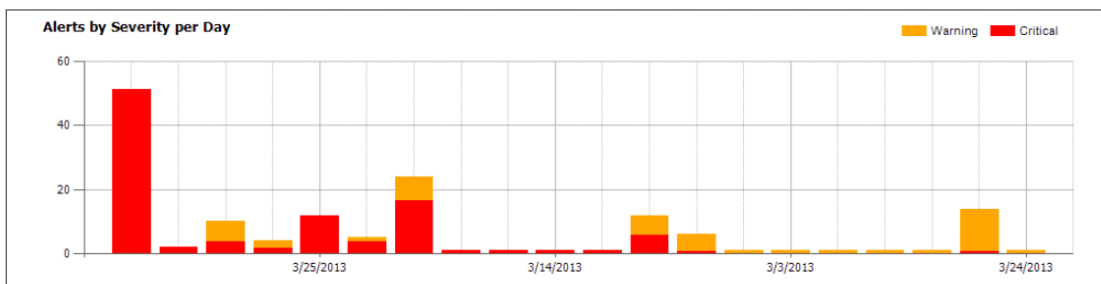
The **Alerts by Priority per Day** chart will show the number of alerts raised for each day of the week.



### Alert History

Report description:

Report parameters:



Object	Monitor/Rule	Alert	Raised	Repeat Count
Type: Microsoft.SystemCenter.ManagementID DataAccessService Path: SQL.veeam.local Name: Data Access Service - SQL.veeam.local	M: Microsoft.SystemCenter.DataAccessService.DatabaseConnectivity	<b>Severity: Critical</b> <b>Priority: High</b> <b>Database connectivity is lost</b> The Data Access service has lost connectivity to the database.	3/18/2013 9:34:42 AM	0
Type: Microsoft.SystemCenter.ManagementID DataAccessService Path: SQL.veeam.local Name: Data Access Service - SQL.veeam.local	M: Microsoft.SystemCenter.DataAccessService.DatabaseConnectivity	<b>Severity: Critical</b> <b>Priority: High</b> <b>Database connectivity is lost</b> The Data Access service has lost connectivity to the database.	3/18/2013 3:29:40 PM	0
Type: Microsoft.SystemCenter.ManagementID DataAccessService Path: SQL.veeam.local Name: Data Access Service - SQL.veeam.local	M: Microsoft.SystemCenter.DataAccessService.DatabaseConnectivity	<b>Severity: Critical</b> <b>Priority: High</b> <b>Database connectivity is lost</b> The Data Access service has lost connectivity to the database.	3/21/2013 5:10:58 AM	0
Type: Microsoft.SystemCenter.ManagementID DataAccessService Path: SQL.veeam.local Name: Data Access Service - SQL.veeam.local	M: Microsoft.SystemCenter.DataAccessService.DatabaseConnectivity	<b>Severity: Critical</b> <b>Priority: High</b> <b>Database connectivity is lost</b> The Data Access service has lost connectivity to the database.	3/18/2013 4:27:28 PM	0
Type: Microsoft.SystemCenter.ManagementID DataAccessService Path: SQL.veeam.local Name: Data Access Service - SQL.veeam.local	M: Microsoft.SystemCenter.DataAccessService.DatabaseConnectivity	<b>Severity: Critical</b> <b>Priority: High</b> <b>Database connectivity is lost</b> The Data Access service has lost connectivity to the database.	3/18/2013 4:36:28 PM	0



The report table will detail alert information:

Column	Description
Object	Name of the infrastructure object that caused alerts.
Monitor/Rule	Name of a monitor or rule that triggered alerts.
Alert	Severity level, priority level and description of an alert.
Raised	The date and time when the alert was triggered last.
Repeat Count	Number of times that the alert was repeated.

# VEEAM PERFORMANCE REPORT

The **Veeam Performance Report** aggregates historical data and visualizes performance counter values on one or multiple charts and tables. This report extends the functionality of the Microsoft Performance Report available in the Microsoft Generic Report Library. The following table provides a feature comparison for Microsoft and Veeam reports.

Report Feature	Microsoft	Veeam
Separate series for group average values	Yes	Yes
Separate series for object average values	No	Yes
Separate series for instance average values	No	Yes
Random line colors on the chart	No	Yes
Details table contains average values for the selected period	Yes	Yes
Details table contains daily/hourly values for the selected period	No	Yes
Interactive table	Yes	Yes

A detailed description of advanced Veeam Performance Report features is provided below.

## Three Levels of Detail: Group, Object, Instance

For every data series, the Veeam Performance Report can draw separate series within the same series group:

- Group average values — aggregated performance data for the entire scope of the series group.
- Object average values — aggregated performance data for all performance counter instances collected for the same monitoring object.
- Instance average values — aggregated performance data for the same monitoring object and performance counter instance.

## Random Colors

To make it easier to read the chart where several series belong to the same series group, the Veeam Performance Report allows using random colors for separate series lines.

## Daily/Hourly Values in the Detail Table

The Veeam Performance Report does not require opening miscellaneous sub-reports to view details. The report table contains additional sections that show hourly/daily average values for the collection rule, objects and performance counter instances. By default, these sections are collapsed.

## Interactive Table

To obtain a detailed performance statistics for specific objects or performance counter instances, you can drill down to the [Veeam Performance Details Report](#) directly from the report page, using links in the **Rule, Object, Instance** column in the table.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam Performance Report. Consider the following example:

*Full transaction logs can make your SQL database unusable. If you have autogrowth disabled, you should proactively monitor free space available in the transaction log files to prevent transaction logs from being completely full and to ensure that your database will continue operating normally.*

The Veeam Performance Report can help you analyze the amount of free space in transaction log files. The following example explains how to create a report that shows the transaction log file free space changing over time. Based on this report, you can decide if database recovery model or backup plan should be adjusted or other corrective changes should be applied.

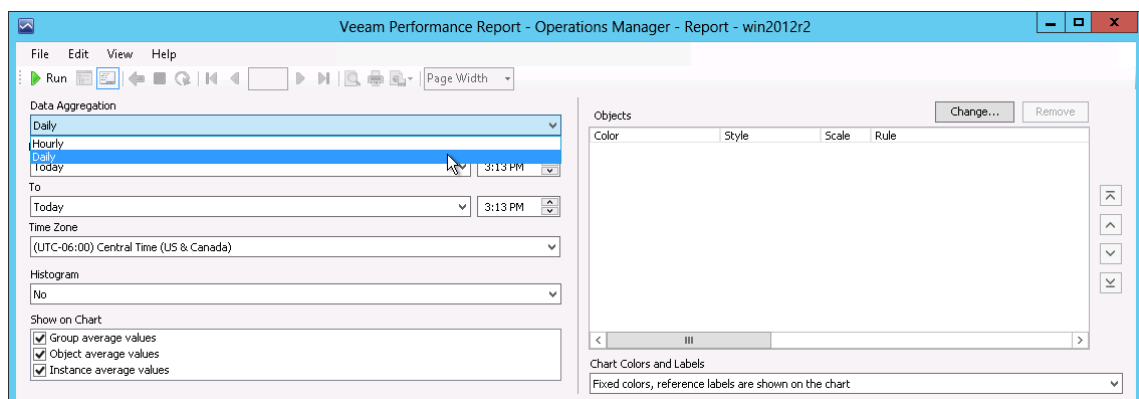
**Note** To follow the usage instructions, you must have the SQL Server Monitoring Management Pack installed.

## Step 1. Open Veeam Performance Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Performance Report**. Alternatively, right-click the **Veeam Performance Report** and choose **Open**.

## Step 2. Choose Data Aggregation Level

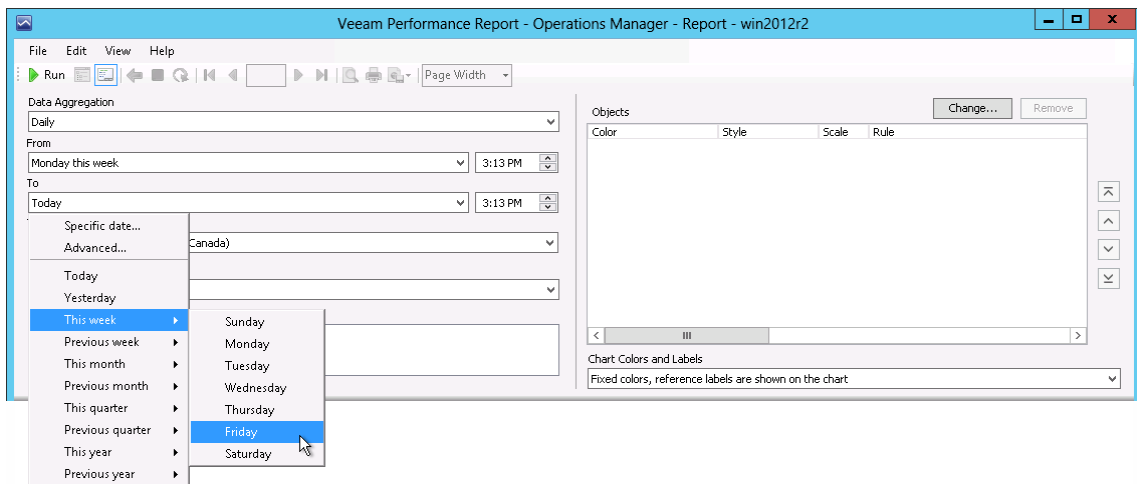
From the **Data Aggregation** list, choose the level of data aggregation — hourly or daily. Since we need to see how the amount of free space was changing throughout the week, we will choose the *Daily* aggregation level.



## Step 3. Define Time Intervals

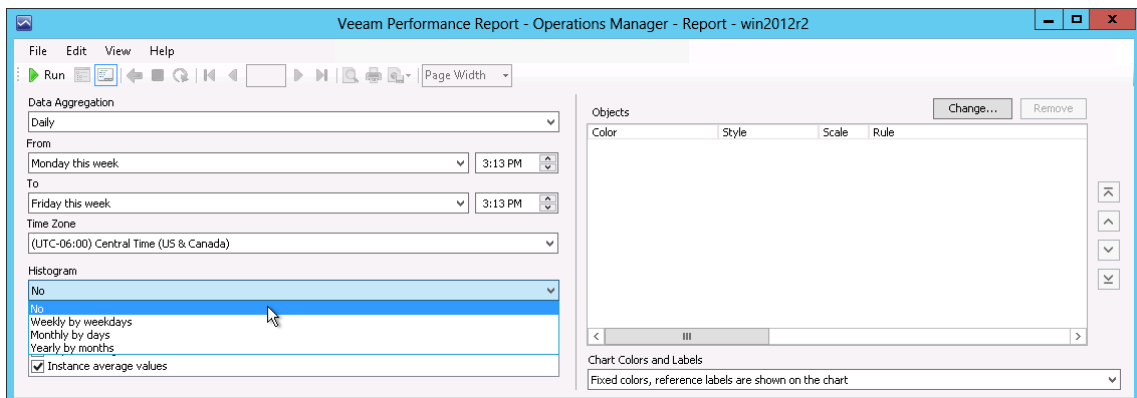
Next, you need to choose the time range for the report.

