Dell EMC Avamar Fitness Analyzer

Version 19.1

User Guide

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DELL EMC

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Preface

As part of an effort to improve the product lines, revisions of the software and hardware are periodically released. Therefore, some functions that are described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

Contact the technical support professional when a product does not function correctly or does not function as described in this document.

Note

This document was accurate at publication time. To find the latest version of this document, go to Online Support (https://support.EMC.com).

Purpose

This guide describes how to use the reporting and analysis functionality within the Fitness Analyzer portal. This guide includes instructions to create, manage, and interpret the available reports and summaries.

Audience

The audience for this guide includes Avamar system administrators, sales force personnel, and other technicians who manage an Avamar server.

Revision history

The following table presents the revision history of this document.

Table 1 Revision history

Revision	Date	Description
01	May 20, 2019	GA release of Avamar 19.1

Related documentation

The following publications provide additional information:

- *Avamar Administration Guide*
- *Avamar Reports Guide*

Typographical conventions

These type style conventions are used in this document.

Table 2 Typographical conventions

Bold	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)
Italic	Used for full titles of publications that are referenced in text
`Monospace`	Used for: • System code • System output, such as an error message or script

Table 2 Typographical conventions (continued)

	• Pathnames, filenames, prompts, and syntax • Commands and options
Monospace italic	Used for variables
`Monospace bold`	Used for user input
[ ]	Square brackets enclose optional values
|	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information that is omitted from the example

Where to get help

The Avamar support page provides access to licensing information, product documentation, advisories, and downloads, as well as how-to and troubleshooting information. This information may resolve a product issue before contacting Customer Support.

To access the Avamar support page:

1. Go to https://www.dell.com/support/home/us/en/19.
2. Type a product name in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** search box.
3. Select the product from the list that appears. When you select a product, the **Product Support** page loads automatically.
4. (Optional) Add the product to the **My Products** list by clicking **Add to My Saved Products** in the upper right corner of the **Product Support** page.

Documentation

The Avamar product documentation provides a comprehensive set of feature overview, operational task, and technical reference information. To supplement the information in product administration and user guides, review the following documents:

- Release notes provide an overview of new features and known limitations for a release.
- Technical notes provide technical details about specific product features, including step-by-step tasks, where necessary.
- White papers provide an in-depth technical perspective of a product or products as applied to critical business issues or requirements.

Knowledgebase

The Knowledgebase contains applicable solutions that you can search for either by solution number (for example, KB000xxxxxx) or by keyword.

To search the Knowledgebase:

1. Go to https://www.dell.com/support/home/us/en/19.
2. Under the **Support** tab, click **Knowledge Base**.

3. Type either the solution number or keywords in the search box. Optionally, you can limit the search to specific products by typing a product name in the search box and then selecting the product from the list that appears.

Online communities

Go to Community Network at http://community.EMC.com for peer contacts, conversations, and content on product support and solutions. Interactively engage online with customers, partners, and certified professionals for all products.

Live chat

To engage Customer Support by using live interactive chat, click **Join Live Chat** on the **Service Center** panel of the Avamar support page.

Service Requests

For in-depth help from Customer Support, submit a service request by clicking **Create Service Requests** on the **Service Center** panel of the Avamar support page.

Note

To open a service request, you must have a valid support agreement. Contact a sales representative for details about obtaining a valid support agreement or with questions about an account.

To review an open service request, click the **Service Center** link on the **Service Center** panel, and then click **View and manage service requests**.

Enhancing support

It is recommended to enable ConnectEMC and Email Home on all Avamar systems:

- ConnectEMC automatically generates service requests for high priority events.
- Email Home sends configuration, capacity, and general system information to Customer Support.

Comments and suggestions

Comments and suggestions help to continue to improve the accuracy, organization, and overall quality of the user publications. Send comments and suggestions about this document to DPAD.Doc.Feedback@emc.com.

Please include the following information:

- Product name and version
- Document name, part number, and revision (for example, 01)
- Page numbers
- Other details to help address documentation issues

CHAPTER 1

Introduction

This chapter contains the following topics:

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About Fitness Analyzer

The Avamar Fitness Analyzer reporting and analysis portal provides a visual representation of server health and functionality, and organizes information from disparate sources into cohesive reports. Administrators use this functionality to troubleshoot issues, optimize system performance, or plan future changes.

Fitness Analyzer reports provide a history of recent activities and events that affect an Avamar server. The summaries provide a visual analysis of trends and server behavior over the reporting window. Administrators can export report or chart data in multiple formats for offline review.

Fitness Analyzer also works with the existing Management Console Server (MCS) reporting functions to provide the historical reports that were available through Avamar Administrator.

The advanced analysis features enable administrators to see the server as a whole. From this top-level perspective, Fitness Analyzer makes it easy to spot any areas of interest and then examine the underlying components, clients, or activities. Additional information available at lower levels helps administrators to understand root causes, plan corrective actions, and monitor the results.

