NetworkAppliance®

The evolution of storage.™

VFM™ (Virtual File Manager) 5.6 Reports Guide

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Preface

What the guide covers

This guide describes how you can use VFM™ (Virtual File Manager) technology to customize, schedule, and publish reports, and process report data.

The guide is divided into the following sections:

- **Chapter 1 Introduction** – Provides a list of the reports that you can create with VFM.
- **Chapter 2 Create and Publish Reports** – Explains how to customize, schedule, and publish reports, and process report data.
- **Appendix** – Provides a list and description of the VFM documents.
- **Glossary** – Provides definitions of terms used in this guide.

Audience

This guide is for network administrators who are familiar with Windows NT®, Windows® 2000, Windows Server™ 2003, and DFS. It does not cover basic system or network administration topics.

Typographic conventions

- **Bold** text - Items on a dialog box or page on the VFM console that you are instructed to click.
- *<text in italics>* - Substitute the text within the greater than and less than symbols with the value requested.

Using the online help

- Certain icons appear to the left of a topic title to indicate that the information provided applies only to a specific operating system, type of DFS root, or data transfer protocol.

Icon	Description
Win2K	Indicates that the information applies only to DFS roots on Windows 2000 or Windows Server 2003, Enterprise Edition.
domain root	Indicates that the information applies only to domain-based roots.
W2K3	Indicates that the information applies only to DFS roots on Windows Server 2003.
CIFS	Indicates that the information applies only to CIFS data transfer.

- In the table of contents, a new topic is represented as a page with a red asterisk , and an entire section of new topics is represented as a book with a red asterisk .

- Definitions of new terms are available wherever they appear in help topics. The first time a new term appears in a help topic, it appears as a green hyperlink.
- Context help contains detailed information about a dialog box or view, and might include links to related topics. Press **F1** or click **Help**.

Support

Contact NetApp® technical support, 24 x 7.

Support is either through the web at http://now.netapp.com or by phone. See http://www.netapp.com/support for details.

Support phone numbers:

- 888 4-NETAPP (US and Canada)
- (1-888-463-8277)
- (408) 822-4700
- 800-44-NETAPP (EMEA/Europe)
- 800-800-0800 (Asia/Pacific)

Notes:

- You can also contact technical support by clicking **Support** on the **Help** menu.
- To get your product build number and license information, click **About Virtual File Manager** on the **Help** menu.

Enter new license key

Enter a new license key for the VFM client and server components when you want to extend the VFM evaluation period or when you purchase additional licenses from VFM.

1. Contact NetApp to request a new license key.
2. On the **Help** menu, click **About Virtual File Manager**.
3. Click **Edit Serial Numbers**.
4. In the License Type list, click the appropriate item.
5. If you selected "Evaluation" as the license type, type the new activation key.
6. If you selected "Full" as the license type, select a product number from the Product list and type the new activation key.
7. Click **OK**.

Chapter 1 Introduction

The Reports tree shows reports you generate and reports you save of recorded events or instructions processed. VFM provides a Report wizard that steps you through the process of creating a report in Hypertext Markup Language (HTML) and publishing it with an updated index file.

- When you create a report, you assign it to a report source group that specifies the locations where VFM gathers information for the report. You can assign multiple reports to a report source group.
- Report schedule groups specify when and how often VFM gathers data. VFM provides default report schedule groups. You can use the default settings or change the settings. A report schedule group can contain multiple report source groups.
- When you create a report, it appears under the report source group where it is assigned and under the Generated Reports folder. You can organize reports in folders under the Generated Reports folder.
- VFM enables you to view the contents of the report and modify the report.

Figure 1 Report tree

Reports you can generate

VFM enables you to create reports, publish them to a location you specify, process report data, and archive reports. VFM provides the following two categories of reports:

- Reports generated from data periodically gathered by report source groups and maintained by VFM. These reports appear under the report source groups where they are assigned and under the Generated Reports folder.
- Reports of recorded information, such as events. These reports are not scheduled and only appear under the Generated Reports folder.

VFM reports

The following table lists reports you can generate. These reports are assigned to report source groups.

Administrative Reports	Description
Disaster Recovery Policy Status	This report enables you to review links contained in the selected disaster recovery policies and enables you to check storage and replication status for each target of a policy.
Policy References (Admin View Selection)	This report enables you to view the resources referenced in selected policies.
Replication Policy Status	This report enables you to review source and destination links contained in the selected replication policy and enables you to check storage and replication status.

Logical Namespace Reports	Description
Namespace Properties	• This report provides an overview of physical items, such as servers and link targets (shared folders) that form part of the selected DFS root. • This report enables you to quickly review machines participating in the selected root, and enables you to check available disk space. • This report provides the option of gathering information about the size of the logical structure of the namespace (also referred to as BLOB size). **Note**: Gathering BLOB size information can take a long time, especially for stand-alone roots that contain a large number of links.
Physical References (Logical View Selection)	This report enables you to view the DFS links or roots that reference the targets in the namespace. The Report wizard enables you to filter the report by items you select in the Logical View.
Policy References (Logical View Selection)	This report enables you to view the resources referenced in policies. The Report wizard enables you to filter the report by items you select in the Logical View.
Replica Properties	This report provides an easy means for scanning a namespace and viewing links that are highly available because they have multiple targets, and viewing links that are not highly available because they only have one target.