In our example, the report will display statistics for one week. From the **From** list, choose *This Week > Monday*. From the **To** list, choose *This Week > Friday*.



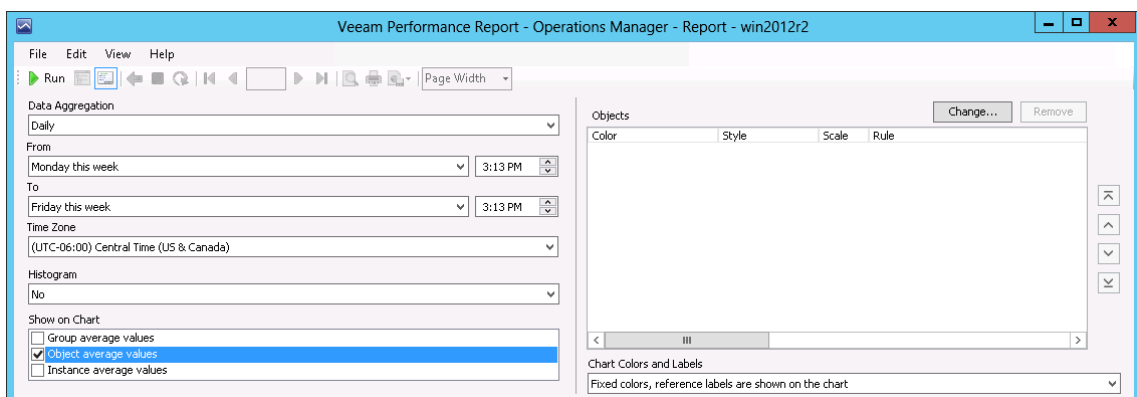
## Step 4. Define Chart Display Options

From the **Histogram** list, choose what type of values will be displayed on the x-axis of the report chart.



## Step 5. Choose Values to Show on Chart

Next, choose what types of values will be displayed as series on the chart. We will choose to show only object average values — so, every series will represent how the amount of free space of a specific log file was changing.



## Step 6. Add Chart and Data Series

Next, you need to add a new chart, data series groups for the chart and define the following settings for every data series group: the report scope and collection rule.

1. Click **Change** in the **Objects** section.
2. Click **New Chart** and enter the chart name in the **Chart title** field.
3. Click **New Series** and define the style and color for the series group.
4. Define the report scope (see [Step 7. Choose Report Scope](#)) and choose a collection rule (see [Step 8. Choose Collection Rule](#)) for the chart series.
5. When finished, click **OK** in the **Settings** window to go back to the report parameters.

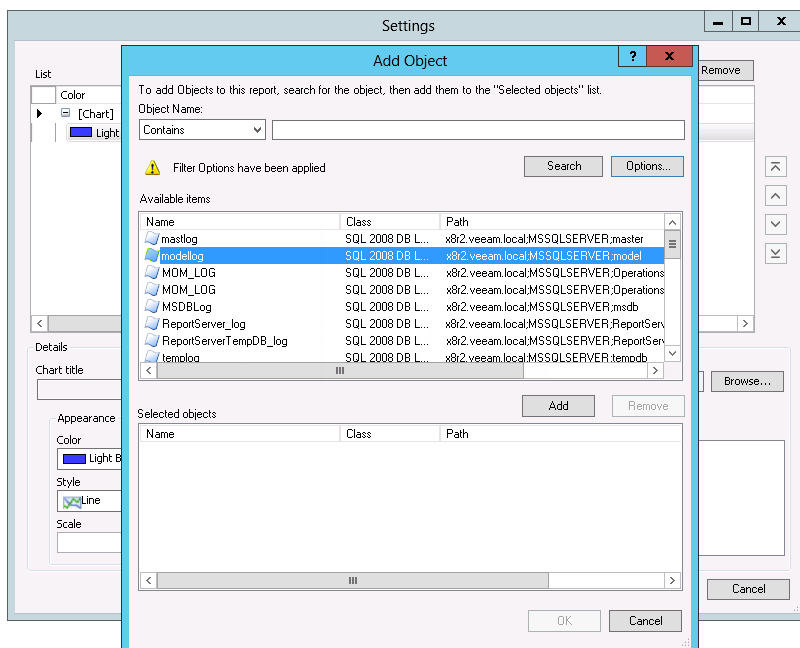
If necessary, you can include multiple charts in the same report and add multiple series groups within the same chart.

## Step 7. Choose Report Scope

Next, make up a list of groups or objects to analyze in the report.

In our example, we need to include log files in the report scope. To find the necessary log files, we will apply a filter that will return all objects of the SQL DB Log File class.

1. In the **Scope** section, click **Add Object**.
2. In the **Add Object** window, click **Options**.
3. In the **Options** window, click **Add**.
4. In the **Class Name** search box, type *"DB log"* and click **Search**. Select the *SQL DB Log File* class in the list of search results, click **Add** and click **OK**.
5. In the **Options** windows, click **OK** to apply the filter.
6. In the **Add Object** window, click **Search**. The search will return a list of objects that belong to the *SQL DB Log File* class.
7. Select the necessary objects in the list, click **Add** and click **OK**.



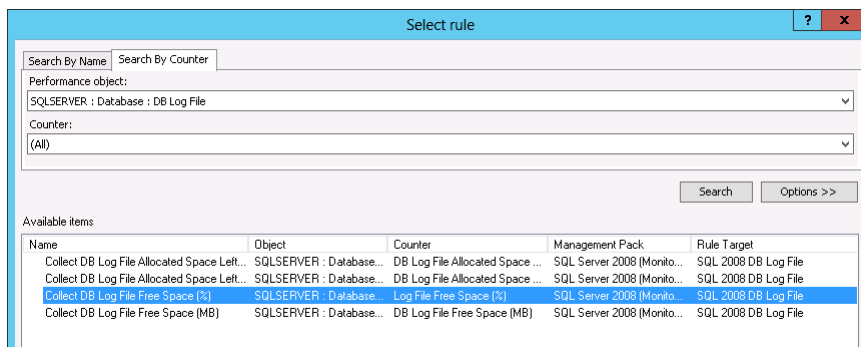
## Step 8. Choose Collection Rule

Next, you need to choose a collection rule.

When you choose a collection rule, make sure that it correlates with objects included in the report scope. Every rule targets a particular class of objects. Objects included in the report scope must belong to a class that is targeted by the rule. If the scope includes a group of objects, this group must contain objects belonging to the class that is targeted by the rule.

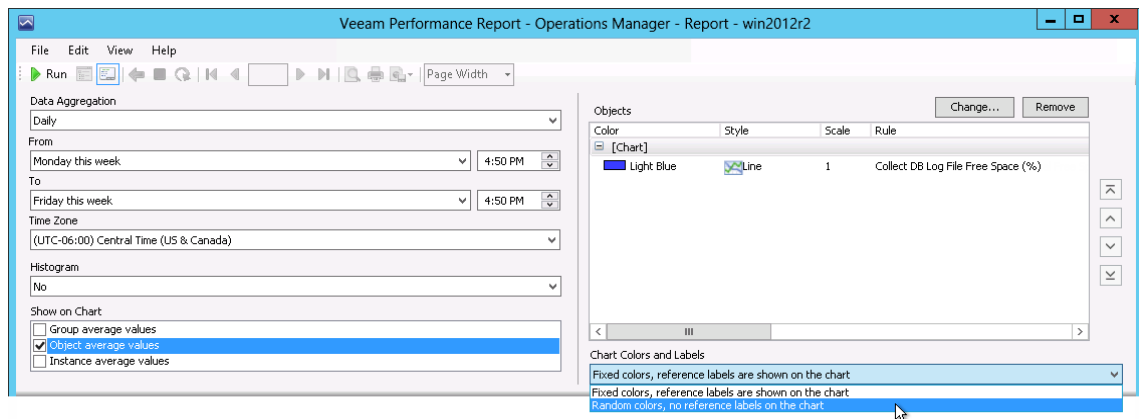
In our example, we need to choose a rule that collects the amount of free space left for objects of the *SQL DB Log File* class.

1. In the **Rule** section, click **Browse**.
2. In the **Select rule** window, open the **Search By Counter** tab; from the **Performance object** list, choose *SQLSERVER : Database : DB Log File* and click **Search**.
3. Choose the *Collect DB Log File Free Space (%)* rule in the list of search results and click **OK**.



## Step 9. Choose Chart Style Options

From the **Chart Colors and Labels** list, choose *Random colors, no reference labels on the chart*. The use of this option will make it easier to read the chart as every series will be drawn with its own color.



## Step 10. Run the Report

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

# Report Output

The report will show how the amount of free space in transaction log files was changing during the specified time interval.

The chart will display a separate series for each log file. The table will detail daily values of the log file free space (sample count, average, minimum and maximum and standard deviation values).

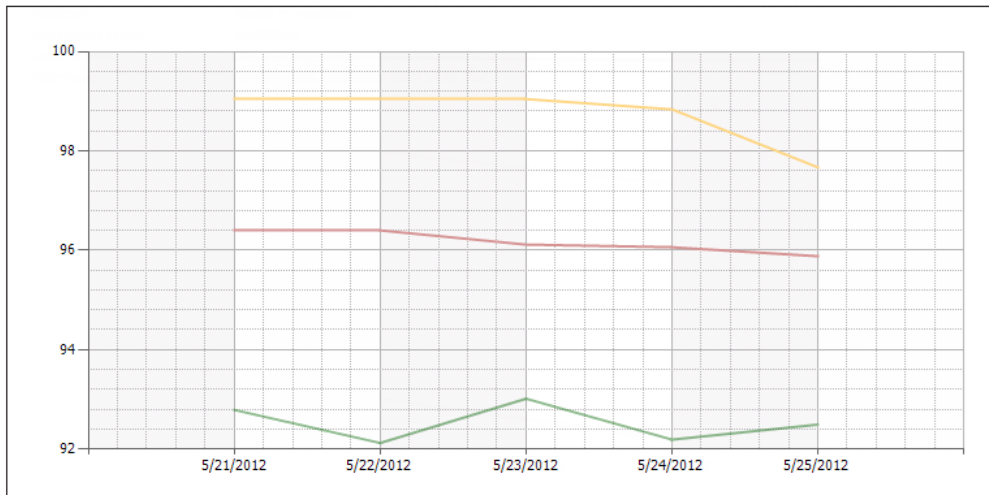


## Performance

▣ Report description:

▣ Report parameters:

### Section #1



This function has been used to aggregate data and draw respective charts for rules below: **Avg**

Rule, Object, Instance	Scale	Sample Count	Min Value	Max Value	Average Value	Standard Deviation
<b>SQLSERVER : Database : DB Log File\DB Log File Free Space (%) (MSSQL 2008: Collect DB Log File Free Space (%))</b>						
Management group: xMainGroup Path: x8r2.veeam.local\MSSQLSERVER:Operations:Manager Name: MOM_LOG Type: SQL Server 2008 DB Log File						
<b>Object average values</b>	<b>1</b>	<b>244</b>	<b>84.49</b>	<b>99.16</b>	<b>92.52</b>	<b>3.68</b>
5/20/2012 9:00 AM		49	86.59	98.47	92.79	3.90
5/21/2012 9:00 AM		49	85.60	98.31	92.12	3.74
5/22/2012 9:00 AM		48	87.29	99.16	93.01	3.70
5/23/2012 9:00 AM		49	84.49	98.06	92.19	3.54
5/24/2012 9:00 AM		49	87.06	99.03	92.49	3.51
<b>Included Instances</b>						

You can click performance rules in the output table to drill down to the [Veeam Performance Details Report](#).