Fitness Analyzer reporting addresses topics that include:

- Maintenance and backup window optimization
- Capacity utilization
- Replication performance
- Job completion times
- Proxy utilization
- Policy and client organization
- Troubleshooting of system health or configuration issues

Administrators access Fitness Analyzer from the Avamar Web User Interface (AUI), which redirects to a reporting portal.

Component structure

Fitness Analyzer provides a free-form way to observe Avamar server performance. Aside from the server reports, there are no formally defined workflows. Instead, subsequent analysis focuses on the results that you identified in the previous step.

Administrators typically start with a review of the top-level graph of server health and activity on the **Overview** pane. Use the graph to identify any prominent trends, abnormalities, or areas of further interest. Identify each category for which you want to obtain more information, such as groups, replication, clients, proxies, individual backups, or server health. Then, drill down through the levels of available reports and summaries to learn more about the events which produced the result on the **Overview** pane.

Most summaries present information in a tabular format that contains a breakdown of the items on the summary report. Where available, pie charts show important themes. Timelines provide ways to spot trends or see how the individual data points fit into the larger whole.

Accessing Fitness Analyzer

Because of the similarities between the Fitness Analyzer portal and the AUI, Dell EMC recommends familiarizing yourself with the AUI before you begin.

Administrators can open the Fitness Analyzer portal from the AUI or directly from the portal URL. Both methods are functionally equivalent and use the Avamar server credentials. However, for administrators who are already logged in to the AUI, the Fitness Analyzer portal does not present a second request for authentication.

In the AUI, the link for Fitness Analyzer resides at the bottom of the navigation pane.

Under the **Monitor** heading, click **Fitness Analyzer** to open the Fitness Analyzer portal.

Alternatively, an administrator can type the Fitness Analyzer portal URL directly into a browser:

```
https://<AvamarServer>/eagleeye
```

The authentication page opens and requests Avamar credentials. Because Fitness Analyzer operates at the server level, the domain field is unavailable.

After you log in, Fitness Analyzer opens to the **Overview** pane.

About the interface

Like the AUI, the Fitness Analyzer portal provides access to all functional areas through the navigation pane on the left. Click » to expand the navigation pane and then review the list of available menu items.

Use the navigation pane to browse the available reports and summaries. Click each navigation link to open the corresponding feature pane on the right.

The navigation links provide access to the following Fitness Analyzer features:

Table 3 Fitness Analyzer navigation pane

Navigation link	Icon	Available features
Overview		Provides an at-a-glance view of Avamar server status and recent history.
Reports		Generates and displays Avamar server reports that capture a snapshot of the server at one point in time.
Group Summary		Displays statistics and summaries of recent group activity. Provides a breakdown of group activity to the client or activity level.
Replication Summary		Summarizes trends for replication activities between this and other Avamar servers.
Client Summary		Provides a history of recent client activities and a graphical summary of backups from each client.
Proxy Summary		Displays statistics and summaries for all VMware proxies and vCenters in the Avamar environment.

Table 3 Fitness Analyzer navigation pane (continued)

Navigation link	Icon	Available features
Backup Summary		Reports on completed and failed backup jobs, with a summary of reports by error code.
System Utilization		Illustrates trends of system health information at the node or resource level.
Metadata Utilization		Displays recent server metadata usage history.
System Summary		Displays a detailed accounting of Avamar server and configuration specifications.

Common controls

Some controls are available on more than one type of report, but function the same way everywhere and are described once for simplicity.

Table 4 Common controls

Function	Icon	Description and usage
Context menu (download graphical data)		Exports graph data in various pictorial formats. Appears at the upper right corner of some graphs. If you select the data table option, Fitness Analyzer appends the data table to the current pane.
Download tabular data		Exports a copy of the data from a tabular report in CSV format. The data export does not contain any available detailed breakdowns, only the top level summary as indicated in the tabular report.
Filter tabular data		Filters tabular reports by keyword. Click the icon and then specify a keyword, such as `backup` or `replication`. Fitness Analyzer automatically filters the report as you type. To clear the filter, remove all characters from the keyword field.
Show or hide columns		Located at the lower-left corner of tabular report panels. Use the check boxes to include or exclude necessary columns, or the **Select all** option for every available column.
Timeline controls	Multiple	For any panel that contains a timeline, changes the range of available data. Adjust the viewing window to different dates and times by clicking and dragging the graph from side to side. Change the time scale by scrolling vertically over the graph.

