Scalar i500 Advanced Reporting Instructions

Document 6-01894-03 May 2009

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Advanced Reporting Features

Advanced Reporting provides the following reports that you can configure for viewing and analysis:

- **Drive Resource Utilization Report** — Provides tape drive usage information, showing you which tape drives are working at optimum capacity and which are under-utilized. This can help you allocate your tape drive resources properly.
- **Media Integrity Analysis Report** — Provides TapeAlert count for various combinations of tape drives, tape cartridges, and TapeAlert flags. This can help you determine if a problem is due to a specific tape drive or tape cartridge.

In addition to configuring and viewing the reports, you can also:

- Save and reuse report configurations as templates.
- Save or e-mail the report data.
- Delete the data in the Advanced Reporting log files.

Advanced Reporting provides the following log that you can configure, view, save, and e-mail:

- **Media Security Log** — Lists media that has been completely removed from the library.

Required Firmware

To use all the features of Advanced Reporting, your library firmware must be at version 570G or higher. The latest firmware and installation instructions are available at http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/SI500/Index.aspx.

Installing and Using Your Advanced Reporting License

If you purchased Advanced Reporting with your library, your license will already be installed when you receive your library. If you purchased Advanced Reporting after your initial purchase of your library, you will receive a *License Key Certificate* containing instructions on how to obtain and install your license key. You must install your license key on the library for which the license was purchased before you can begin using Advanced Reporting. To install or view your license, select **Setup > License** from the web client, or **Setup > Licenses** from the operator panel.

The Advanced Reporting license applies to your entire library, regardless of library size. If you increase the size of your library, your existing license applies to the new library configuration.

Using the Reports and Understanding the Data

Report data is collected and displayed in a specific manner. The following notes will help you interpret the reports.

- The data for these reports is collected in log files. When the log files reach their maximum size, the oldest information is deleted as new information is added. This may affect how much historical data you can access.
- The on-screen report contains a chart and a data table. When the log files are large, it would take an excessively long time to load all the historical data into the data table. For this reason, the table only contains a maximum of 1000 rows of data (beginning with the most recent) even if the log file contains more records. (The chart displays information for the entire range.) To view all of the data, you need to save or e-mail the data file. See Saving and E-mailing Advanced Reporting Data on page 7.
- The reports are built according to data in the log files, not your current library configuration. For this reason, your library may contain tape drives or cartridges that do not show up in the report. Similarly, the report may contain tape drives and cartridges that no longer reside in the library.
- Information about a tape drive, cartridge, or operation is not recorded in the Drive Resource Utilization log file until after a tape cartridge has been mounted (loaded) *and* unmounted (unloaded) from the tape drive.
- To see the exact values of each item in the displayed chart, move your mouse so that it "hovers" over the item you wish to see. An information bubble appears with the values listed in it. If you click on a bar, point, or slice, the information bubble locks in place and the hovering feature turns off until you reload the chart. The hovering feature does not work when the value equals zero.
- Values of zero do not appear in pie charts.

Loading and Reloading Advanced Reporting Data

When you first open an Advanced Report configuration screen, the system loads all the data from the library log file for that report to the Internet browser in preparation for creating your reports. If there is a lot of information in the log file, this may take several minutes.

The data that is loaded in the Internet browser remains unchanged until you log out of your library session or reload the data. If new data is added to the log file during your session (for example, a TapeAlert occurs), it will not appear in the on-screen report until you either log out of the library and log on again, or reload the data. To reload the data without logging out, click the **Reload** button on the report configuration page (see Figure 2). This reloads all the data for that report, which may again take several minutes.

You can see how many records were loaded from the log file for this report by looking at the Report Data section of the report configuration page. A note says "XX records read," where XX is the number of records (see Figure 2 on page 8).

Configuring the Drive Resource Utilization Report

1 From the library menu bar, select **Reports > Advanced Reporting > Drive Resource Utilization**.

The Drive Resource Utilization Report configuration page opens. This may take several minutes.