# VEEAM PERFORMANCE DETAILS REPORT

The **Veeam Performance Details Report** aggregates historical data and visualizes performance counter values. This report extends the functionality of the Microsoft Performance Detail Report available in the Microsoft Generic Report Library. The following table provides a feature comparison for Microsoft and Veeam reports.

Report Feature	Microsoft	Veeam
Details table contains average values for the selected period	Yes	Yes
Daily/hourly values in the detail table	Yes	Yes
Separate series for every Object/Group	Yes	Yes
Trend analysis	No	Yes*

A detailed description of advanced Veeam Performance Details Report features is provided below.

## Trend Analysis

In addition to the average, minimum/maximum, standard deviation and sample count series, the Veeam Performance Details Report chart also displays a separate series that illustrates the performance trend. The performance trend is based on historical data collected for the reporting time interval.

**Note** Performance trend will not be available if you set the **Histogram** parameter to any other value than *No*.

## Drilling Down to Performance Details

To obtain a detailed performance statistics for specific objects or performance counter instances, you can drill down to data collected for these entities, using links in the **Included Objects** section.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam Performance Details Report. Consider the following example:

*To ensure that your SQL server can adequately handle all connections, you need to monitor the number of user connections. This will let you trend when your SQL Server is being used more and less during the day, explain spikes in other counters or plan future hardware needs if there is a growing trend.*

The Veeam Performance Details Report can help you analyze the number of user connections to the SQL Server. The following example explains how to create a report showing how the number of user connections changes during the day.

**Note** To follow the usage instructions, you must have the SQL Server Monitoring Management Pack installed.

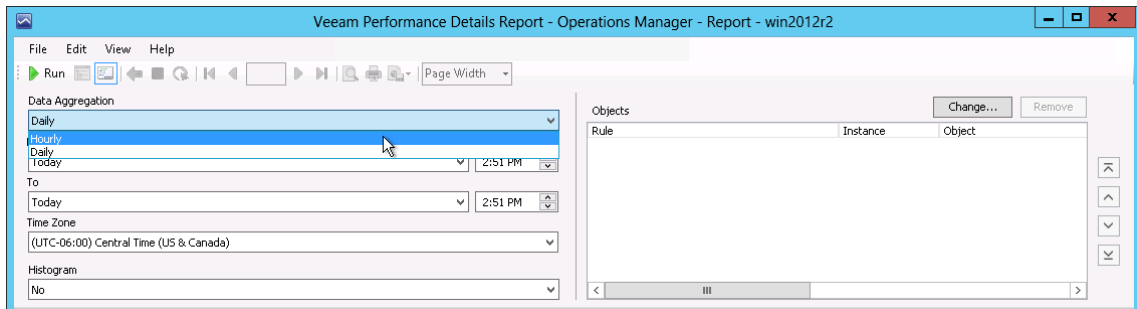


## Step 1. Open Veeam Performance Details Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Performance Details Report**. Alternatively, right-click the **Veeam Performance Details Report** and choose **Open**.

## Step 2. Choose Data Aggregation Level

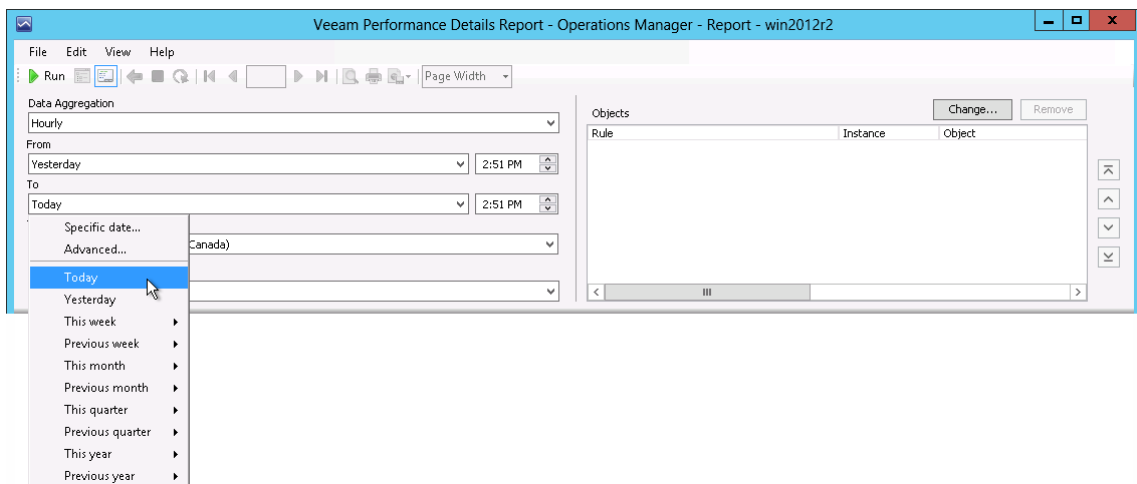
From the **Data Aggregation** list, choose the level of data aggregation — hourly or daily. Since we need to display detailed performance data and see how the number of user connections changes throughout the day, we will choose the *Hourly* aggregation level.



## Step 3. Define Time Intervals

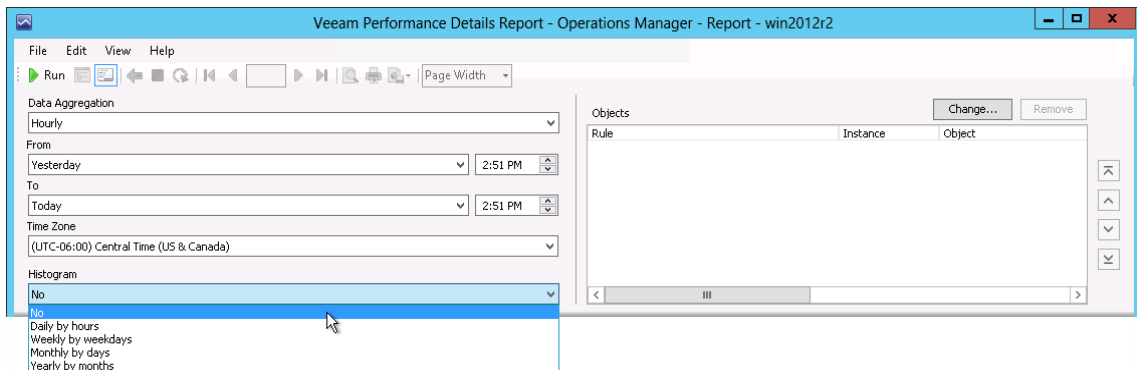
Next, you need to choose the time range for the report.

In our example, the report will display statistics for one day. From the **From** list, choose *Yesterday*. From the **To** list, choose *Today*.



## Step 4. Choose Histogram Type

From the **Histogram** list, choose what type of values will be displayed on the x-axis of the report chart. Since we want to show the performance trend, we will choose *No* from the list (otherwise, the trend series will not be shown on the report chart).



## Step 5. Add Data Series

Add data series groups for the report chart and define the following settings for every data series group: the report scope and collection rule.

1. Click **Change** in the **Objects** section.
2. Click **New Series** and select style and color for this series group.
3. Define the report scope (see [Step 6. Choose Report Scope](#)) and choose a collection rule (see [Step 7. Choose Collection Rule](#)) for the chart series.
4. When finished, click **OK** in the **Settings** window to go back to the report parameters.

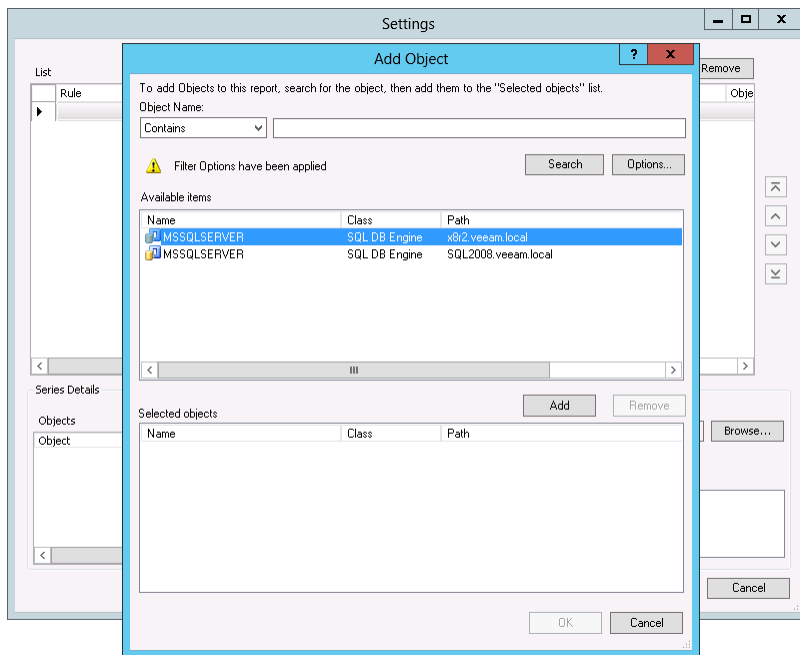
If necessary, you can add multiple series within the same chart.

## Step 6. Choose Report Scope

Next, make up a list of groups or objects to analyze in the report.

In our example, we need to include in the report scope for the database engine. To find the necessary database engine, we will apply a filter that will return all objects of the *SQL DB Engine* class.