Physical Resources Reports	Description
File Differences	This report provides an easy way to compare the differences that might exist in the contents of network shares.
Physical References (Physical View Selection)	This report enables you to view the DFS links or roots that reference the targets in the namespace.
Policy References (Physical View Selection)	This report enables you to view the resources referenced in policies. The Report wizard enables you to filter the report by items you select in the Physical View.
Server Properties	This report enables you to view the machines participating in your namespace.
Share Connections	This report provides an easy way to view how many users are currently connected to the items selected. This information is useful when you are considering taking a share offline or rebooting a machine for maintenance.
Share Permissions	This report enables you to view the permissions of the shares selected.
Share and Export Properties	This report includes information about shares and exports, such as local path, capacity, and space usage.

File System Reports	Description
Archived Files	This report lists files that do not have their archive attribute set.
File Ages	This report lists files arranged by age and file size for a specified location.
File Summary By Type	This report summarizes the numbers of files and space consumed based on the types of the files.
Files Not Backed Up	This report lists files modified within a specified time and whose archive attribute is set.
Large Files	This report lists files larger than a specified size in the selected locations. You can exclude files from the report that have been accessed recently.
New Files	This report lists files that were created within a specified time.
Orphaned Files	This report lists files whose owner is unknown (displayed as a raw SID) in your environment.
Over-utilized File Systems	This report lists file systems with small amounts of free space remaining.
Recently Used Files	This report lists the files accessed within a specified time.
Stale Files	This report lists files that have not been accessed within a specified time.

File System Reports	Description
Under-utilized File Systems	This report lists file systems containing a large amount of free space.
Usage By Owner	This report lists the amount of space consumed by files owned by each user.

NetApp Filer Reports	Description
Filer CIFS Configuration	This report enables you to review information about the CIFS set up on a filer.
Filer CIFS Statistics	This report enables you to review CIFS protocol usage information by filer.
Filer File System Status	This report enables you to review statistics about each volume on a filer.
Filer Properties	• This report enables you to view the filers participating in your namespace. • This report contains details about the filers, including model, product ID, status, up time, and operating system, and whether the filer is licensed for CIFS and NFS protocols.
Filer Protocol Usage	This report enables you to review CIFS and NFS protocol operations for a filer.
Filer Qtrees by Volume	This report enables you to review information about available qtrees by volume for a filer.
Filer RAID	This report enables you to review RAID group configuration information by volume for a filer.
Filer SnapMirror Status	This report enables you to review statistics about SnapMirror® status on selected filers.
Filer Snapshot	This report enables you to review information about available snapshots by volume for a filer.
Filer vFiler Status	This report enables you to review statistics about each vFiler™ on selected filers.

Chapter 2 Create and Publish Reports

This chapter explains how to use VFM to create, schedule, and customize reports and publish reports to a location you specify. Before you can publish reports, you must first enable report publishing.

Enable report publishing

VFM enables you to publish reports to a location you specify. Every time you publish a report, VFM generates an index file that is automatically copied to the same location as the published report. You must configure global report publishing settings before you can publish a report you generate.

1. On the **Tools** menu, click **Options**.
2. Under Systems Options, click **Report Publishing**.
3. Select the **Enable Report Publishing** check box.
4. Type the UNC path of the share where you want to publish reports and copy the updated index file, or click ... **Browse** to find a share.
5. Optionally type the name of an XSL style sheet you want to use for the index file. VFM provides a default style sheet. You can use this style sheet as a template for creating your own file. A copy of the style sheet is located in the VFM installation directory in the *Examples\Stylesheets\Report publishing* folder.
6. Optionally type the name of a batch file, or click ... **Browse** to find a batch file to run before VFM updates the index file.
7. Optionally type the name of a batch file, or click ... **Browse** to find a batch file to run after VFM updates the index file.
8. Click **OK**.

CAUTION: Make sure that the location you specify to publish reports is empty. VFM does not check for duplicate file names.

Notes:

- See "Running batch files" in the VFM document Advanced Configuration and Techniques for detailed information about configuring batch files to run in VFM.
- See "Batch files" in the VFM document Advanced Configuration and Techniques for detailed information about the example scripts provided by VFM.

How to create, schedule, customize, and publish reports

This section provides instructions about how to generate a report, and assign the report to a report schedule and source groups. It also provides instructions about how customize and publish reports.

Create and publish a report checklist

To create and publish your first report, perform the following tasks:

1. Generate a report.
2. Start data collection immediately.
3. Publish the report. To publish reports, you must enable report publishing in VFM. See “Enable report publishing” for instructions.

Generate a report

Gather information about the namespace and network resources, such as servers, shares, and exports.

- You specify the information that will appear on the report.
- You can process the data gathered by the report to run a batch file you specify and, if you enabled report publishing, you can publish the report.
- You assign the report to a source group and specify whether you want to archive the report.
- VFM provides numerous report types.
- Reports you create appear in the Report tree under the source group where they are assigned and under the Generated Reports folder.

1. Perform one of the following actions:
    - On the **Reports** menu, point to a category, and then click a report type.
    - Right-click the Reports tree, point to **New Report**, point to a category, and then click a report.
    - Right-click a report source group, point to **New Report**, point to a category, and then click a report.
3. The Report wizard steps you through the process of creating the report. For help on a dialog box, click ? help.