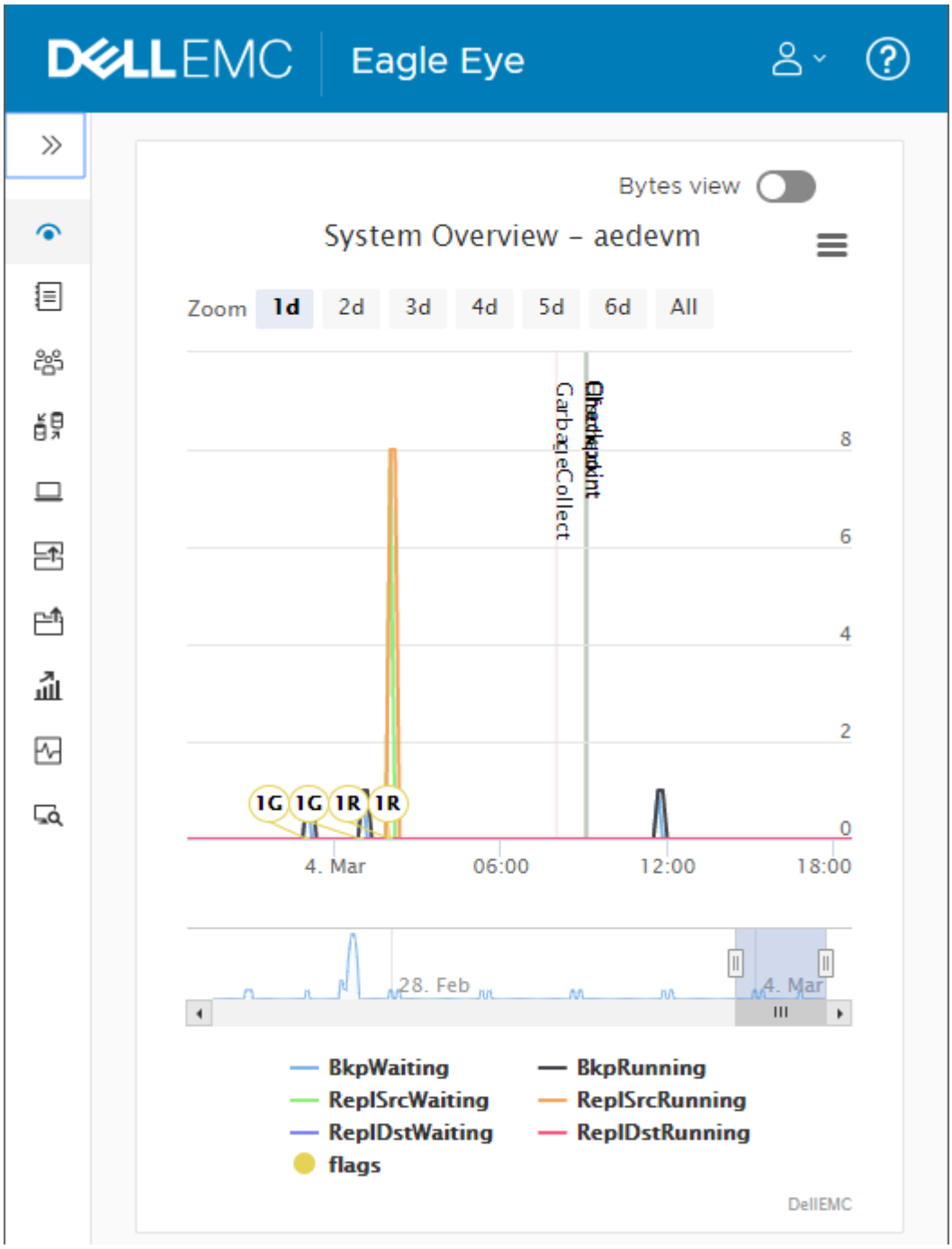
Overview pane

The Fitness Analyzer **Overview** pane presents a graphical timeline of recent server activity. Use the timeline to determine the amount of time that a server is idle or active, and the nature of the running activities.

The timeline identifies areas of interest, such as high traffic, delayed backup or replication jobs, and interference between backup activities and server maintenance. The summaries in the navigation pane provide a breakdown of the trends indicated here.

For example, the data on the **Overview** pane can help you determine whether you need to change or offset group start times because too many clients are backing up simultaneously. You can also determine if you need to move clients into new or different groups for better performance. The timeline also identifies whether server maintenance activities overlap with the backup window and other operations, or whether there is room to optimize the window sizes and schedules.

Figure 1 Overview pane



The **Overview** pane presents different types of activities as data series on the timeline. The legend below the timeline identifies each data series and the type of activity.

Table 5 Data series legend

Data series	Description
BkpWaiting	The number of backups that are currently waiting to start, for any reason.

Table 5 Data series legend (continued)

Data series	Description
BkpRunning	The number of active backups.
ReplSrcWaiting	The number of replication jobs, from this server to another, that are currently waiting to start.
ReplSrcRunning	The number of active replication jobs, from this server to another.
ReplDstWaiting	The number of replication jobs, from other servers to this one, that are currently waiting to start.
ReplDstRunning	The number of active replication jobs, from other servers to this one.