2 Configure the report by specifying the following:

- Range — Specifies the range of time covered by the report. Choose Last 7 days; Last 4 weeks (default); Last 3 months; or All History (as far back as there is data in the log file).
- Attribute — Specifies which value is included in the report. Select one of the following:
  - Data Written/Read (default) — The amount of data written to and read from each tape drive, shown separately in the chart.
  - Total Read and Write — The combined total amount of data written to and read from each tape drive.
  - Media Mount Count — The number of tape cartridge mounts.
  - Media Mount Time — The total amount of time media spent in the selected drive(s).
  - Media Motion Time — The total amount of time media spent in motion while in the tape drive (writing, reading, rewinding, etc.).
- Chart — How the data is displayed in the chart. Select Area, Bar (default), Line, or Pie.
- Type — The chart type. Select one of the following:
  - Rollup (default) — Displays the Grouping on the x-axis and the Attribute amount on the y-axis.
  - Trend — Shows how the Attribute amount changes over time for the selected Grouping.
- Grouping — Specifies which tape drive(s) or partition(s) to include in the report. Select one of the following:
  - All Drives by Coordinate (default) — Presents the sum total of the selected attribute for all tape drives according to their location in the library. If more than one tape drive resided in that location during the selected range, then the attribute values for all the tape drives that resided in that location are combined in the chart.
  - All Drives by Physical SN — Presents the sum total of the selected attribute for all drives according to the physical tape drive serial number.
  - All Partitions — Presents a comparison of all drives grouped by partition in the physical library.
  - Selected Drive by Coordinate — The report chart is based on an individual tape drive location in the library. If more than one tape drive resided in that location during the selected range, then the attribute values for all the tape drives that resided in that location are combined in the chart.

- Selected Drive by Physical SN — The report chart is based on an individual tape drive identified by its physical drive serial number.
- Selected Partition — The report chart is based on an individual partition in the physical library.

> **Note:** Refer to the *Scalar i500 User's Guide* for an explanation of the location coordinates.

3 Click **Next**.

The report is generated and appears on the screen.

Configuring the Media Integrity Analysis Report

1 From the library menu bar, select **Reports > Advanced Reporting > Media Integrity Analysis**.

The Media Integrity Analysis Report configuration page opens. This may take several minutes.

2 Configure the report by specifying the following:

- Range — Specifies the range of time covered by the report. Choose Last 7 days; Last 4 weeks (default); Last 3 months; or All History (as far back as there is data in the log file).
- Attributes— Specifies which values are included in the report, and how they are combined. Select in any combination, including all (default) and none. If you select no attributes, the chart displays the TapeAlert count for the selected Grouping.
    - Cartridge Barcode — All relevant tape cartridges.
    - Drive Physical SN — All relevant tape drives.
    - TapeAlert — The TapeAlert flags that were issued. For a description of all TapeAlert flags, see the online help or the *Scalar i500 User's Guide*.
- Chart — How the data is displayed in the chart. Choose Area, Bar (default), Line, or Pie.
- Type — The chart type. Select one of the following:
    - Rollup (default) — Displays the number of TapeAlerts for the combination of Grouping and Attributes you selected.
    - Trend — Shows the occurrence of TapeAlerts over time.
- Grouping— Specifies which drive(s) or tape cartridge(s) on which to base the report. Choose one of the following:
    - All (default) — All tape drives and tape cartridges for which a TapeAlert was issued during the specified range.
    - Selected Drive by Physical SN — An individual tape drive. Only tape drives which issued a TapeAlert during the specified range appear in the report.

  - Selected Cartridge by Barcode — An individual tape cartridge. Only tape cartridges that were associated with a TapeAlert during the specified range appear in the report.
- Sorting — Specifies how the data will be sorted. Choose Alphabetical, Count, or Last Occurrence (default).

3 Click **Next**.

The report is generated and appears on the screen.

Saving and E-mailing Advanced Reporting Data

You cannot save the report as it appears on the screen, but you can save or e-mail the report data as a comma-separated values (.csv) file. You can then import the .csv data into a spreadsheet program and manipulate it to create your own reports for analysis. The .csv file contains all of the data in the log file that falls within the date range you specify.