Notes:

- When creating file system reports, do not select overlapping shares when you specify the source for a report. For example, do not select C$ and a shared subdirectory of the C drive together in the scope of a report. This example results in double-reporting of the items beneath the shared subdirectory.
- You can also create a report of a specific item on the Logical View tree.
  - Right-click the item in the Logical View tree, point to **Reports**, and then click the report type.
  - To create a report of a specific target, click a link or root to display the **Properties** tab. Under **Target**, right-click a shared folder, point to **Reports**, and then click the report type.
- See "Running batch files" in the VFM Advanced Configuration and Techniques guide for detailed information about configuring batch files to run in VFM.
- See "Batch files" in the VFM Advanced Configuration and Techniques guide for detailed information about the example scripts provided by VFM.
- For instructions about how to enable report publishing, see "Enable report publishing."
- VFM provides default report schedule and source groups. For instructions about how to update a report group, see "Modify report groups."
- To configure application-wide default reporting settings, complete the following steps:
  1. On the **Tools** menu, click **Options**.
  2. Click **Reporting**.
  3. Update the settings and click **OK**. Only new reports contain the updated settings. Existing reports are not affected.

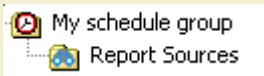
Create a report schedule group

Create a new report schedule group to run the source groups that are assigned to it. A report schedule group can be configured to start gathering information during off hours to offload network and computing resources during business hours. You can produce multiple reports from the data gathered without generating additional network traffic. Report schedule groups enable you to run batch files before and/or after a schedule runs.

1. Right-click Reports and click **New Report Schedule Group**.
2. Type a name for the schedule group.
3. Select the **Use schedule** check box.
4. Click **New** and configure how often you want the assigned report source groups to gather data and run the reports.
5. Optionally, click **Scripts** to type the name of batch files you want to run before and/or after the report schedule group runs.
6. Click **OK**. The report schedule group appears under the Reports tree.

Notes:

- VFM provides several report schedule groups. You can use the default settings or you can modify them.
- When you create a report schedule group, VFM creates a default report source group named "Report Sources." You must edit the default source group and specify locations where you want to gather information.



- See "Run customized commands" for instructions about how to run a schedule or source group batch file.

Create a report source group

Create a new report source group to periodically gather and store information about your storage environment. You produce reports based on the data that is gathered. A report source group specifies the location where you want to gather the data. It enables you to also specify batch files to run before and after the information is gathered. Source groups are assigned to report schedule groups. You can assign multiple report source groups to a report schedule group.

1. Right-click a report schedule and click **New Report Source Group**.
2. Type the name of the source group.
3. Click **Add** and type the path of the item where you want to gather data. See the "Note" below for format examples.
4. Repeat Step 3 to add more locations.
5. Optionally, click **Scripts** to type the name of batch files you want to run before and/or after the report source group runs.
6. Click **OK**.

Note: The following examples illustrate the formats you should use when adding items to the list.

- An Admin View policy
  - **Format**: $/Admin View/<item>
  - **Example:** $/Admin View/Data Movement Policies/Migration Policies/My migration policy
- All Migration policies
  - **Format:** $/Admin View/<item>
  - **Example:** $/Admin View/Data Movement Policies/Migration Policies
- (CIFS only) A link or logical folder in the Logical View
  - **Format:** \\<domain>\<DFS root>\<link or logical folder>
  - **Example:** \\ilus.com\priamroot\marketing
- (CIFS only) A directory under a share on a machine
  - **Format:** \\<machine name>\<share>\<directory>
  - **Example:** \\mars.nuview.com\sales\FirstQtr2003
- A qtree on a filer
  - **Format:** <filer name>:/vol/<volume name>/qtree
  - **Example:** moria:/vol/vol0/EngineeringRpts
- A volume on a filer
  - **Format:** <filer name>:/vol/<volume name>
  - **Example:** moria:/vol/vol0
- (NFS only) An export
  - **Format:** <hostname>:/<root>/<subdirectory>
  - **Example:** moria:/vol/marketing

Modify a report group

Changes you make to a schedule or source group affect all the reports that are members of the groups.

1. Perform one of the following actions:
   - Right-click a report schedule or source group and click **Properties**.
   - Select a report schedule or source group to show a Properties tab in the right pane. Click Edit or right-click anywhere on the page and click **Properties**.
2. Make the necessary updates and click **OK**. See "Create a report schedule group" or "Create a report source group for detailed instructions.

Move a source group

When you move a source group to another schedule group, all the reports assigned to the source group move to the new schedule group.

1. Perform one of the following actions:
    - Right-click a source group and click **Move to schedule group**.
    - Select the schedule group that contains the source group you want to move to show a Properties tab in the right pane. Right-click the source group you want to move and click **Move to schedule group**.
2. Select the schedule group you want to move the source group or click **Create schedule group** to move the source group to a new schedule group.
3. Click **Finish**.

View reports assigned to a source group

View the list of reports that are generated from data gathered by a report source group.

Perform one of the following actions:

- Expand a source group in the Report tree to show all the reports that are assigned to it.
- Select a report source group to show a Properties tab in the right pane. The reports assigned to it appear under "Reports."

Note: All the reports you create also appear alphabetically under the Generated Reports folder.