Fitness Analyzer marks important server health events, such as checkpoint creation and validation, or garbage collection, as vertical lines that correspond to the start and finish times of the event.

Flags are small bubbles that contain a number and a character, and that identify important events for a particular data series. For example, the flag `1R` means that a replication group started at the time indicated by the flag's location. The flag `1G` means that a backup group started at the indicated time. Hover over the flag for event details, such as the number of clients in the group and the exact start time.

Hover over any part of the timeline to examine the server activity at the corresponding time. Fitness Analyzer adds a gray marker line for the selected time and extra flags to indicate the number of jobs in each state.

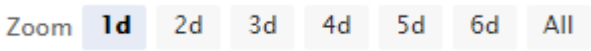
Click the label for a data series to show or hide the corresponding trend on the timeline. You can also show or hide flags the same way. As you show or hide data series, the timeline automatically rescales to fit the remaining data.

Scale

By default, the timeline contains one day of data. A smaller sliding scale beneath the timeline enables you to move forward or backward so that you can view data for other time periods at the same scale.

To change the scale, select a different number of days from the **Zoom** control above the timeline. The **Overview** pane displays a maximum of one week of data.

Figure 2 Zoom control



You can also set a custom scale level by dragging the left and right handles (▯) on the sliding scale. To reset the custom scale level, select one of the standard zoom levels.

Bytes view

By default, the units are absolute numbers that correspond to the number of active or pending operations. The **Bytes view** toggle changes the display units for the horizontal axis to GB, so that the timeline represents the amount of raw data that is transferred to the Avamar server. This view distinguishes the relative impact of each group on the server.

Bytes view also simplifies the data series into three groups:

Table 6 Data series legend

Data series	Description
Backups	The amount of data transferred by incoming backups from clients.
ReplSrc	The number of data replicated from this server to other servers.
ReplDst	The number of data replicated from other servers to this server.

Header pane

The Fitness Analyzer header pane at the top of the window contains common controls that apply to all functional areas. You can access these controls from any area of the interface.

The header pane provides access to the following features:

Table 7 Fitness Analyzer navigation pane

Navigation link	Icon	Available features
Reload		Refreshes the reporting data across all summaries and server health panels.
Configuration		Changes between the default timeline reporting period and a user-defined custom reporting period.
User		Logs out of the interface.
Help		Displays the Fitness Analyzer online help.

User-defined timeline reporting period

The default timeline reporting period is seven days. However, you can configure the reporting period for all timelines to start and end on arbitrary dates.

To select a user-defined timeline reporting period, click and deactivate the **Last 7 days** toggle. Fitness Analyzer enables the custom timeline **From Date** and **To Date** fields.

Type a date in the fields or click to open a date picker. With the date picker open, use the left and right arrows to move between months. To select the current date, click .

To return to the default timeline reporting period, activate the **Last 7 days** toggle.

Limitations

Review the following information before you begin:

- Reports and summaries do not show active, running jobs. These jobs appear in the reports and summaries after completion.

- During the initial creation of each pane, Fitness Analyzer may take slightly longer than usual to display results. Subsequent views use cached data.
- Results are cached for approximately 15 minutes from their creation time. If you move away from a pane and then back, the data may not regenerate until the cache expires.

CHAPTER 2

Reports

This chapter contains the following topics:

- Reports 22
- Available report queries 22
- Generate reports 22
- Working with completed reports 23

Reports

Fitness Analyzer reports are snapshots of different aspects of the server at particular points in time. The basic reporting functions come from the Management Console Server (MCS), which provides centralized administration of the Avamar server.

To open the **Reports** pane, click the **Reports** link in the navigation pane.

The **Reports** pane contains two panels: a list of the available report queries and a list of completed reports. The queries correspond to the different types of reports, while the completed reports represent the saved snapshots at the time they were taken.

Available report queries

The Fitness Analyzer portal includes the predefined activity, capacity, client, and system reports that were available from Avamar Administrator and MCS, plus two new reports.

The *Avamar Reports Guide* provides more information about each type of MCS report and the associated use cases.

The following new reports are specific to Fitness Analyzer and are not available from Avamar Administrator:

Table 8 Fitness Analyzer reports

Report	Description
Pending Replication	Shows the number of backups and the amount of primary data in GB that await scheduled replication to another Avamar server.
Avamar - Capacity Report	Shows the daily changes in capacity usage. For example, new data backed up to the Avamar subsystem and to Data Domain, and capacity freed by garbage collection.

Generate reports

After you review the report use cases, select and run the appropriate report.

Procedure

1. Select a report from the table on the **Reports** pane.

   If the selected report does not require a date range, Fitness Analyzer enables the **Generate** button.