1 Generate a report as described in the sections above.

2 Scroll down to the bottom of the report viewing screen to a box titled **Retrieve the Report Data File**. See Figure 1.

3 To save the report data as a .csv file, click **Save**.

4 To e-mail the report data as a .csv file, type the name of a recipient in the empty field next to the **E-mail** button, then click **E-mail**.

Figure 1 Saving and E-mailing the Report Data

Creating and Using a Template

If you want to use the same configuration repeatedly, you can save it as a template. You can save up to 20 templates for each type of advanced report. See Figure 2.

1 From the report configuration page, make the selections you want.

2 In the **Report Templates** box at the bottom of the screen, type a name for the template in the empty field next to the **Save** button. The name can have a maximum of 15 characters. You can use only lowercase letters, numbers, and the underscore character (_) in template names.

3 Click **Save**. The report appears in the drop-down menu next to the **Load** button.

4 To use a saved template, select the template from the drop-down list and click **Load**.

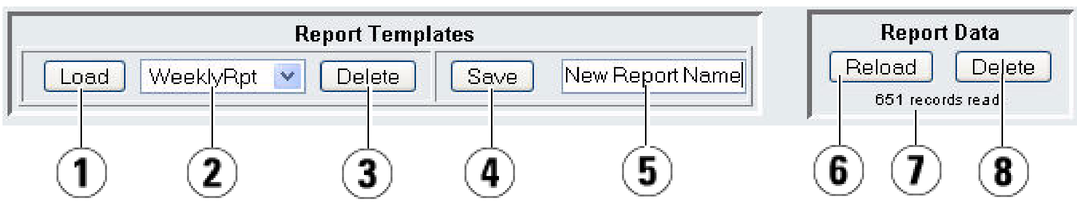
5 To delete a template, select the template from the drop-down list and click **Delete**.

Deleting Advanced Reporting Data

In some circumstances, you may wish to delete the data contained in the library log files used to build the advanced reports. To do this, click the **Delete** button in the **Report Data** section of either report configuration page. This deletes the data for both the Drive Resource Utilization report and the Media Integrity Analysis report. See Figure 2.

Caution: Once you delete the data in the log files, you cannot get it back. The **Reload** button does NOT retrieve deleted data! It is recommended that you save all the data for both the Drive Resource Utilization report and the Media Integrity Analysis report before deleting the data. See Saving and E-mailing Advanced Reporting Data on page 7.

Figure 2 Template and Report Data Functions



1	Loads the selected template.
2	Template drop-down list.
3	Deletes the selected template.
4	Saves a report configuration as a template.
5	Type name of new report here.
6	Reloads the data from the library log file to the Internet browser.
7	Lists the number of records currently loaded in the Internet browser for this report.
8	Deletes all the Advanced Reporting data.

Configuring and Viewing the Media Security Log

Media removal is detected by the library when it performs an inventory (at boot up; after an open door is closed, etc.). The media security notification feature allows you to customize and receive a log that lists media removed from the library.

> **Note:** The log lists media that have been completely removed from the library. It does not list media that move from one location to another within the library.

You can configure the library to collect any or all of the following information. By default, the library collects nothing and the log is empty. You must select each item you want the library to collect:

- Unexpected Removal Detection After Power-up and Reboot Only
- Unexpected Removal Detection During Library Operation
- Expected Removal Detection From I/E Slots During Library Operation

The log file contains the following information: Date and time of media removal; tape cartridge barcode; type of removal (expected or unexpected); slot location coordinates (of the slot the cartridge is missing from); and slot type (I/E, storage, or cleaning).

When the log file reaches its maximum size, the oldest information is replaced as new information is added.

To configure what information gets tracked in the log, select **Setup > Notifications > Advanced Reporting > Media Security** from the web client.

To view, save, or e-mail the report, select **Reports > Log Viewer** from the web client. Select **Media Security Log** from the list of logs and click **Next**.