Organize reports

Add folders to organize your reports in the Generated Reports folder. The Generated Reports folder lists all your reports in alphabetical order.

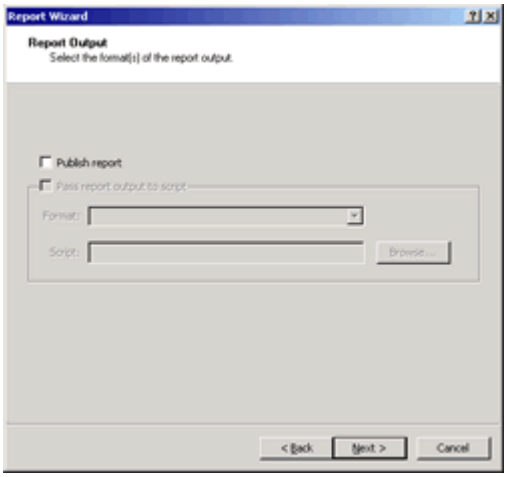
1. Right-click the Generate Reports folder and click **New Folder**.
2. Type a meaningful name for the folder.

Note: Whenever you create a report, it appears under the report source group to which it is assigned and under the Generated Reports folder.

Publish reports

Before you can publish reports, you must enable report publishing. VFM publishes reports in HTML.

1. Perform one of the following actions:
    - Right-click a report and click **Properties**.
    - Select a report to show its contents in the right pane. Click **Edit**.
2. Click **Next** until you see the "Report Output" dialog box.

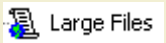


3. Select the **Publish report** check box.
4. Click **Next** until you see the "Report Name" dialog box.
5. Click **Finish**. The next time new data is gathered, the contents of the report is updated, and the report is published.

Notes:

- In the Reports tree, published reports are distinguished from reports that are not published.

  An unpublished report

  A published report
- You can configure report publishing as the default option for all the reports you create.
  1. On the **Tools** menu, click **Options**.
  2. Click **Reporting**.
  3. Under Output Format, select **Publish report**.
  4. Click **OK**.
- To publish all reports designated for publication, see "Manually publish all reports."
- VFM synchronizes published reports in the Reports tree with their published location. When you delete a published report from the Reports tree, VFM also deletes the report from the location where it is published.

Run customized commands during index file generation

VFM enables you to run batch files before and after the index file is updated when you publish reports.

1. On the **Tools** menu, click **Options**.
2. Click **Report Publishing**.
3. Select **Run batch before updating index file** and type the name of a batch file, or click ... **Browse** to find a batch file in your network you want to run before VFM updates the index file.

4. Select **Run batch after updating index file** and type the name of a batch file, or click ... **Browse** to find a batch file in your network to run after VFM updates the index file.
5. Click **OK**.

Notes:

- See "Running batch files" in the VFM Advanced Configuration and Techniques guide for detailed information about configuring batch files to run in VFM storage policies.
- See "Batch files" in the VFM Advanced Configuration and Techniques guide for detailed information about the example scripts provided by VFM.

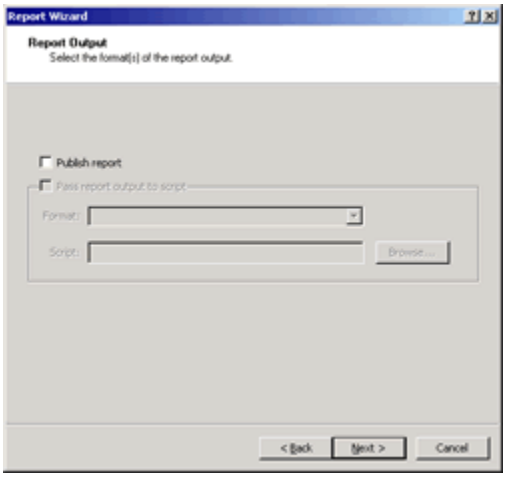
Output report data to a file

Specify a batch file to process report data and select the format you want to output the data. VFM enables you to specify a batch file for a single report or for all reports you generate. A copy of the report is stored in VFM and is available in the Reports tree.

To specify a batch file for a single report:

Perform one of the following actions:

- To specify a batch file for an existing report, right-click a report and click **Properties**.
  1. Click **Next** until you see the "Report Output" dialog box.



  2. Select **Pass report output to script**.
  3. In the **Format** list, select the format in which you want to output the data.
  4. Type the name of a batch file that will process the data, or click **Browse** to find the file.
  5. Click **Next** until you see the "Report Name" dialog box.
  6. Click **Finish**. The batch file runs the next time the schedule for the report runs.
- To specify a batch file for a new report, point to a report category on the **Reports** menu, and click a report type. The Report wizard steps through the process of creating the report and specifying a batch file.

To specify a batch file for all reports:

You can specify a default batch file to process the data for all reports.

1. On the **Tools** menu, click **Options**.
2. Click **Reporting**.
3. Select **Pass report output to script**.
4. In the **Format** list, select the format in which you want to output the data.
5. Type the name of a batch file that will process the data, or click **Browse** to find the file in your network.
6. Click **OK**.

Notes:

- See "Running batch files" in the VFM Advanced Configuration and Techniques Guide for detailed information about configuring batch files to run in VFM.
- See "Batch files" in the VFM Advanced Configuration and Techniques Guide for detailed information about the example scripts provided by VFM.