1. In the **Scope** section, click **Add Object**.
2. In the **Add Object** window, click **Options**.
3. In the **Options** window, click **Add**.
4. In the **Class Name** search box, type "DB engine" and click **Search**. Select the *SQL DB engine* class in the list of search results, click **Add** and click **OK**.
5. In the **Options** windows, click **OK** to apply the filter.
6. In the **Add Object** window, click **Search**. The search will return a list of objects that belong to the *SQL DB Engine* class.
7. Select the necessary objects in the list, click **Add** and click **OK**.



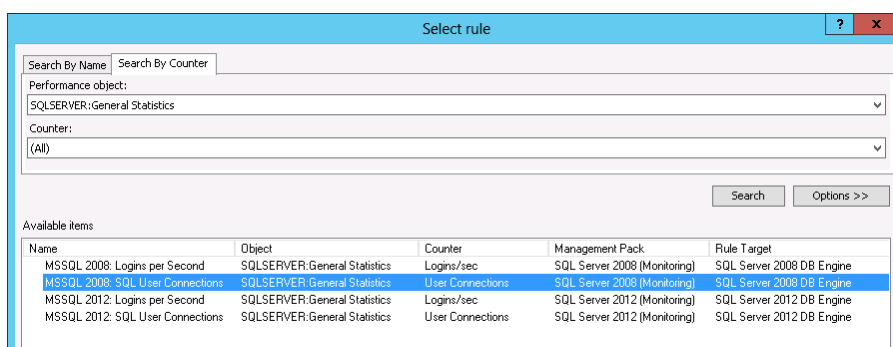
## Step 7. Choose Collection Rule

Choose a collection rule.

When you choose a collection rule, make sure that it correlates with objects included in the report scope. Every rule targets a particular class of objects. Objects included in the report scope must belong to a class that is targeted by the rule. If the scope includes a group of objects, this group must contain objects belonging to the class that is targeted by the rule.

In our example, we need to choose a rule that collects the number of user connections for objects of the *SQL DB Engine* class.

1. In the **Rule** section, click **Browse**.
2. In the **Select rule** window, open the **Search By Counter** tab; from the **Performance object** list, choose *SQLSERVER:General Statistics* and click **Search**.
3. Choose the *SQL User Connections* rule in the list of search results and click **OK**.



## Step 8. Run the Report

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

# Report Output

The report will detail how the number of user connections to the SQL Server has changed during the day.

The chart will include separate series for minimum, maximum, average number of user connections, standard deviation and trend. The table will show the following values for every hour: sample count, average, minimum and maximum and standard deviation values.

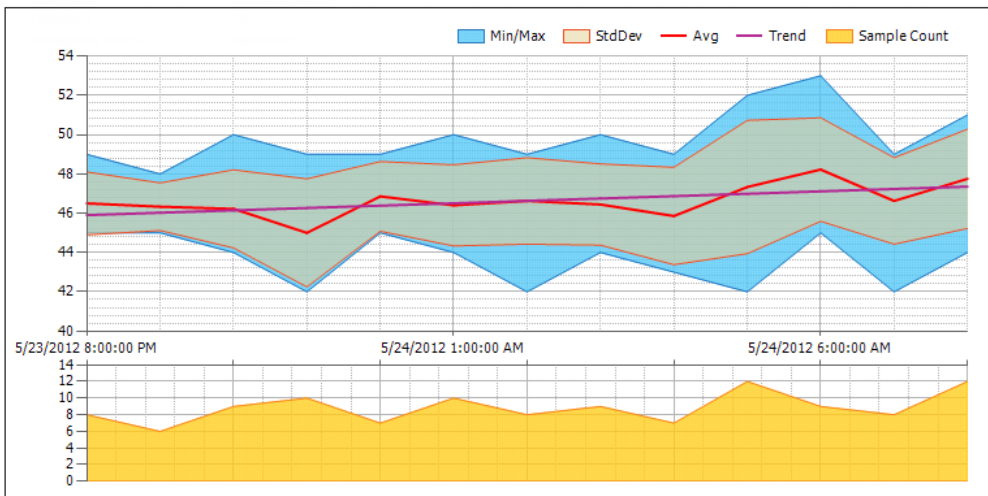


## Performance Details

Report description:

Report parameters:

Rule: MSSQL 2008: SQL User Connections



Rule: SQLSERVER:General Statistics\User Connections (MSSQL 2008: SQL User Connections)

Included Objects

Management group: xMainGroup  
 Path: SQL2008.veeam.local  
 Name: MSSQLSERVER  
 Type: SQL DB Engine

Included Instances

Interval	Sample Count	Min Value	Max Value	Average Value	Standard Deviation
<b>Rule values</b>	<b>115</b>	<b>42.00</b>	<b>53.00</b>	<b>46.68</b>	<b>2.36</b>
5/23/2012 8:00 PM	8	45.00	49.00	46.50	1.60
5/23/2012 9:00 PM	6	45.00	48.00	46.33	1.21
5/23/2012 10:00 PM	9	44.00	50.00	46.22	1.99
5/23/2012 11:00 PM	10	42.00	49.00	45.00	2.75
5/24/2012 12:00 AM	7	45.00	49.00	46.86	1.77
5/24/2012 1:00 AM	10	44.00	50.00	46.40	2.07
5/24/2012 2:00 AM	8	42.00	49.00	46.63	2.20
5/24/2012 3:00 AM	9	44.00	50.00	46.44	2.07

# VEEAM PERFORMANCE TOP (BOTTOM) N REPORT

The **Veeam Performance Top (Bottom) N Report** aggregates historical performance data and shows top or bottom N infrastructure objects, performance counter instances, or both, for a specific rule. This report extends the functionality of the Microsoft Performance Top Instances and Performance Top Objects reports available in the Microsoft Generic Report Library. The following table provides a feature comparison for Microsoft and Veeam reports.

Report Feature	Microsoft	Veeam
<b>Grouping options</b>	Objects - OR - Performance counter instances	Objects - OR - Performance counter instances - OR - Objects and Performance counter instances
<b>Scope selection</b>	Objects - OR - Performance counter instances	Objects - OR - Performance counter instances - OR - Objects and Performance counter instances
<b>Sorting by aggregate functions</b>	Avg	Avg, Min, Max, Sum
<b>Data aggregation type</b>	Daily	Daily, Hourly
<b>Interactive chart and table</b>	Yes	Yes

A detailed description of advanced Veeam Performance Top (Bottom) N Report features is provided below.

## Grouping Options

The Veeam Performance Top (Bottom) N Report allows you to group report statistics by the following criteria: *objects*, *performance counter instances*, *objects and performance counter instances*.

## Scope Selection

The Veeam Performance Top (Bottom) N Report allows you to include in the report scope any objects from the managed environment. In case there are several performance counter instances, you can choose to build the report for selected instances or use all of them.

## Sorting by Aggregate Functions

The Veeam Performance Top (Bottom) N Report allows you to sort results on the report chart and in the table by the following aggregate functions: *average*, *maximum*, *minimum* or *summation*.

## Data Aggregation Level

The Veeam Performance Top (Bottom) N Report offers two aggregation levels: daily for intervals longer than or equal to 25 hours or hourly for intervals shorter than 25 hours.

## Interactive Chart and Table

To obtain a detailed performance statistics for specific objects and performance counter instances, you can drill down to the Veeam Performance Details Report directly from the report page.

**Note** Navigation to the Veeam Performance Details Report is not supported if the **Group by** parameter is set to *Counter* instance.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam Performance Top (Bottom) N Report. Consider the following example:

*To maintain a successful database environment, you need to keep an eye on free space within the databases. Particularly, you need to regularly check what databases are running low on space.*

The Veeam Performance Top (Bottom) N Report can help you analyze the amount of free space left within databases. The following example explains how to create a report showing 10 databases with the least amount of free space.

**Note** To follow the usage instructions, you must have the SQL Server Monitoring Management Pack installed.

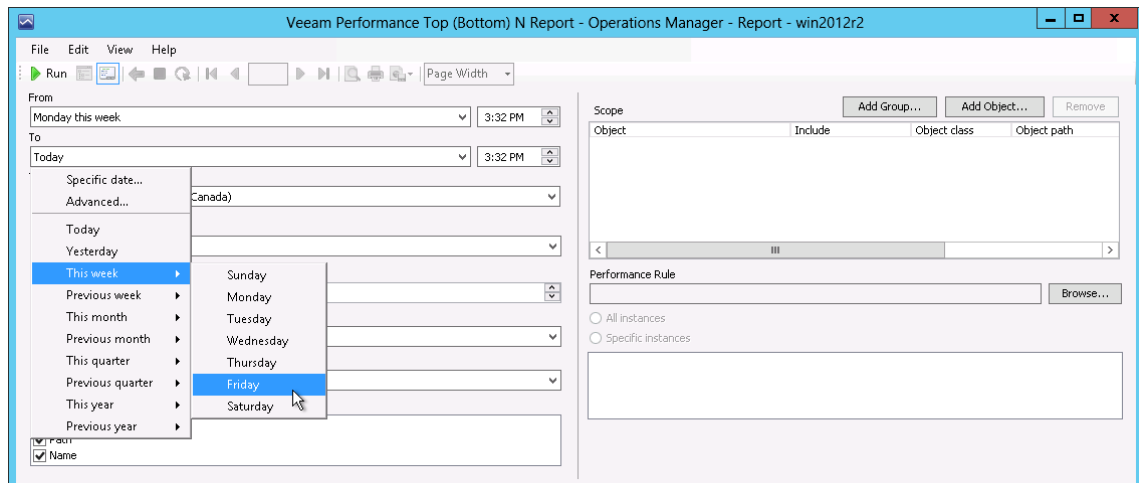
## Step 1. Open Veeam Performance Top (Bottom) N Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Performance Top (Bottom) N Report**. Alternatively, right-click the **Veeam Performance Top (Bottom) N Report** and choose **Open**.

## Step 2. Define Time Intervals

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

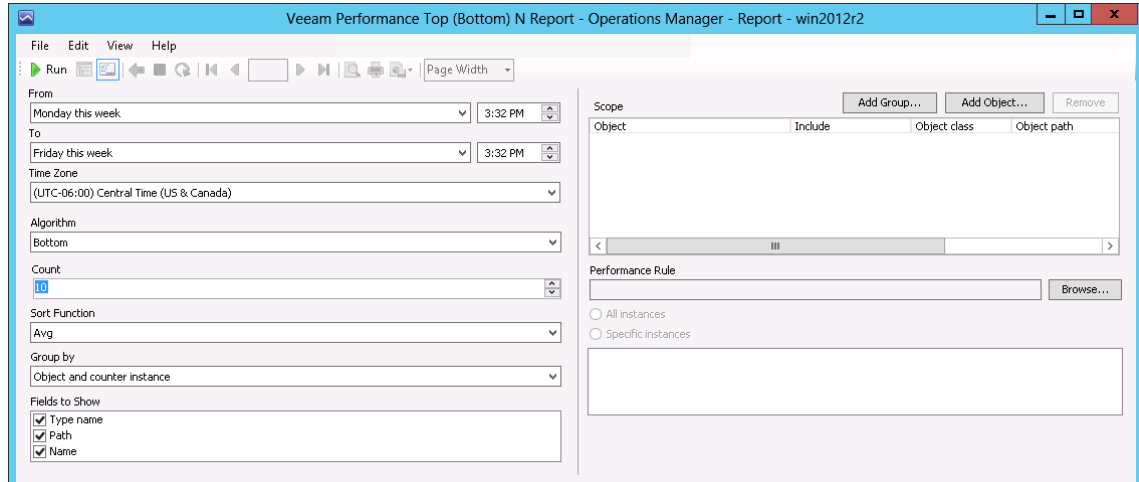
In our example, the report will analyze performance statistics for the current week. From the **From** list, choose *This Week > Monday*. From the **To** list, choose *This Week > Friday*.