2. If required, select a start date in the **From Date** field.

   Type a date in the correct format or use the date picker:

   a. To open the date picker, click .

   b. With the date picker open, use the left and right arrows to move between months.

   c. With the date picker open, to select the current date, click .

   Not all reports require a date range.

3. If required, select an end date in the **To Date** field.

   If the selected report requires a date range, Fitness Analyzer enables the **Generate** button.

4. Click **Generate**.

   Fitness Analyzer opens the report format drop-down.

5. Select a report format from the drop-down.

Results

Fitness Analyzer creates the selected report. The reporting process may take some time to complete.

When the report is ready, the report becomes available in the list of completed reports.

Working with completed reports

After the reporting process completes, the finished report becomes available in the completed reports panel. These reports persist across Fitness Analyzer sessions.

Procedure

1. Select a type of report from the table on the **Reports** pane.

   Fitness Analyzer populates the list of completed reports of that type.

2. To retrieve a completed report:

   a. Select the report from the list in the completed reports panel.

   b. Verify the report details (type, time, and filename).

   c. Click **Download**.

3. To remove unneeded reports:

   a. Select the report from the list in the completed reports panel.

   b. Verify the report details (type, time, and filename).

   c. Click **Delete**.

CHAPTER 3

Summaries

This chapter contains the following topics:

- Data summaries 26
- Group summary 26
- Replication summary 27
- Client summary 28
- Proxy summary 29
- Backup summary 29
- System summary 30

Data summaries

The data summaries in the navigation pane focus on individual aspects of the top-level server history as presented on the **Overview** pane.

After you identify an area of interest on the overview, select the corresponding summary type to see more information. Most summaries contain several different levels of reporting breakdown and graphical analysis, such as data tables, charts, and timelines, to help you identify areas for action.

The summary and related details provide enough information to identify possible root causes, aid with server optimization, or serve as direction for more troubleshooting with Customer Support.

Group summary

The **Group summary** pane provides statistics that summarize the performance for individual groups on the server.

This pane contains two tabs: **Group summary** and **Groups timeline**. Use the reports to identify areas where the Avamar server may be over- or under-subscribed, and to determine where you may be able to modify group schedules or membership to optimize performance.

Group summary tab

The **Group summary** tab presents the group summary report, a high-level overview of backup group activity within the reporting period. The tabular chart lists performance statistics for each group, such as job sizes and durations.

Viewing summaries of group activities

To expand each group and see more statistics about a group's associated activities, click the > in the left column for a group. Fitness Analyzer expands the table to show a summary of each activity for the selected group, including start and stop times for the activity, the total amount of data transferred to the Avamar server, and the number of clients that took part.

Use this information to spot anomalies or unexpected behavior, such as an activity with an excessive amount of backup data as compared to the surrounding activities, and drill down to the client level.

Viewing client details

With the activity summary open for a group, click the > in the left column for an activity. Fitness Analyzer expands the table to show more information about the clients and plug-ins that took part in the activity. This information includes the client name and domain, plug-in name, start and completion times, duration, amount of data transferred, and result codes.

You can also view the details for a group's recent activities in different formats with the **View history** column. View group history on page 27 provides more information.

View group history

With the activity summary open for a group, click the in the **View History** column for an activity summary. The **View history** page opens to the **Statistics** tab.

Click the **X** at the upper right of the **View history** page to return to the group summary.

Statistics tab
The **Statistics** tab contains two panels, a tabular report at left and a graphical report at right.

The tabular report displays all of the recorded client activities that form the selected activity summary. The report provides information such as the specific client and domain, completion time, and plug-in type. By default, additional columns for associated error and status codes are hidden.

The graphical report breaks down the completion codes for each job in the tabular report. Review the graph for unexpected completion codes or a high proportion of failures.

Backup Timeline tab
The **Backup Timeline** tab contains a graphical report that shows a representation of the start and stop times for each client activity within the group. A red vertical line marks the current date and time.

Use this graph to determine periods of relative congestion or inactivity. Hovering over each block on the timeline identifies the associated client and plug-in.

Groups timeline tab

The **Groups timeline** tab presents a graphical report that plots the scheduled start and stop times for each group activity within the reporting period. A red vertical line marks the current date and time.

Use this graph to determine periods of relative congestion (clusters of groups) or inactivity (gaps between groups). For example, identify periods where you could consider adjusting group schedules to balance server load, or periods where you could schedule additional groups.

Hovering over each block on the timeline identifies the associated group. The timeline indicates standard groups in blue and replication groups in green.

Replication summary

The **Replication summary** pane provides statistics that summarize the performance for replication activities on the server. These statistics allow an administrator to form a complete picture of a server's replication behavior before making changes.

This pane contains one tab: the **Replication summary report**. Use the report to identify clients that might not be included in a replication activity, or which may not be replicating as expected.