Manually publish all reports

You can publish all the reports appearing in the Reports tree that are enabled for publishing. This feature is useful when you change the location where reports are published and you want to populate the new location with reports.

Perform one of the following actions:

- Right-click Reports and click **Publish Reports Now**.
- Select **Reports** to show a Properties tab in the right pane. Right-click anywhere on the page and click **Publish Reports Now**.

Note: The reports are published with the data gathered the last time the report schedule groups ran.

Start data collection immediately

When you manually start data collection, VFM updates the data gathered and then updates the reports based on the new data. When you start data collection for a report schedule group, all the report source groups assigned to the schedule group gather new data and update their respective reports. VFM enables you to start data collection for a report source group.

Perform one of the following actions:

- Right-click the report schedule group or report source group that contains the reports you want to refresh and click **Start data collection now**.
- Select a report schedule group or report source group to show a Properties tab in the right pane. Right-click anywhere on the page and click **Start data collection now**.

Save event history

Save a current list of events for an item in the namespace or for supporting servers, shares, and exports. The report appears under the Generated Reports folder in the Reports tree.

1. Click an item under Admin View, Logical View, or Physical View.
2. Click the **Events** tab that appears in the right pane.
3. Click **Save** to save a copy of the event list.
4. Type a name for the report.
5. Optionally, select an existing folder or click **New Folder** to create a new folder to save the report.
6. Click **Finish**.

Note: To view all the events for a view (Admin, Logical, or Physical), click the view on the tree.

Modify a report

Update the properties of a report.

1. Expand the Reports tree.
2. Perform one of the following actions:
   - In the Generated Reports folder, right-click the report you want to change and click **Properties**.
   - Select the report source group where the report is assigned to show a list of reports on the Properties tab that appears in the right pane. Right-click the report you want to change and click **Properties**.
   - Open the report and click Properties on the report toolbar.

The Report wizard steps you through the process of updating the report.

Configure report archiving

You can specify how many copies of a report you want to keep. VFM enables you to specify this option for all reports or a single report.

To configure application-wide report archiving:

Configure a default value for all reports. Existing reports are not affected. Only reports you create after configuring this value are affected.

1. On the **Tools** menu, click **Options**.
2. Click **Reporting**.
3. Select **Enable report archiving** and type the number of copies you want to keep for all reports.
4. Click **OK**.

To configure report archiving for a report:

You can change the default report archiving value for new or existing reports. When you create a new report, the Report wizard provides the option of changing the value for report archiving. To change report archiving for an existing report, complete the following steps:

1. Right-click a report and click **Properties**.
2. Click **Next** until the "Report Name" dialog box of the Report wizard appears.
3. Select **Enable report archiving** and type the number of copies you want to keep for the report. When this number is exceeded, VFM deletes the oldest report.
4. Click **Finish**.

Update a report schedule

To update when and how often a report is generated, you must update the schedule group to which the report belongs. Updating the schedule of a schedule group affects all the reports that belong to the group.

1. Perform one of the following actions:
   - Right-click the report schedule group and click **Properties**.
   - Select a report schedule group to show a Properties tab in the right pane. Click Edit.
2. Click **Schedule**.
3. Click **New** and configure your schedule.
4. Click **OK**.

Note: The data-gathering process might take a significant amount of time, depending on the report type and volume of data to be gathered. It is not recommended that you run a report more frequently than the interval required to gather data for a report schedule group.

Run customized commands

VFM enables you to run batch files before and after report schedule or report source groups run. When a schedule group and its source groups run batch files, VFM executes the batch files in a specific order. The order in which the scripts are executed is illustrated in the "Note" section of this topic.

1. Right-click a report schedule or report source group and click **Properties**.
2. Click **Scripts**.
3. Select **Run batch before gathering data** and type the name of the batch file you want to run, or click **Browse** to find the file in you network.
4. Select **Run batch after gathering data** and type the name of the batch file you want to run, or click **Browse** to find the file in your network.
5. Click **OK**.

Note:

The following example illustrates the order in which batch files run when they are specified in a schedule group and the source groups assigned to it. In the example, S*ourceA*, and S*ourceB* report source groups are assigned to the report schedule group named *Schedule1*. All three groups are configured to run batch files.

1. *Schedule1* starts and runs the batch file specified to run before gathering information.
2. *SourceA* starts. The source group performs the following actions:
    1. Runs the batch file specified to run before information is gathered.
    2. Gathers information.
    3. Runs the batch file specified to run after the information is gathered.
3. *SourceB* starts. The source group performs the following actions:
    1. Runs the batch file specified to run before information is gathered.
    2. Gathers information.
    3. Runs the batch file specified to run after the data is gathered.
4. *Schedule1* runs the batch file specified to run after all the source groups gather information.

View the data collection log

You can view information about the data gathered for reports. The Data Collection Log is refreshed every time you refresh all the reports assigned to a report source group and every time the report schedule group runs.

1. Select a report source group to show tabs on the right pane.
2. Click the **Data Collection Log** tab.
3. Select an item in the log and click **Properties**, or double-click an item to view detailed information.