## Step 3. Choose Report Algorithm

Define whether the report will display top or bottom objects/performance counter instances and specify the number of objects/instances that will be included in the report (the number of objects/instances can range between 1 and 200).

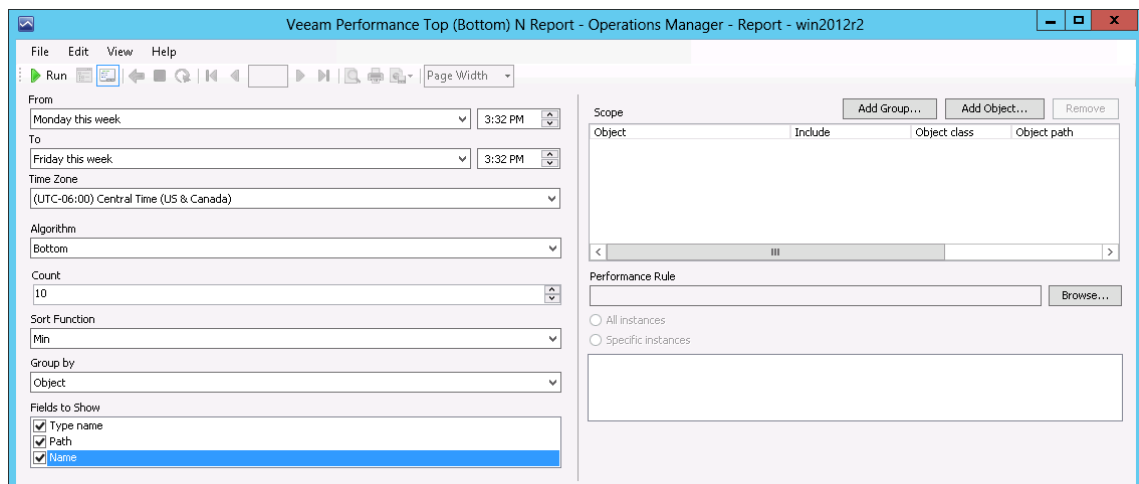
As we need to report on 10 databases with the least amount of free space, we will choose *Bottom* from the **Algorithm** list and type *10* in the **Count** field.



## Step 4. Define Sorting, Grouping and Display Parameters

Define sorting, grouping and display parameters for the report.

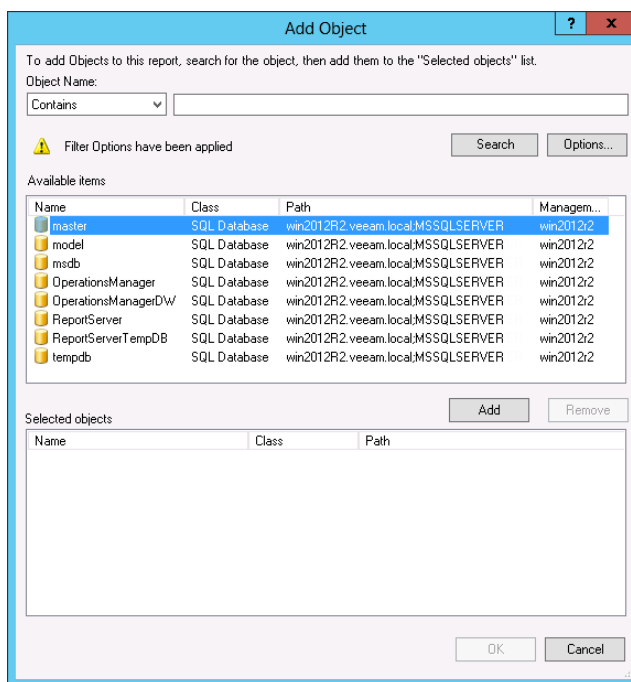
1. From the **Sort Function** list, choose the sorting criterion. In this example, we will select *Min* to range report results from minimum to maximum.
2. From the **Group by** list, choose the grouping option. In our case, we will choose to group results by *Object*.
3. In the **Fields to Show** list, select what types of object properties will be displayed in the **Object** column of the report table. The properties will be shown as links that you can use to drill down to the [Veeam Performance Details Report](#). In our example, we will select all available options.



## Step 5. Choose Report Scope

Next, make up a list of groups or objects to analyze in the report. We need to include in the report scope all managed databases. To find databases, we will apply a filter that will return all objects of the *SQL Database* class.

1. In the **Scope** section, click **Add Object**.
2. In the **Add Object** window, click **Options**.
3. In the **Options** window, click **Add**.
4. In the **Class Name** search box, type "*sql database*" and click Search. Select the *SQL Database* class in the list of search results, click **Add** and click **OK**.
5. In the **Options** windows, click **OK** to apply the filter.
6. In the **Add Object** window, click **Search**. The search will return a list of objects that belong to the *SQL Database* class.
7. Select all objects in the list, click **Add** and click **OK**.





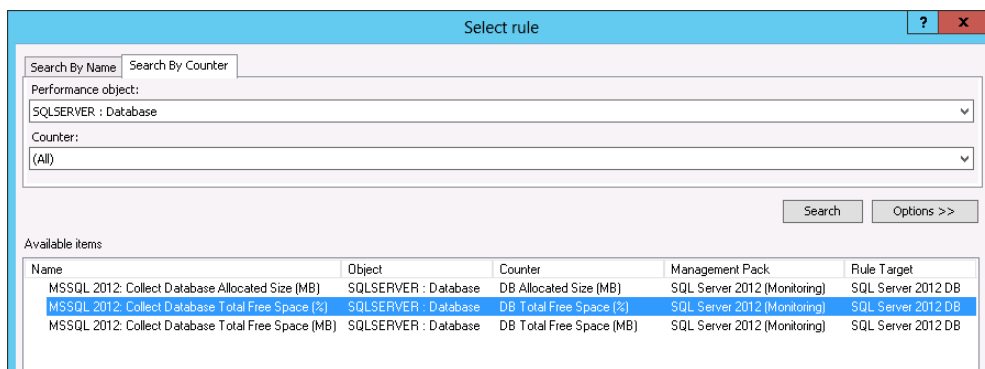
## Step 6. Choose Collection Rule

Next, choose a collection rule. Every rule targets a specific class and collects a chunk of performance data (*counter*) for *objects* of this class.

When you choose a collection rule, make sure that it correlates with objects included in the report scope. Objects included in the report scope must belong to a class that is targeted by the rule. If the scope includes a group of objects, this group must contain objects belonging to the class that is targeted by the rule.

In our example, we need to choose a rule that collects details on the amount of free space for objects of the *SQL database* class.

1. In the **Performance Rule** section, click **Browse**.
2. In the **Select rule** window, open the **Search By Counter** tab; from the **Performance object** list, choose *SQLSERVER : Database* and click **Search**.
3. Choose the *Collect Database Total Free Space (%)* rule in the list of search results and click **OK**.



## Step 7. Run the Report

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

# Report Output

The report includes a chart and a table. The chart shows columns for every database starting at 0 to the average value (the average percentage of free space). For every object, the chart also shows a range of values from the minimum value to the maximum.

The table shows additional details for every database: database name, sample count, minimum, maximum and average free space values, as well as the standard deviation.

**Note** If several objects have the same ranking function value, the report will include more objects than you have set in the **Count** field. For example, the “bottom 10” report will show 11 objects if two objects “share” the same position (have the same ranking).

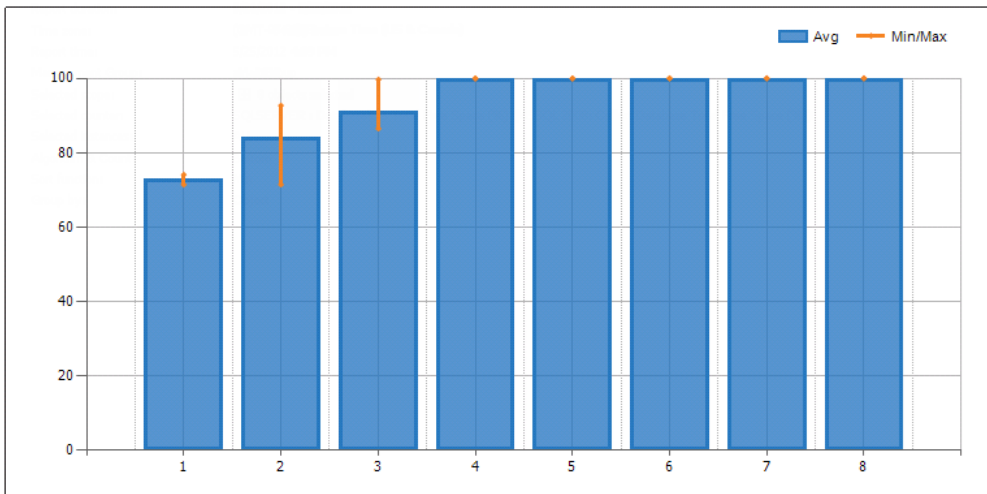
If you need to investigate performance issues for a specific object, you can drill down to the [Veeam Performance Details Report](#) by clicking a column on the chart or using links in the **Object** column in the table.



## Performance Top (Bottom) N

Report description:

Report parameters:



Object	Sample Count	Min Value	Max Value	Average Value	Standard Deviation
<a href="#">Type: SQL Database</a> <a href="#">Path: win2012R2.veeam.local\MSSQLSERVER</a> <a href="#">Name: OperationsManager</a>	209	71.39	74.08	72.70	0.41
<a href="#">Type: SQL Database</a> <a href="#">Path: win2012R2.veeam.local\MSSQLSERVER</a> <a href="#">Name: OperationsManagerDW</a>	217	71.39	93.73	82.86	0.39
<a href="#">Type: SQL Database</a> <a href="#">Path: win2012R2.veeam.local\MSSQLSERVER</a> <a href="#">Name: ReportServer</a>	196	84.49	99.66	92.57	3.67

# VEEAM RELATIONSHIP HISTORY

The **Veeam Relationship History** report allows you to choose a specific type of relationship between infrastructure objects and track changes for this relationship over a time interval.