Replication summary report

The replication summary report presents a high-level overview of replication group activity within the reporting period. The tabular chart lists performance statistics for

each replication group, such as destinations, number of clients, sizes, and number of runs.

Viewing a breakdown of replication group membership

To expand each group and see more statistics about a replication group, click the > in the left column for a group. Fitness Analyzer expands the table to show a summary of the activity for each client in the selected group, including number of backups as part of the group, data transferred, backups that are pending replication, and number of days that scheduled replication did not occur. The **Not Replicated** column identifies the number of backups for which replication is still pending. Each time a backup goes 24 hours without scheduled replication, the count in the **Days Behind** column increases.

Use this information to spot anomalies or unexpected behavior, such as clients with an excessive amount of data that is not being replicated, or excessive replication delays as compared to other clients, and drill down to the backup level.

Viewing backup details

With the activity summary open for a group, click the > in the left column for an client. Fitness Analyzer expands the table to show more information about the backups and plug-ins for that client. This information includes the client name and domain, plug-in name, start and completion times, amount of data transferred, whether the backup was replicated, and result codes.

Client summary

The **Client summary** pane provides statistics that summarize the behavior and attributes of individual Avamar clients.

The tabular report provides information about active plug-ins, group membership, the number and size of stored backups, and the times that the client was last backed up or replicated.

You can also see more details about a client's completed activities, and view a graphical timeline that shows a client's schedule.

Use this information to spot anomalies or unexpected behavior, such as clients whose data may not be replicating or clients whose backups take longer than expected, and drill down to the activity level.

View client history

With the client summary report open, click the in the **View History** column for a client activity summary. The **View history** page opens to the **Statistics** tab.

Click the **X** at the upper left of the **View history** page to return to the client summary.

Statistics tab

The **Statistics** tab contains two panels, a tabular report at left and a graphical report at right.

The tabular report displays all of the recorded client activities over the duration of the reporting period. The report provides information such as the group to which the client activity belongs, the completion time, and the plug-in type. By default, additional columns for associated error and status codes are hidden.

The graphical report breaks down the completion codes for each job in the tabular report. Review the graph for unexpected completion codes or a high proportion of failures.

Backup Timeline tab

The **Backup Timeline** tab contains a graphical report that shows a representation of the start and stop times for each client activity within the group. A red vertical line marks the current date and time.

Use this graph to determine periods of overlap or inactivity that could help you optimize client performance. Hovering over each block on the timeline identifies the associated client and plug-in.

Proxy summary

The **Proxy summary** pane provides statistics that summarize the performance for entities within a vCenter environment.

This pane contains two tabs: **Proxy summary** and **Proxy timeline**. Use the reports to identify areas where proxies may be over- or under-subscribed, or where tagging can help Avamar to automatically discover new VMs. The proxy timeline helps to identify any proxies that do not accept backups, or which show unexpected behavior. You can then collect the proxy logs for further troubleshooting.

Proxy summary tab

The **Proxy summary** tab presents the vCenter and proxy summary report, a high-level overview of virtual environment statistics and activity within the reporting period. The tabular chart lists performance statistics for each vCenter, such as the numbers of known VMs, containers, VMs within those containers, proxies, and the number of automatically-discovered VMs.

Use this information to spot anomalies or unexpected behavior, such as a vCenter without a sufficient number of proxies for the number of active VMs, or whether automatic discovery has identified the correct number of new VMs.

Proxy timeline tab

The **Proxy timeline** tab presents a graphical report that plots the scheduled start and stop times for each activity in the virtual environment within the reporting period. A red vertical line marks the current date and time.

Before you review the information in the timeline, use the **Choose vCenter** drop-down to select one of the virtual environments that are registered with the Avamar server. The timeline displays the associated proxy servers and then breaks down those proxy servers to show the associated activities.

Use this graph to determine periods of relative congestion (clusters of VMs) or inactivity (gaps between backups). For example, identify periods where you could consider adjusting schedules to balance proxy load, or periods where you could back up more VMs. Look for proxies with more than eight simultaneous activities.

Hovering over each block on the timeline identifies the associated client and group.

Backup summary

The **Backup summary** pane provides statistics that summarize the results for individual backups on the server.

This pane contains two tabs: **Status codes** and **Error codes**. Use the reports to identify the number and percentage of failed backups, whether the volume of failed backups is unexpected, and possible reasons for backup failures. The reports can

identify individual clients that fail with particular errors, for further analysis and log collection for troubleshooting.

Status codes tab

The **Status codes** tab presents a top-level summary of backups by result code within the reporting period. The tabular chart lists performance statistics, sorted by result code.

To see more statistics about the backups that are associated with a particular result code, click the corresponding 👁 in the **Details** column. The **Backup history** page opens. Click the **X** at the upper right of the **Backup history** page to return to the backup summary.