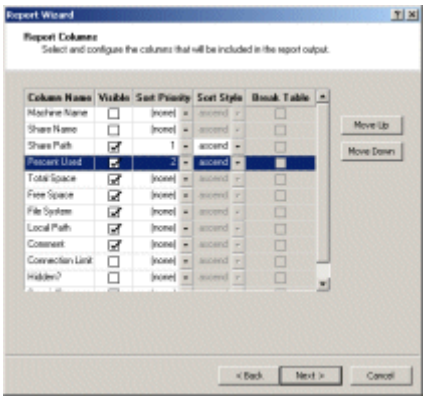
Notes:

- Click a column heading to sort the information appearing in the log by descending or ascending order.
- By default, VFM shows all the data in the log. You can filter the information that appears.
    - Click **Error** to view only information about items that were not gathered because of errors.
    - Click **Warning** to view only information about items that encountered some failures.
    - Click ✓ **Completed** to view only information about items that were completed successfully.

Update the format of a report

Some reports enable you to specify how the data is arranged on the report. The type of information that is gathered for a report determines whether this feature is available.

1. Right-click a report and click **Properties**.
2. Click **Next** until the "Report Columns" dialog box of the Report wizard appears.



3. Select the data that should appear on the report. Select or clear the check boxes under **Visible**.
4. Arrange the column headings using the move keys.
5. Define how you want to sort the data. Begin by selecting the highest sort priority and optionally continue with the next level of priority.
6. Select how you want the data sorted (for example, ascending [A to Z] or descending [Z to A]). You must configure the sort priority of a column heading before you can configure the sort style.
7. Optionally arrange the data into multiple tables. VFM enables you to "break" the table by up to three sort priorities. When the value in a selected column changes, the wizard creates a new table.
8. Click **Next**.
9. Click **Finish**.

Report formatting examples

The following examples illustrate how you can format a report using the VFM Report wizard.

Example 1

The vertical list of selected column headings is arranged from left to right on the report table. In the following example, the Break Table option is not selected and the report is created with only one table. The table is sorted by Share Name and sub-sorted by Total Space.

Report wizard

Column Name	Visible	Sort priority	Sort style	Break table
Machine Name	☐			☐
Share Name	☑	1	ascending	☐
Share Path	☑			☐
Percent Used	☐			☐
Total Space	☑	2	ascending	☐
Free Space	☑			☐

Report output

Share Name	Share Path	Total Space	Free Space
Marketing	\\machine5\Marketing	10.0 MB	2.0 MB
Marketing	\\machine2\Marketing	20.0 MB	6.0 GB
Reports	\\machine2\Reports	10.0 MB	6.0 GB
Reports	\\machine1\Reports	20.0 MB	6.0 GB
Vouchers	\\machine2\Vouchers	5.0 MB	1.0 GB
Vouchers	\\machine1Vouchers	25.0 MB	2.0 GB

Example 2

In the following example, the Break Table option is selected for Share Name. A new table is created every time the Share Name changes. Each table is sorted by Total Space.

Report wizard

Column Name	Visible	Sort priority	Sort style	Break table
Machine Name	☐			☐
Share Name	☑	1	ascending	☑
Share Path	☑			☐
Percent Used	☐			☐
Total Space	☑	2	ascending	☐
Free Space	☑			☐

Report output

Marketing

Share Path	Total Space	Free Space
\\machine5\Marketing	10.0 MB	2.0 MB
\\machine2\Marketing	20.0 MB	6.0 GB

Reports

Share Path	Total Space	Free Space
\\machine2\Reports	10.0 MB	6.0 MB
\\machine1\Reports	20.0 MB	6.0 GB

Vouchers

Share Path	Total Space	Free Space
\\machine2\Vouchers	5.0 MB	1.0 GB
\\machine1\Vouchers	25.0 MB	2.0 GB

Move a report

You can move a report or multiple reports to another report source group under the same or a different schedule group.

To move one report to another source group:

Perform one of the following actions:

- Drag the report from anywhere in the Report tree to another source group.
- Right-click the report and click **Move to report source group**. Select the source group you want to move the report or click **Create source group** to move the report to a new **source group**. Click **Finish**.
- Select the **source group** to which the report you want to move is assigned. A list of reports appears on the Properties tab in the right pane. Drag a report to another **source group** in the Report tree.

To move multiple reports to another source group:

1. Perform one of the following actions:
    - Click the **source group** to which the reports you want to move are assigned. A list of reports appears on the Properties tab in the right pane. Select the reports you want to move.
    - Under the Generated Reports folder or a subfolder, select the reports you want to move.
2. Right-click and click **Move to report source group**.

3. Select the **source group** you want to move the reports or click **Create source group** to move the reports to a new **source group**.
4. Click **Finish**.

Note: To move all the reports in a source group to another schedule group, see "Move a source group."

View the contents of a report

VFM provides several ways to view the contents of a report. Perform one of the following actions:

- Expand the Generated Reports folder. Click the report you want to view.
- Expand a report source group and click the report you want to view.
- Click a report source group to show a Properties tab in the right pane. Double-click a report.

The content of the report appears in the right pane.

Note: The time and date the report was last updated are displayed as a tool tip.

Rename a report

Change the name of a report.

1. Perform one of the following actions:
   - Slowly click the name of the report.
   - Right-click a report and click **Rename**.
2. Type a new name.
3. Press **Enter**.

Print a report

Print a report that is opened on the right pane.