## Perspective Options

The Veeam Relationship History report allows you to choose the perspective which will be used to analyze relationship: *Source*, *Target* or both.

## Grouping Options

The report allows you to group report statistics by the following criteria: *Source* or *Target*.

## Sample Usage

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

*In your HA cluster, you want to track load on a specific host. Particularly, you need to keep an eye on vMotions history for that host to make sure that the host can sustain the workload.*

The following example explains how to create a report that shows what virtual machines were residing on the selected vSphere host during the reporting period.

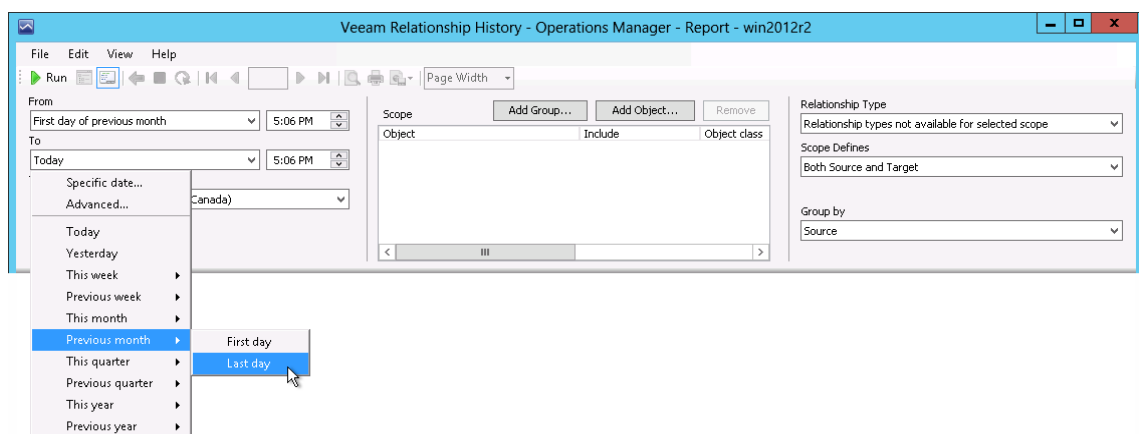
## Step 1. Open Veeam Relationship History Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam Relationship History** report. Alternatively, right-click the **Veeam Relationship History** report in the Reporting Pane and choose **Open**.

## Step 2. Define Time Intervals

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

In this example, the report will analyze vMotions for the previous month.

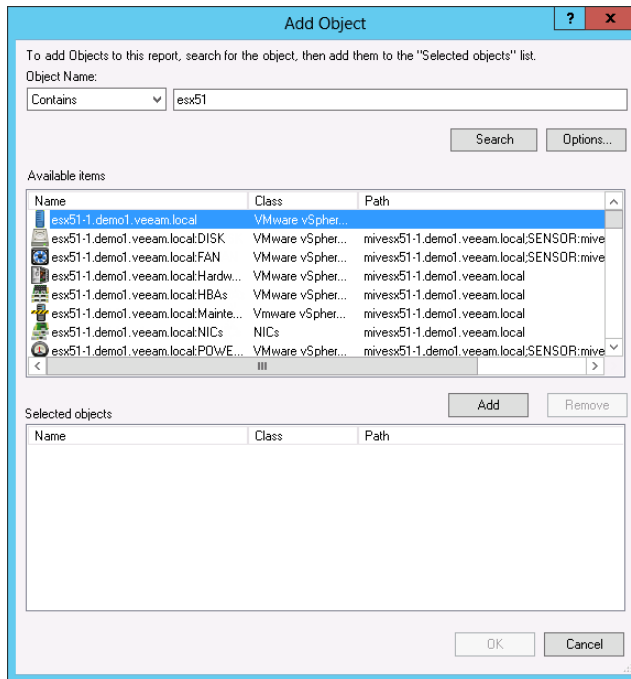


## Step 3. Choose Report Scope

Define a list of groups or objects which will be analyzed in the report.

In this example, we will analyze virtual machines that resided on a specific vSphere host:

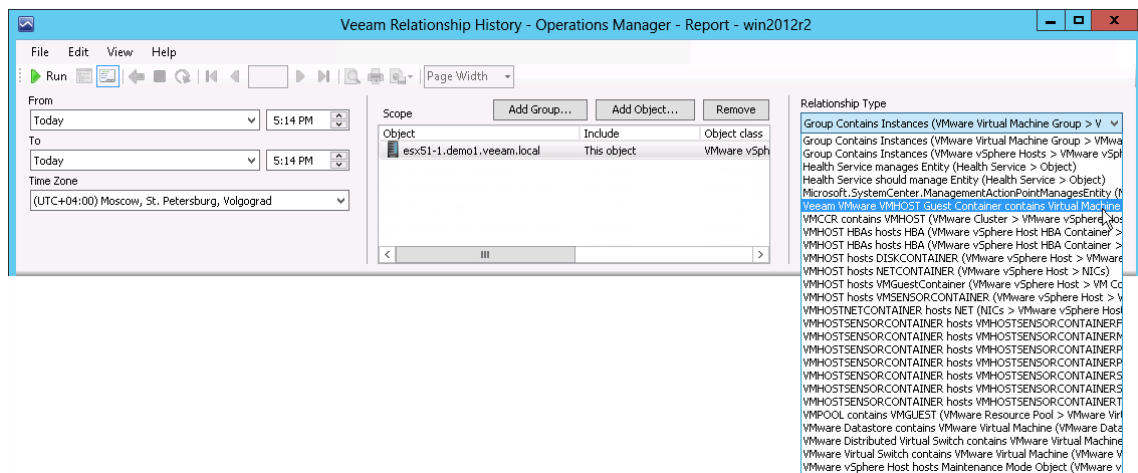
1. In the **Scope** section, click **Add Object**.
2. In the **Object Name** search box, type the name of the necessary host. Select the host in the list of search results, click **Add** and click **OK**.



## Step 4. Choose Relationship Type

Define the type of relationship for the selected Group (or Object). The list of available relationship types depends on the selected scope.

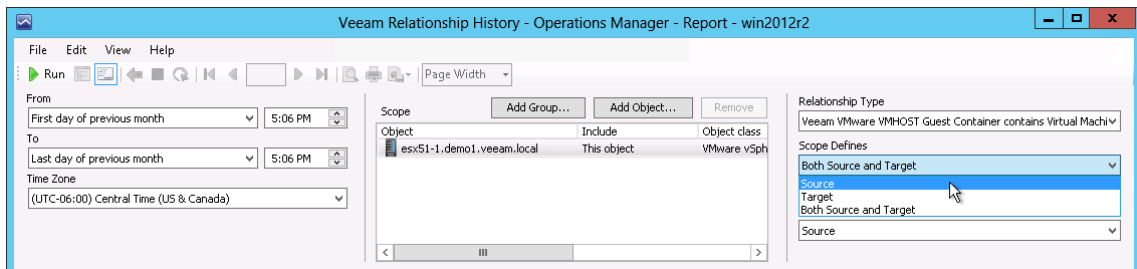
In this example, we will choose the *Veeam VMware VMHOST Guest Container contains Virtual Machine (VM Container > VMware Virtual Machine)* type, since we want to track host-to-virtual machine relationship.



## Step 5. Choose Perspective Options

Define the perspective which the report will analyze relationship from.

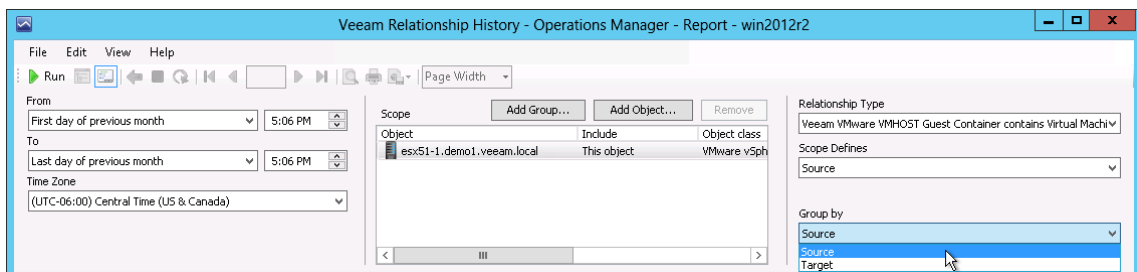
In this example, we will choose *Source*, since we want to analyze relationship from the host perspective.



## Step 6. Choose Grouping Options

Define how data will be grouped in the report.

In our example, we will choose *Source* to draw a chart for the host.



## Step 7. Run the Report

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

# Report Output

The report will show the list of virtual machines that resided on the selected host during the previous week.

For every VM, the chart will display period(s) during which the VM was residing on the host.

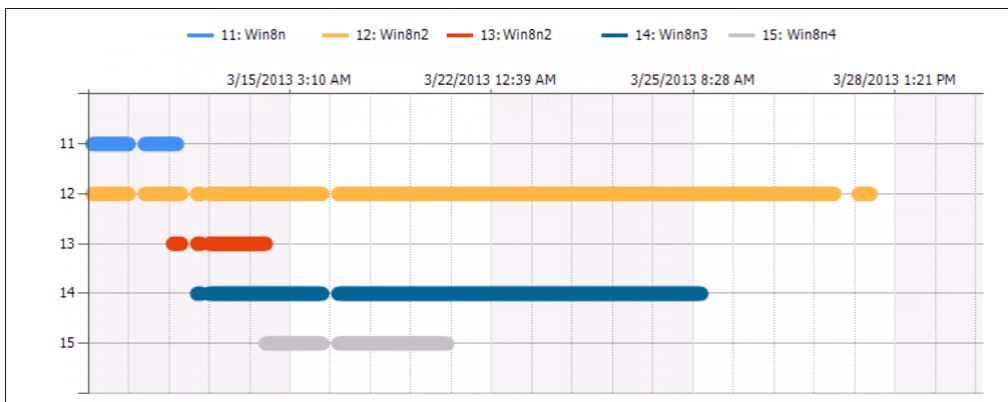
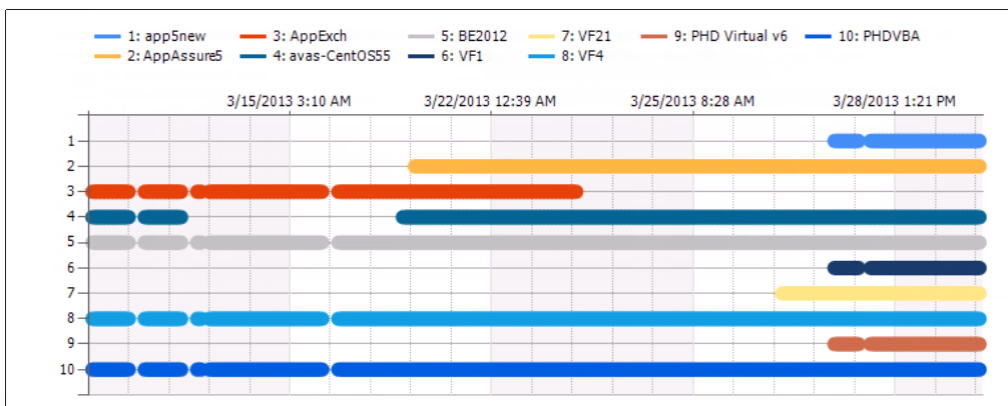


## Relationship History

### Report description:

### Report parameters:

Path: esx51-1.demo1.veeam.local  
Name: esx51-1.demo1.veeam.local:VMs



Target Object	Relationship Existed	
	From	Till
app5new	3/28/2013 8:12 AM	3/28/2013 9:26 AM
	3/28/2013 9:34 AM	4/1/2013 7:52 PM

# VEEAM STATE SUMMARY REPORT

The **Veeam State Summary Report** shows the time in healthy/unhealthy state for selected infrastructure objects' monitor across a time range.