Fitness Analyzer displays a table with a summary of each backup, including the client, plug-in, domain, and group, as well as the backup type, start and stop times, and result codes.

Use this information to spot anomalies or unexpected behavior, such as excessive failure rates for particular clients, groups, or plug-ins, or for backups on particular dates.

Error codes tab

The **Error codes** tab presents a top-level summary of backups by error code within the reporting period. The tabular chart lists the error codes and reasons for backup failure.

Note

Error code 0, known as the administrative code, does not represent a backup failure.

To see more statistics about the backups that are associated with a particular error code, click the corresponding 👁 in the **Details** column. The **Backup history** page opens. Click the **X** at the upper right of the **Backup history** page to return to the backup summary.

Fitness Analyzer displays a table with a summary of each backup, including the client, plug-in, domain, and group, as well as the backup type, start and stop times, and related error codes.

Use this information to spot anomalies or unexpected behavior, such as an increase in the frequency of particular error codes with specific clients, groups, or plug-ins.

System summary

The **System summary** pane provides a detailed breakdown of server configuration.

Click **EXPAND ALL** to open all levels of the configuration tree.

You can also search for a particular configuration value. When you type a keyword in the search field, Fitness Analyzer filters the system summary as you type. To clear the search filter, remove all keywords from the search field.

The configuration tree provides access to the following specifications:

Table 9 Avamar server specifications

Specification	Icon	Available features
System Information		Provides descriptive values that apply to the entire Avamar server, such as the number of nodes, system ID, and hostname.
Network Information		Provides configuration values for the Avamar server backup network interface. For multi-node servers, these values are for the utility node. The detailed node summaries provide more granular information.
Software Versions		Provides version information for different Avamar subsystems.
License Information		Provides a breakdown of the Avamar licensing information, including capacity.
Schedule of Operations		Displays the start times for the backup and maintenance windows, with the associated time zones.
Additional Avamar Services		Provides the configuration status of additional Avamar features, including whether this server is configured to replicate data or send email-home reports.
Miscellaneous Services		Provides the configuration status for monitoring interfaces, such as SNMP.
Detailed Node Information		Provides a detailed breakdown of server status and configuration by node, including hardware platform, model, part, and serial numbers, network configuration, operating system version, and logical node number.

Detailed node summaries

With the configuration tree open to **Detailed Node Information**, the **System Summary** pane provides a detailed configuration summary for each node in the Avamar server. Expand each node ( ) to see the breakdown for that node.

At the node level, click to expand the list of bonds and interfaces. From the list of bonds and interfaces, click to see a detailed breakdown of the network configuration values for that node or interface. This information includes bonding slaves, failover configuration, and TCP/IP configuration. For physical interfaces, the available information also includes the physical address, link speed and state, and the media type.

Note

The network configuration parameters, including bonding slaves, differ between hardware platforms. The IP address, hostname, and other network configuration values that are displayed at the node level are for bond0, the backup network interface.

Fitness Analyzer identifies the hardware components for each node, including platform, model, part number, and serial number. Use this information to identify mixed-platform environments.

CHAPTER 4

Server Health

This chapter contains the following topics:

- Server health analysis 34
- System utilization 34
- Metadata utilization 35

Server health analysis

The **System utilization** and **Metadata utilization** panes provide concise summaries of recorded data from the server nodes and Avamar subsystem. Fitness Analyzer plots this data to enable a server-level view of potential resource usage concerns.

Use this information to identify resource bottlenecks that could benefit from maintenance operations or capacity upgrades. The server health analysis identifies nodes with degraded performance, a heavy load relative to other nodes, or which have gone offline.

System utilization

The **System utilization** pane provides statistics that summarize different aspects of server health.

The **System utilization** pane presents different types of system resource usage as data series on a timeline. The legend below the chart identifies each data series and the type of resource or usage. The timeline can present data in two different views that enable you to pinpoint discrepancies at the level of an individual server node.

Use the controls immediately below the timeline to locate areas of interest, which could indicate particular combinations of activities that cause excessive server loading.

Hover over any part of the timeline to examine the server activity at the corresponding time. Fitness Analyzer adds a gray marker line for the selected time and extra flags to indicate the amount and type of resource usage.

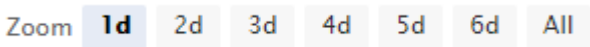
Click the label for a data series to show or hide the corresponding trend on the timeline. As you show or hide data series, the timeline automatically rescales to fit the remaining data.

Scale

By default, the timeline contains one day of data. A smaller sliding scale beneath the timeline enables you to move forward or backward so that you can view data for other time periods at the same scale.

To change the scale, select a different number of days from the **Zoom** control above the timeline. The **System utilization** pane displays a maximum of one week of data.

Figure 3 Zoom control



You can also set a custom scale level by dragging the left and right handles (▯) on the sliding scale. To reset the custom scale level, select one of the standard zoom levels.