Perform one of the following actions:

- Open a report and click **Print** on the report toolbar.
- Right-click anywhere on the opened report and click **Print**.

Note: To designate and configure the printer that VFM uses for printing reports, click **Print Setup** on the **File** menu.

Delete a report

VFM synchronizes published reports in the Reports tree with their published location. When you delete a published report, VFM also deletes the report from the location where it is published. To delete a report, perform one of the following actions:

- Expand the **Reports** tree, double-click the Generated Reports folder, select the report, and click delete on the main toolbar.
- Expand the **Reports** tree, double-click the Generated Reports folder, right-click the report, and click **Delete**.
- Expand a source group, right-click a report, and click **Delete**.
- If the report is opened in the right pane, right-click the report and click **Delete**.
- If the report is opened in the right pane, click delete on the report toolbar.

Notes:

- When the VFM server is uninstalled, all the reports appearing in the Reports tree are deleted. To save the reports, see "Application server availability" to export your VFM configuration files.
- When you delete a report, all copies of the report are removed from the Report tree. For example, if you delete a report in the Generated Reports folder, the report is also removed from all source groups to which it is assigned.
- When you delete a report, all the archives for the report are deleted.

Delete a report source group

When you delete a report source group, the reports assigned to the group and their archives are deleted.

1. Perform one of the following actions:
    - Under a report schedule group, right-click a source group and click **Delete**.
    - Select a report schedule group to show a Properties tab in the right pane. Right-click a source group and click **Delete**.
2. Click **Yes**.

Delete a report schedule group

When you delete a report schedule group, all the source groups, reports, and archives assigned to it are deleted.

1. Perform one of the following actions:
    - Right-click a report schedule group and click **Delete**.
    - Click the Report tree to show a Properties tab in the right pane. Right-click a report schedule group and click **Delete**.
    - Select a schedule group to show a properties tab in the right pane. Right-click

anywhere on the page and click **Delete**.

2. Click **Yes**.

Appendix

The following table lists the VFM guides. The list is arranged in ascending order by document title.

No.	Title	File name	Contents
1.	Advanced Configuration and Techniques	AdvancedConfig.pdf	• Explains how to use VFM to configure security permissions • Explains how to manage replication and monitoring agents • Explains how to run batch files in policies and reports • Explains how to make the VFM server highly available
2.	Data Lifecycle Automation Policies Guide	DataLifecyclePolicies.pdf	Explains how to create and manage archival migration policies to optimize storage.
3.	Data Movement Policies Guide	DataMovePolicies.pdf	• Explains how to transfer CIFS and NFS data by creating migration and replication policies • Explains how to transfer data between NetApp filers by creating SnapMirror policies • Explains how to load balance Windows servers by creating storage load balancing policies
4.	Disaster Recovery Policies Guide	DRPolicies.pdf	Explains how to make data highly available by creating client, filer, and server disaster recovery policies
5.	Getting Started Guide	GettingStarted.pdf	A tutorial to get you started using VFM. It explains how to install VFM and steps you through the process of creating a logical namespace, making the namespace highly available, making data highly available, transferring CIFS and NFS data, creating multiprotocol namespaces, virtualizing user home directories, and backing up data and the namespace.
6.	Manage Physical	PhysicalResources.pdf	Explains how to use VFM to work

No.	Title	File name	Contents
	Resources Guide		with NetApp filers, set replication properties, and work with Windows and UNIX machines
7.	Namespace Guide	Namespace.pdf	Explains how to create a DFS namespace (roots, links, and link targets), namespace creation, permission based, namespace availability, multiprotocol namespace, home folder, and namespace backup policies
8.	Reports Guide	Reports.pdf	Explains how to create and publish reports
9.	Snapshot Policies Guide	SnapshotPolicies.pdf	Explains how to use VFM to manage snapshots on NetApp filers using snapshot access and snapshot scheduling policies
10.	Troubleshooting Guide	Troubleshooting.pdf	• Includes diagnostic information, such as troubleshooting, event IDs, migration, replication, and status indicators • Provides examples of file exclusions and inclusions

Glossary

A

ACE: Access Control Entry, an entry in an Access Control List.

ACL: Access Control List, a list associated with a file that contains information about which users or groups have permission to access or modify the file.

Alternate volume: SEE Replica.

C

Child node: SEE DFS link.

CIFS: Common Internet File System. A file-sharing protocol based on the Microsoft Server Message Block (SMB). It enables you to share file systems over the Internet and Intranet. The CIFS protocol is used primarily for file sharing by Windows platforms.

Client: The user interface component of the application.

Consolidation DFS root: A special stand-alone DFS root that has its configuration information stored locally on a member server. The root must be hosted on Windows Server 2003.

D

Dependencies: The servers, drives, and shared folders that together contain the data published through the DFS namespace

DFS: Microsoft Distributed File System consists of software residing on network servers and clients that transparently links shared folders on different file servers into a single namespace for improved load balancing and data availability. NOTE: This should not be confused with Transarc's DFS product, which is a separate distributed file system product that is not interoperable with the Microsoft product.

DFS branch: SEE Shared folder.

DFS leaf: SEE Shared folder.

DFS link: Located under the DFS root. Forms a connection to one or more shared folders, DFS links, or another DFS root. NOTE: In Windows NT 4 terminology, this is referred to as a child node, a junction point, or an inter-DFS link.