The Veeam State Summary Report extends the functionality of the Microsoft Generic Report library by adding the following advanced features:

- Comparing two time intervals: the report allows you to compare health state of infrastructure objects within two time intervals.
- Monitors selection: you can choose a specific monitor to analyze in the report.

## Sample Usage

This section provides step-by-step instructions that will help you understand how to create the Veeam State Summary Report. Consider the following example:

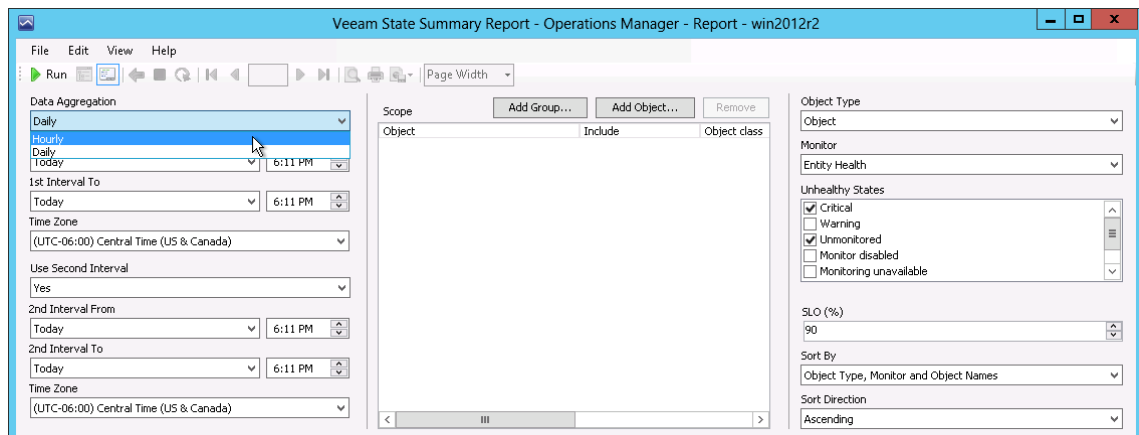
*You have added several VMs to your vSphere clusters and want to check how the health state of the cluster has changed to make sure that you still meet your SLO. For evaluation, you want to compare the health states for two intervals: from Monday to Friday this week (before the changes) and from Monday to Friday last week during this week.*

## Step 1. Open Veeam State Summary Report

Open the Reporting Pane, select **Veeam Report Library** and double-click the **Veeam State Summary Report**. Alternatively, right-click the **Veeam State Summary Report** in the Reporting Pane and choose **Open**.

## Step 2. Choose Data Aggregation Level

From the **Data Aggregation** list, choose the level of data aggregation — hourly or daily.

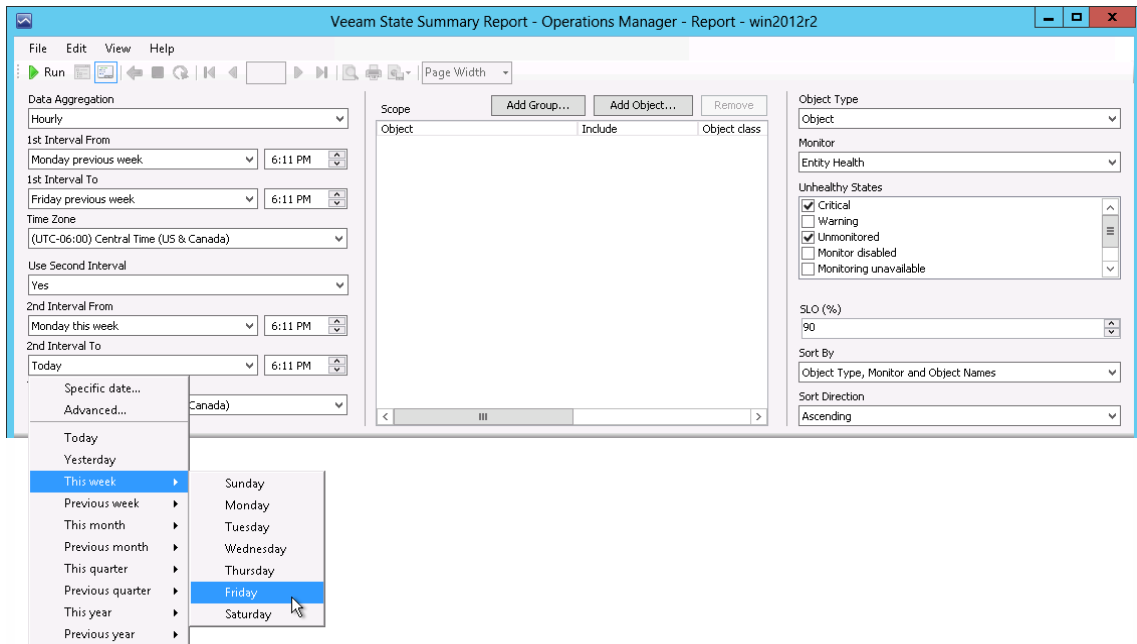


## Step 3. Define Time Intervals

Next, you need to define the time range for the report. You can set only one time interval to analyze the health state for a specific time range, or define two time intervals to compare the health state during two periods.

In our example, the report will analyze the health state for the following intervals: this week and previous week.

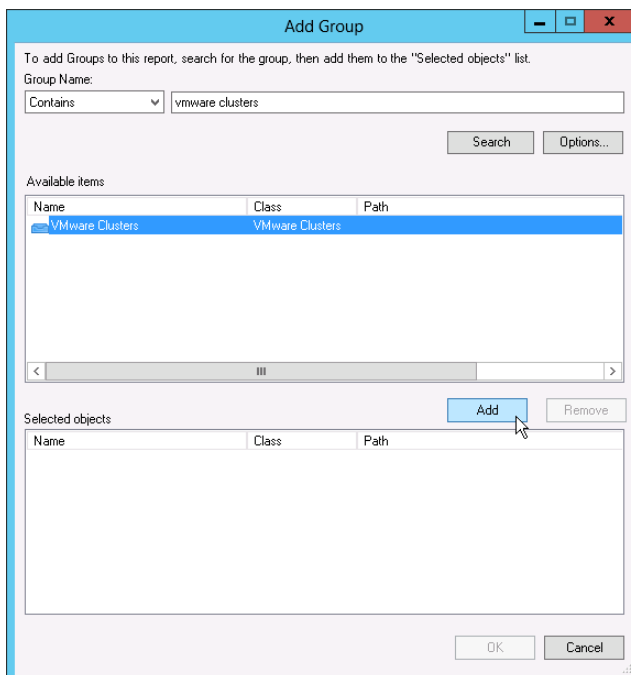
1. From the **1st Interval From** list, choose *Previous Week > Monday*. From the **1st Interval To** list, choose *Previous Week > Friday*.
2. From the **Use Second Interval** list, choose *Yes*.
3. From the **2nd Interval From** list, choose *This Week > Monday*. From the **2nd Interval To** list, choose *This Week > Friday*.



## Step 4. Choose Report Scope

In the **Scope** section, search for VMware topology objects to include in the report.

Click **Add Group**. In the **Group Name** search box, type "vmware clusters" and click **Search**. Select the *VMware Clusters* group in the list of search results, click **Add** and click **OK**.

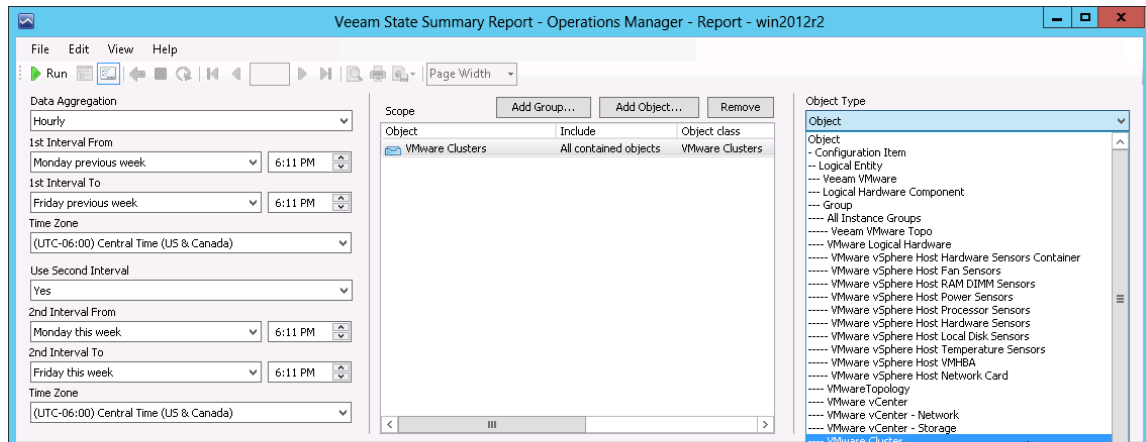




## Step 5. Choose Object Type

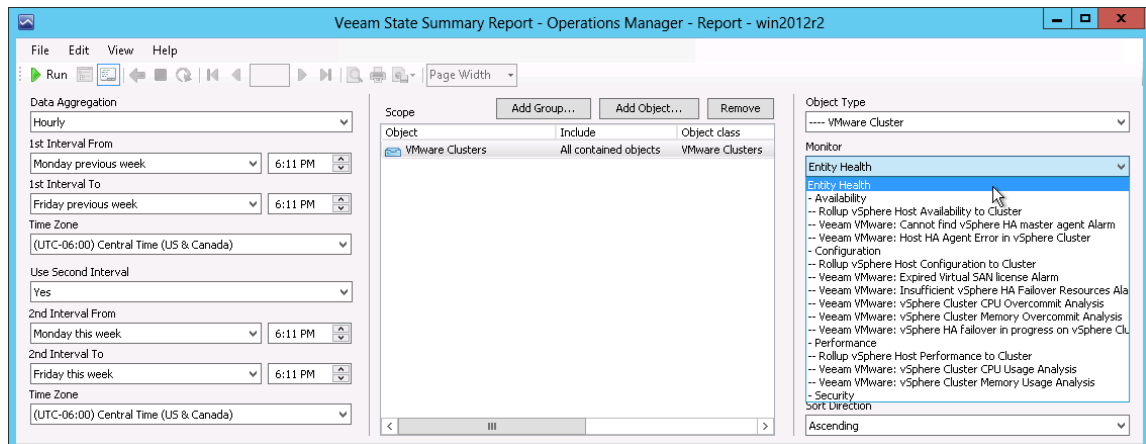
Next, choose the type of the infrastructure objects whose health state the report will analyze. The list of available object types will depend on the selected scope.