Utilization by category

In this view, the timeline plots a graph for all nodes in the server that represents one of four resource categories: CPU usage, network traffic, disk I/O, and disk utilization.

Use the **Choose Utilization Category** drop-down to select an available resource category.

Fitness Analyzer plots each node in the server, where applicable, as a different data series. Where a category contains multiple related statistics, such as reads and writes, the timeline plots each statistic as a different data series.

Note any unusual variations so that you can correlate them with the timeline on the **Overview** pane and determine the corresponding activity.

Utilization by node

In this view, the timeline plots a graph that displays all measured types of resource usage simultaneously, but enables you to drill down to each node in the server.

Use the **Choose Node** drop-down to select an available server node. Fitness Analyzer presents instances of AVE as a single-node server, where the drop-down contains only `Node 0.0`.

Note any unusual variation between nodes so that you can determine whether a node may require more troubleshooting or service.

Metadata utilization

The **Metadata utilization** pane presents long-term trends in server utilization as a data series on a timeline. Metadata utilization is important when the Avamar server has an attached Data Domain system.

The values on the timeline represent a relation between the amount of metadata that is stored per file and the average size of a file in the dataset. Server parameters also affect metadata utilization, as does the type of backup data.

About the timeline

The timeline X and Y axes plot time and metadata utilization as a percentage, respectively. Dell EMC recommends that you periodically review the trend so that you can plan for action when utilization reaches 80%.

Use the controls immediately below the timeline to locate areas of interest, which could indicate an improper backup target. For example, where a group targets the Avamar subsystem (GSAN) instead of an attached Data Domain.

Hover over the timeline to examine the metadata usage at the corresponding time. Fitness Analyzer adds a gray marker line for the selected data point and an extra flag to indicate the amount of usage.

The server issues capacity alerts at preset thresholds and enforces capacity limits when utilization reaches 100%.

Scale

The metadata usage timeline operates on a different scale than most Fitness Analyzer timelines. By default, the timeline contains one month of data. A smaller sliding scale beneath the timeline enables you to move forward or backward so that you can view data for other time periods at the same scale.

To change the scale, select a different number of days from the **Zoom** control above the timeline. The **Metadata utilization** pane displays a maximum of one year of data.

Figure 4 Zoom control

You can also set a custom scale level by dragging the left and right handles (▥) on the sliding scale. To reset the custom scale level, select one of the standard zoom levels.

APPENDIX A

Troubleshooting

This appendix includes the following topics:

- Log locations 38
- Fitness Analyzer is not accessible 38
- System Summary pane is blank 38

Log locations

Fitness Analyzer produces log files and configuration data that you can observe for troubleshooting.

- Log file: `/usr/local/avamar/var/eagleeye/server_log/eagleeye.log`
- Generated reports and system configuration data: `/usr/local/avamar/var/eagleeye/server_data/`

Fitness Analyzer is not accessible

Fitness Analyzer depends on the Apache Tomcat service. If you have problems accessing Fitness Analyzer, check the service status.

Procedure

1. Open a command shell and log in by using one of the following methods:
   - For a single-node server, log in to the server as admin, and then switch user to root by typing **`su -`**.
   - For a multi-node server, log in to the utility node as admin, and then switch user to root by typing **`su -`**.
2. Change directory by typing the following command:

   ```
   cd /usr/local/avamar/var/eagleeye/server_data/
   ```

3. Check the status of the Tomcat service by typing the following command:

   ```
   emwebapp.sh --test
   ```

   If the Tomcat service is running, the console returns the following output:

   ```
   INFO: Enterprise Manager web application status: up
   ```

System Summary pane is blank

The system summary depends on the output from a data collection utility. If the system summary is empty, run the utility to populate the summary values.

Procedure

1. Open a command shell and log in by using one of the following methods:
   - For a single-node server, log in to the server as admin, and then switch user to root by typing **`su -`**.
   - For a multi-node server, log in to the utility node as admin, and then switch user to root by typing **`su -`**.
2. Change directory by typing the following command:

   ```
   cd /usr/local/avamar/var/eagleeye/server_data/
   ```

3. Check for the presence of `acdc.xml` by typing the following command:

   ```
   ls -l acdc.xml
   ```

   The console displays the following output:

Option	Description
File present	`-rwxr-xr-x 1 admin admin 69285 Apr 3 11:08 acdc.xml`
File not present	`ls: cannot access acdc.xml: No such file or directory`

4. If `acdc.xml` is not present, run the data collection utility by typing the following command on one line:

   `bash /usr/local/avamar-tomcat/webapps/eagleeye/WEB-INF/classes/system_summary.sh`

   The console displays considerable output, ending in:

   ```
   ACDC Completed
   ```

5. In the Fitness Analyzer portal, click ↻.

   Fitness Analyzer reloads the system summary.

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