DFS namespace: The logical view of shared file resources seen by users.

DFS path: A UNC path starting at a DFS root. Stand-alone DFS paths are rooted at a stand-alone root, while domain-based paths are rooted at a domain-based DFS root.

DFS root: The share at the top of the DFS topology. The starting point for the DFS links and shared folders that make up the DFS namespace.

DFS topology: Overall logical hierarchy of a distributed file system, including elements such as roots, links, shared folders, and replica sets.

DFS tree: The consolidated DFS view provided by the application, which includes the Admin View, Logical View, Physical View, and Reports.

DFS volume: SEE Shared folder.

Domain-based DFS root: A DFS root that has its configuration information stored in Active Directory. The root can have multiple root targets, which offers fault tolerance and load sharing at the root level.

F

Fault-tolerant DFS: SEE Domain-based DFS root

FQDN: Fully-qualified Domain Name. A host, domain name, and a top-level domain. For example, www.nuview.com is a fully-qualified domain name where www is the host, .nuview is the second-level domain, and .com is the top-level domain.

FRS: Microsoft File Replication Service.

G

GID: Group Identification Number. A unique number assigned to identify a group of users in UNIX environments.

I

Inter-DFS link: SEE DFS link.

J

Junction point: SEE DFS link.

L

Link target: A DFS link can have as targets: 1 to N shared folders, OR 1 to N stand-alone DFS paths, OR only 1 domain-based DFS path.

M

Migration candidates: Items that match migration criteria in an archival migration policy. You can select which items you want to migrate. Items not selected for migration are automatically added to the exclusion list of the archival migration policy.

Migration tasks: Items to be migrated during a scheduled migration or manually at any time.

Monitoring agent: The component that can be installed to evaluate storage policies from a different machine than the one where the application server is installed.

N

NFS: Network File System developed by Sun Microsystems. A file-sharing protocol that enables you to share file systems over the Internet and Intranet. NFS is used with both UNIX and non-UNIX computers.

NFS export: A directory that is published for access by NFS clients. The export specifies a directory to be exported and which machines have access to the directory. NFS exports

are similar to CIFS shares in that they provide access to directories.

P

Pool: A group of storage locations.

Primary server: An active application server or monitoring agent.

Primary target: In a disaster recovery policy, this is the active target to which users are referred by the DFS root.

Q

qtree: A special directory of the root of a volume that behaves like a virtual subvolume with special attributes.

R

RAID: Redundant Array of Independent Disks enables file access even when a disk in a RAID group is damaged.

References: The DFS link targeting the selected physical item. For example, when you click a server under the Physical View tree, properties and associated DFS links appear.

Replica: A DFS root or DFS shared folder that provides an alternate path for a DFS link. NOTE: In Windows NT 4 terminology, this is referred to as an alternate volume.

Replica set: Two or more DFS roots or DFS shared folders that provide alternate paths for a DFS link.

Replication agent: The component deployed by the application server or monitoring agent component during configuration of storage policies that transfer CIFS data, or when you run a file differencing report. NOTES: Deployment of replication agents can be controlled through a machine's properties dialog box accessible from the Physical View. For data transfer using the NFS protocol, the replication agent must be installed manually.

Report schedule group: Enables you to set a schedule to automatically gather information. A report schedule group can be configured to start during off hours to offload network and computing resources during business hours. You can produce multiple reports from the data gathered without generating additional network traffic.

Report source group: Specifies the location where you want to gather information. It is assigned to a report schedule group. A report source group also enables you to specify batch files to run before and/or after the information is gathered.

Report type: Determines what information is gathered. Report types are assigned to report source groups.

S

Secondary target: SEE Standby target.

Server: The component that responds to requests from the client component, monitors the DFS namespace, and processes storage policies.

Shared folder: File or folder in the DFS namespace that can be accessed by users who have proper permissions. NOTE: In Windows NT 4, this is referred to as a DFS volume, leaf, or branch.

SID: Security identifier that uniquely identifies a Windows user or group.

Stand-alone DFS root: A DFS root that has its configuration information stored locally on the host server. The root has a single root target. When the root target is unavailable, the data referenced by links under the root is inaccessible.

Standby server: A machine that is standing by (not active) for the application server or a monitoring agent. During a failover, a standby server can become the active server.

Standby target: A target in a disaster recovery policy that is offline. During a failover, a standby target can become the active target.

Storage location: A combination of a server UNC path and the local path pointing to a directory in the file system. For example, \\rama:c:\ is a storage location representing the C drive on machine "rama" and \\secure.npb.com:/vol/vol0/myqtree is a storage location representing the qtree "myqtree" on volume vol0 on secure.npb.com.

T

Target: LINK TARGET: A shared folder, a DFS link, or a DFS root that is referenced by a DFS link. ROOT TARGET: A shared folder that is referenced by a DFS root. SEE ALSO Link target.

Trustee: The user account, group, or logon session to which an Access Control Entry (ACE) applies.

U

UID: User Identification Number. A unique number assigned to identify a user in UNIX environments.

UNIX file permissions: Control access to files and directories. Permissions can be applied to the owner of a file, a group, or everyone on the UNIX network.

W

Widelink namespace: A logical namespace hosted on a NetApp filer CIFS share that provides the benefits of a namespace without requiring additional Windows servers.

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