To analyze vSphere clusters, from the **Object Type** list, select *VMware Cluster*.



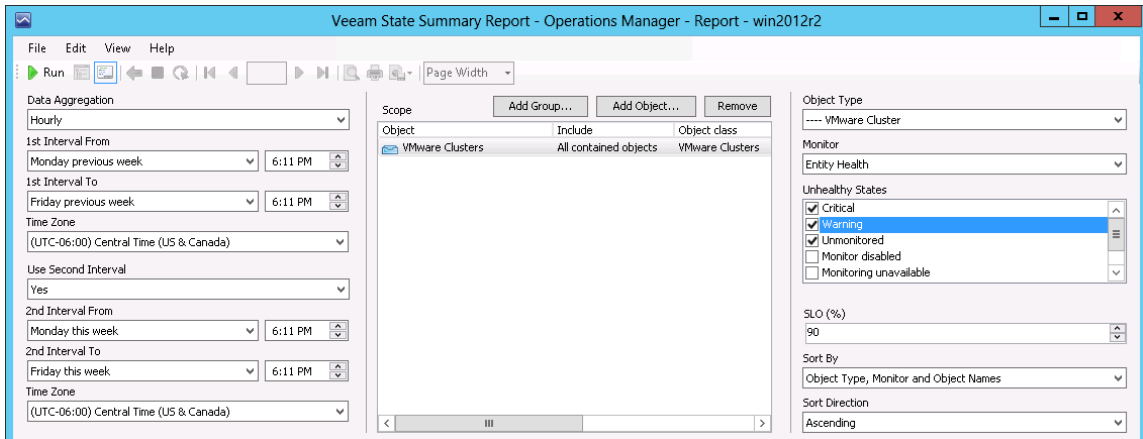
## Step 6. Choose Monitor

From the **Monitor** list, choose the monitor or a group of monitors that track the health state of the selected infrastructure object.



## Step 7. Specify Unhealthy States

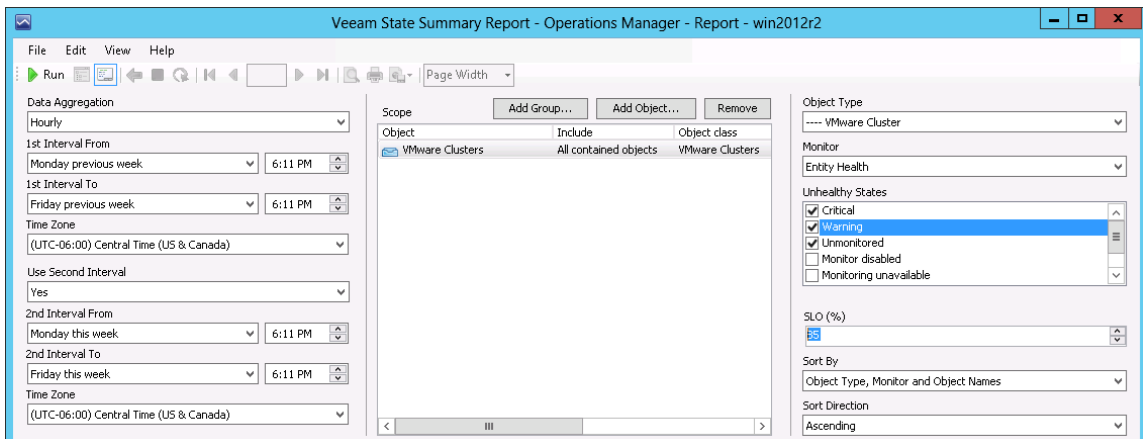
In the **Unhealthy States** list, choose states that you consider unhealthy (for example, *Critical*, *Warning* and *Unmonitored*).



## Step 8. Specify Service Level Objective

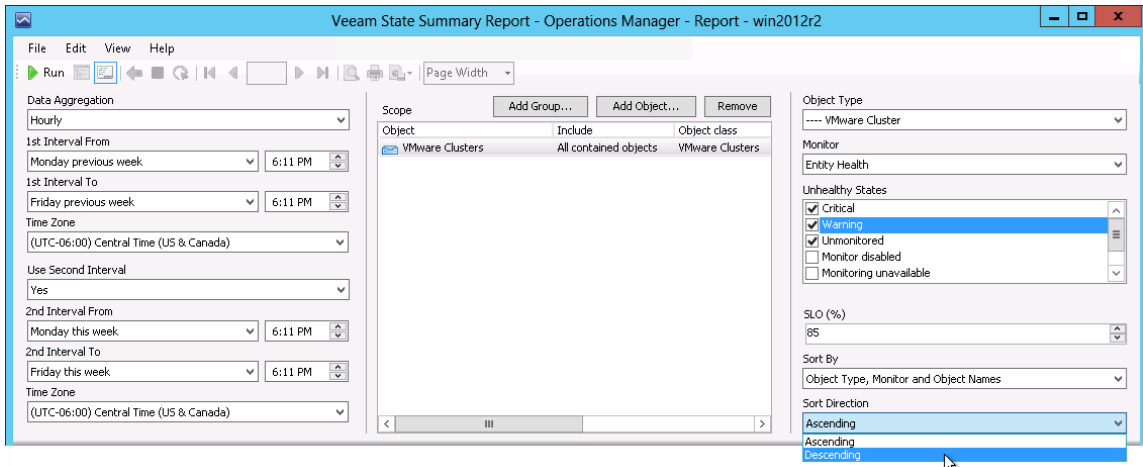
In the **SLO (%)** field, enter the required service level objective against which you want to check the health of vSphere clusters (for example, *85*).

The SLO sets a time period (in percent against the reporting period) when selected infrastructure objects must be in a healthy state (that is, in the state that is not marked as unhealthy).



## Step 9. Choose Sorting Options

In the **Sort By** and **Sort Direction** fields, choose how data will be displayed in the report.



## Step 10. Run the Report

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

## Report Output

The report will show uptime and downtime statistics for vSphere clusters for 2 time intervals (previous week and current week).

The green graph on the chart will represent healthy states, the red graph will represent unhealthy states. The SLO bar will be highlighted pink or grey, according to the following rule:

- If the percentage of time when the cluster was in a healthy state is above the SLO (%), the bar will be colored grey.
- If the percentage of time when the cluster was in a healthy state is below the SLO (%), the bar will be colored pink.



### State Summary

▣ Report description:

▣ Report parameters:

Monitor	Object	1st Interval				2nd Interval				Change (pp)
		Up Time	Up Time %	Down Time	Down Time %	Up Time	Up Time %	Down Time	Down Time %	
Entity Health (Aggregate: WorstOf)	VMware Cluster OutF	0:00	0.00%	144:00	100.00%	0:01	0.02%	71:59	99.98%	0.02
Entity Health (Aggregate: WorstOf)	VMware Cluster Autocluster (ESX4.1 HA & DRS)	13:59	9.71%	130:00	90.29%	0:01	0.02%	71:59	99.98%	-9.69
Entity Health (Aggregate: WorstOf)	VMware Cluster CL855	0:00	0.00%	144:00	100.00%	0:00	0.00%	72:00	100.00%	(None)
Entity Health (Aggregate: WorstOf)	VMware Cluster Cluster01	144:00	100.00%	0:00	0.00%	72:00	83.37%	13:45	16.03%	-16.03
Entity Health (Aggregate: WorstOf)	VMware Cluster Cluster02	41:01	28.49%	102:58	71.51%	0:34	0.80%	71:25	99.20%	-27.70

You can click the SLO bars to drill down to the Veem State Details Report.

## State Details

▣ Report description:

▣ Report parameters:

Monitor	Object	Up Time	Up Time %	Down Time	Down Time %
Entity Health (Aggregate: WorstOf)	VMware Cluster buF Monitor has 427 child monitors.	0:01	0.02%	71:53	99.98%



Interval start	Interval length (min)	Red	Yellow	Green	Unmonitored	Monitor disabled	Monitoring unavailable	Planned maintenance	Unplanned maintenance	Total	
		Down	Down	Up	Down	Up	Up	Up	Up	UP	DOWN
4/7/2013 4:00 PM	24:00	23:59 99.93%		0:00 0.00%			0:01 0.07%			0:01 0.07%	23:59 99.93%
4/8/2013 4:00 PM	24:00	24:00 100.00%								0:00 0.00%	24:00 100.00%
4/9/2013 4:00 PM	24:00	24:00 100.00%								0:00 0.00%	24:00 100.00%

# APPENDIX. KNOWN ISSUES

## Non-default collation settings for SQL cause Data Warehouse errors

If you are using a non-default SQL Collation that is not supported by OpsMgr, after installation of Veeam MP you may receive errors, such as: *'Cannot resolve the collation conflict between 'SQL collation', 'SQL\_Latin1\_General\_CP1\_CI\_AS' and 'Latin1\_General\_CI\_AS' in the equal to operation.'*

This is not a Veeam Report Library issue, although it is exposed by the Veeam reporting features. The root cause is an unsupported configuration for the OpsMgr Data Warehouse DB.

To avoid this issue, make sure that the supported collation is specified for OpsMgr and Data Warehouse databases when installing OpsMgr. For existing installations it may be required to port/reinstall OpsMgr to use a supported SQL collation configuration.

For a list of collations supported by Ops Mgr, see:

- Ops Mgr 2012 SP1 system requirements at [technet.microsoft.com/en-us/library/dn249696.aspx](http://technet.microsoft.com/en-us/library/dn249696.aspx)
- Ops Mgr 2012 R2 system requirements: [technet.microsoft.com/en-us/library/jj656654.aspx](http://technet.microsoft.com/en-us/library/jj656654.aspx)